



摆线针轮减速机



中国驰名商标
CHINA WELL-KNOWN
TRADEMARK

TAILONG

地址(ADD): 江苏省泰兴市大庆东路88号

NO.88,Daqing Rd.(E)TaiXing City,Jiangsu Province, China

电话(TEL): 0086-523-87635698 87668018 87668028

传真(FAX): 0086-523-87662169 87665426 87665000

邮编(P.C): 225400

网址: <http://www.tailong.com> E-mail: tloffice@tailong.com

TAILONG MACHINERY

江苏泰隆机械集团公司
JIANGSU TAILONG MACHINERY GROUP COMPANY

江苏泰隆减速机股份有限公司
JIANGSU TAILONG DECELERATOR MACHINERY CO.,LTD.



Company Brief

Tailong Group, located in Taixing city along riverside of the Yangzi River, is a national giant enterprise which Taixing people are proud of. Tailong Group is east to Highway of Shanghai-Nanjing, west to Nanjing Lukou airport and south to the Jiangyin Bridge. Convenient transportation and smooth physical distribution build the unparalleled location advantages for Tailong Group.

With effortful operation for over 20 years, Tailong Group, under leadership of national outstanding entrepreneur, chairman Mr. Yin genzhang, a model worker of Jiangsu Province, has developed in one of top 500 machinery industrial enterprises in China, playing a leading role in domestic reducer/transmission industry.

At present, the group has total assets of RMB1206million, and fixed assets of RMB 692 million, and it covers an area of 800,000 square meters and more than 3000 employees, where professional technicians account for 991. 48% of our equipments are sophisticated and advanced manufacturing equipments and testing equipments such as large CNS gear grinding machine, large CNC boring and milling machine, worm grinder, machining centre, and carbonitriding furnace that are imported from USA, Germany, Japan, Russia, Australia and so on. Diameter of machining work piece reaches 5m to the maximum. Single reducer we produced reaches 120 tons to the maximum. We have established a 2000kW testing center with most complete testing function and most advanced instruments of the industry national wide, and established a provincial engineering technical center, mechanical transmission and control Engineering Research Center of Jiangsu Province, Tailong Group - Harbin Technology Engineering Research Center and a post-doctoral research station. The dominant product, the reducer is available in decades of series and several hundred thousand specifications. Equipped with advanced modular and dot line engagement technology, we have additionally developed series of high tech products such as TL modular gear retarded machine, TXP modular planet reducer, heavy load modular gear retarded machine, dot line engaged reducer, vertical grinder and edge drive grinder gearbox, joint, open-book, take-up gearbox used for aluminum metallurgy industry, three ring gear reducer, planetary wheel speed reducer, wind driven gearbox, transmission for hydro-power generation, nuclear circling pump driven gearbox, and various special non-standard gearboxes. Tailong Industrial Park has become the largest steel cord production base of national wide. Our two-vane and three-vane Roots blowers and high temperature blower are exported to South East Asia, Europe and America in batches.

Our products are successfully used in the China Millennium Monument, the Three Gorges Dam, the Chang'e launch, Hangzhou Bay Bridge, Beijing Olympic Gymnasium, the Shanghai World Expo and other national key projects. Key customers include Baosteel Group, Shougang Group, Shanghai Zhenhua Port Machinery, Yanshan Petrochemical, Gezhouba Group, Beijing hydraulic, China aluminium, Iraqi pump station, Guilin Rubber, Leshan Chengfa, Sany Heavy Industry and so on.

The company is now a secretariat unit for national technical committee for standardization of reducer. We are ever granted as "national first contract respecting and credit-keeping enterprise", "national key high-tech enterprise", "national high quality and efficiency unit in machinery industry", "quality management award of national machinery industry", "national custom satisfied service", "excellent enterprise of quality management team activity of national machinery industry" and so on. We are certified as the good enterprise with better standardization with national AAAA certification and the first grade safety quality standardized machinery manufacturing enterprise and have passed such certifications as GB/T 19022-2003 perfect measurement test system, ISO 9001-2008 quality system, ISO 14001-2004 environment system, and OHSAS 18001-1999 occupational health and safety. Our products are certified with safety marks for mining products and recognized pass lifting industry type test. Tailong brand is recognized as the Chinese famous brand by national industrial and commercial bureau and Tailong reducer is awarded as the Chinese famous brand product.

Tailong people will keep to its persistent quality guarantee, service guarantee and credit, satisfying customer as our topmost pursuit.

公司简介

泰隆集团地处扬子江畔的泰兴市区，是泰兴人引以为豪的国家大型企业。泰隆集团东临沪宁高速，西靠南京禄口机场，南有江阴大桥，交通便捷，物流畅通，具有得天独厚的区位优势。

集团在全国优秀企业家、江苏省劳动模范董事长殷根章的领导下，经过20多年的悉心经营，昂首迈进了中国机械工业500强，成为全国减变行业排头兵企业。集团现拥有总资产12.06亿元，固定资产6.92亿元，占地面积80万平方米，员工3162人，专业工程技术人员991人。拥有美国、德国、日本、俄罗斯、奥地利等国家引进的大型数控磨齿机、大型数控镗铣床、蜗杆磨床、加工中心、碳氮共渗炉等一批高精尖的生产设备和检测设备达48%。建立了全国同行业中检测功能最全、仪器最先进的2000kW测试中心，创建了江苏省技术中心、江苏省传动机械与控制工程技术研究中心、泰隆集团-哈工大工程技术研究中心、博士后科研工作站。公司的主导产品减速机在原有十几个系列，几十万种规格的基础上，采用先进的模块化、点线啮合等技术开发出了TL模块化齿轮减速机、TXP行星模块化减速器、重载模块化齿轮减速器、点线啮合减速器、立式磨齿及边缘传动磨齿齿轮箱、铝冶行业的联合开卷卷取齿轮箱、三环减速器、星轮减速器、风电齿轮箱、水力发电变速装置、核电循环水泵驱动变速装置等高新技术产品，以及各类特殊非标齿轮箱。泰隆工业园区已经成为国内最大的钢帘线设备生产基地，双叶、三叶罗茨风机及高温风机批量出口东南亚及欧美。

我们的产品成功应用于中华世纪坛、三峡大坝、嫦娥一号发射、杭州湾跨海大桥、北京奥体馆、上海世博会等国家重点工程。重点客户有宝钢集团、首钢集团、上海振华港机、燕山石化、葛州坝集团、北京水工、中国铝业、伊拉克泵站、桂林橡塑、乐山成发、三一重工等。

公司现为全国减速机标准化技术委员会秘书处单位，荣获“全国首批守合同重信用企业”、“国家重点高新技术企业”、“全国机械工业质量效益型先进企业”、“全国机械工业质量管理奖”、“全国用户满意服务”、“全国机械工业质量管理小组活动优秀企业”等殊荣。在同行业中率先通过了国家AAAA标准化良好行为企业认证、一级安全质量标准化机械制造企业认证、GB/T19022-2003完善计量检测体系认证、ISO9001-2008质量体系认证、ISO14001-2004环境体系认证、OHSAS18001-1999职业健康安全认证。产品通过矿用产品安全标志认证、起重行业型式试验认可认证，泰隆牌商标被国家工商总局认定为中国驰名商标，泰隆牌减速机被评为中国名牌产品。

泰隆人将遵循自己一贯的质量承诺、服务承诺和信誉承诺，把顾客满意当作我们的最高追求！

一、摆线针轮减速机	1
Cycloidal pin wheel decelerator	
〈一〉、摆线针轮减速机的特点	1
Properties	
〈二〉、摆线针轮减速机的型号、规格	1
Type and spec	
〈三〉、摆线针轮减速机的传动比、输入功率及输出转矩表	5
The list of transmission ratio, input power and output torque	
〈四〉、摆线针轮减速机的选用说明	9
Instruction for model selection	
〈五〉、摆线针轮减速机的使用及润滑需知	11
Usage and lubrication	
〈六〉、摆线针轮减速机的外形及安装尺寸	15
The contour and installation dimension	
〈七〉、摆线针轮减速机各种系列标准相应机型对照表	29
The check list of type and series of cycloidal pin wheel reducer	
二、特殊摆线针轮减速机系列	30
The series of special cycloidal pin wheel reducer	
〈一〉、TSW 型水泥成球盘机专用减速机	31
TSW reducer only for cement ball-plater	
〈二〉、钢厂专用垂直摆线针轮减速机 QJ9907-57	32
Vertical cycloidal pin wheel decelerator for steel factory QJ9907-57	
〈三〉、加长型摆线针轮减速机	33
Lengthen type of cycloid pin wheel decelerator	
三、立式摆线针轮减速机配套机架	37
The accessory frame of vertical cycloid pin wheel decelerator	
四、搅拌装置部件	58
Parts of chum-dasher	

摆线针轮减速机

Cycloid Pin Wheel Decelerators

一、摆线针轮减速机的特点

Characteristic Of Cycloid Pin Wheel Decelerators

摆线针轮减速机是参照JB/T2982-94采用摆线针齿啮合的、少齿差行星传动原理设计而成的一种新型传动机械，已广泛地应用到石油化工、建筑、冶金矿山、起重运输、纺织印染、工程机械、食品工业、电子电视等各个领域，深受用户的信赖和一致好评。摆线针轮减速机有如下特点：

The cycloid pin wheel decelerator is a up-dated transmissing machine designed with the cycloid pin wheel clenching and less teeth engagement mechanism. The products have been widely used in Oil and chemical industry, building, mining and metallurgy, cranes, textile, dying, mechanics, foodstuff and electrical industry, and are well acceped by the customers.

The characteristics are as following:

1. 传动比大：单级传动比为 9-87，双级传动比 99-7569，多级串联时传动比可以更大；
 2. 传动效率高：单级传动效率均在 90% 以上；
 3. 结构紧凑：体积小，重量轻、高速轴和低速轴在同一轴线上，装拆方便；
 4. 运转平稳噪音低，能承受过载和冲击；
 5. 使用可靠，寿命长。
1. Large transmission ratio,for single transmission ratio range is 9-87, and for double 99-7569;
 2. High transmission efficiency. The single transmissing efficiency is over 90%;
 3. Structure well-knitted, small volume, light weight, and high speed axle and low speed axle remain in the same axle, which makes it convenient for installing and disassembling;
 4. Low noise when operating, overloading and heavy breaking sustainment;
 5. Long service life.

二、摆线针轮减速机的型号、规格 Type and spec of cycloid pin wheel decelerators

1. 型式 Type

<1>、B 系列摆线针轮减速机

B series cycloid pin wheel decelerators
BW 脚板式卧装双轴型摆线针轮减速机
Baseboard horizontal installed double axes type cycloid pin wheel decelerator
BL 法兰式立装双轴型摆线针轮减速机
Flange vertical installed double axes type cycloid pin wheel decelerator
BWY 脚板式卧装电动机直联型摆线针轮减速机
Baseboard horizontal installed motor direct-connection type cycloid pin wheel decelerator
BLY 法兰式立装电动机直联型摆线针轮减速机
Flange vertical installed motor direct-connection type cycloid pin wheel decelerator

<2>、X 系列摆线针轮减速机

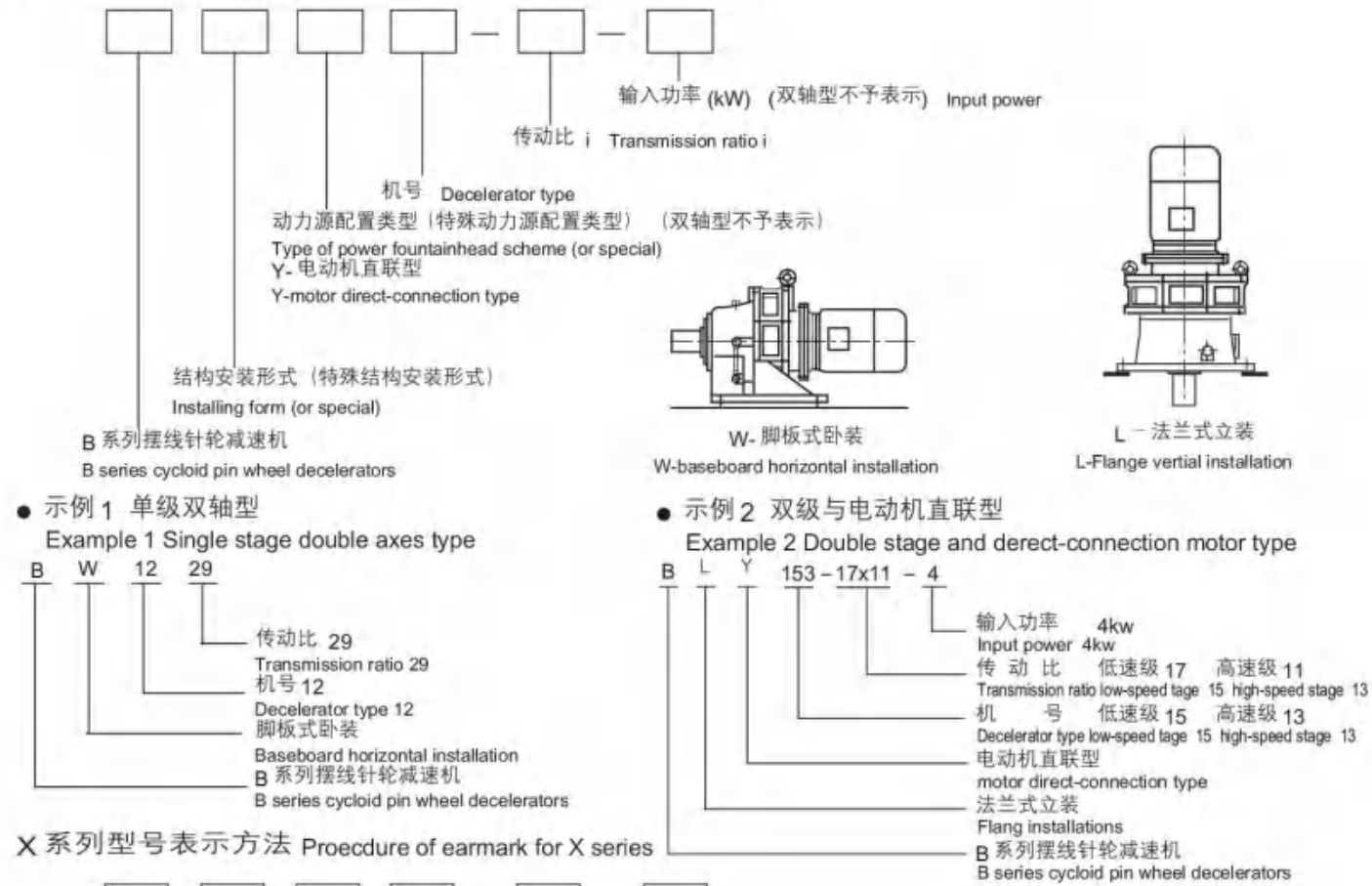
X series cycloid pin wheel decelerators
XW 脚板式卧装双轴型摆线针轮减速机
X series cycloid pin wheel decelerators
XL 法兰式立装双轴型摆线针轮减速机
Flange vertical installed double axes type cycloid pin wheel decelerator
XWD 脚板式卧装电动机直联型摆线针轮减速机
Baseboard horizontal installed motor direct-connection type cycloid pin wheel decelerator
XLD 法兰式立装电动机直联型摆线针轮减速机
Flange vertical installed motor direct-connection type cycloid pin wheel decelerator



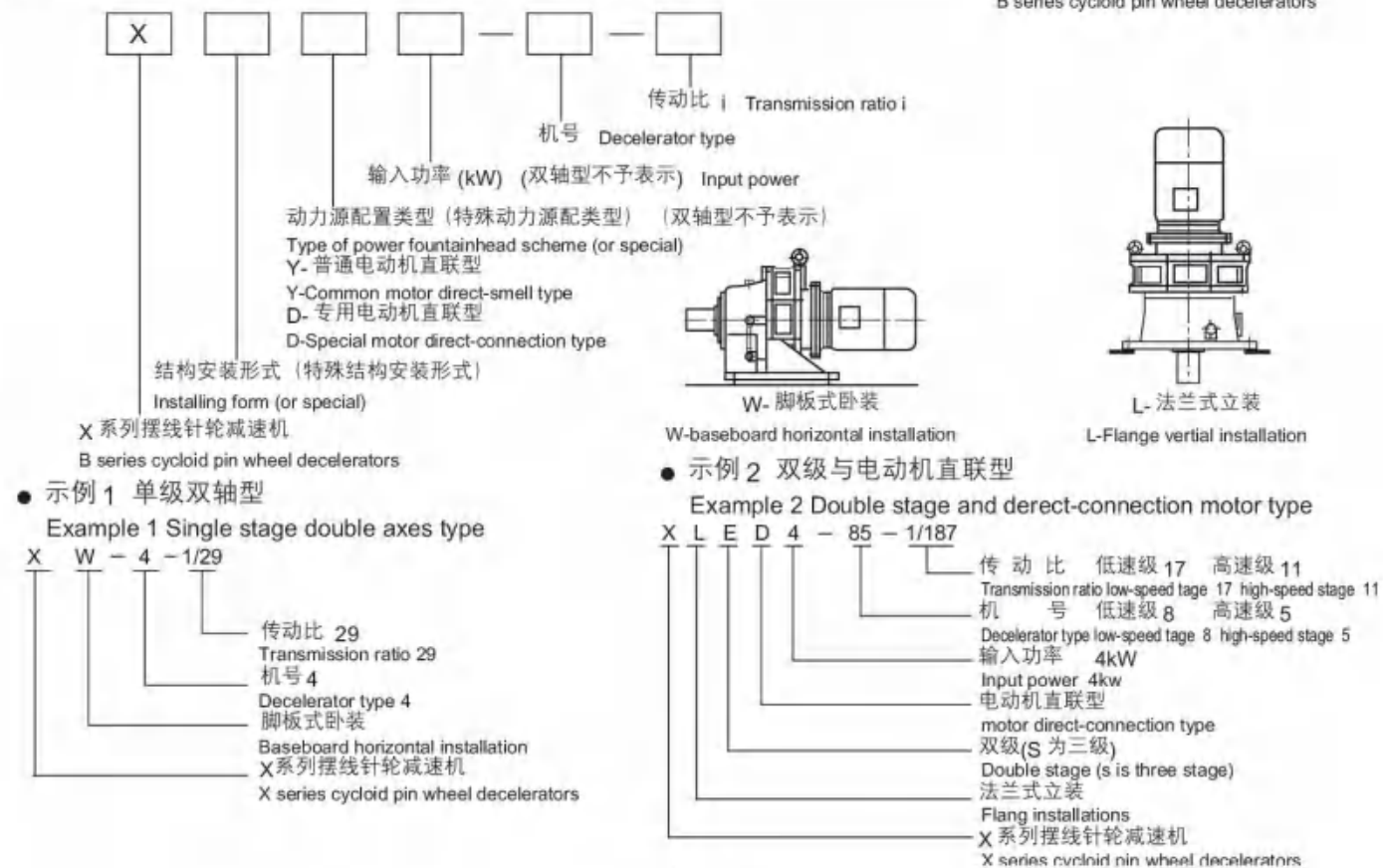
2. 减速机型号、规格 Type and spec of decelerator

单级 single stage	B 系列 B series	12	15	18	22	27		33	39	45	55	65				
	X 系列 X series	2	3	4	5	6	7	8	9	10	11	12				
双级 double stage	B 系列 B series	1512	1812	1815	2215	2218	2715	2718	3318	3322	3922	3927	4527	5527	5533	6533
	X 系列 X series	00	42		53		63	74	84	85	95		106	117		128
三级 three stage	B 系列 B series	181512		271812		331812		332215		392215		452715		552718		653322
	X 系列 X series	420		742		842		853		953		1063		1174		1285
输入功率(KW) Input power																
单级功率范围 Confine of single stage power				4P:0.18KW~18.5KW 6P:0.75KW~75KW				双级功率范围 Confine of double stage power				4P:0.18KW~15KW				
4P	0.18	0.25	0.37	0.55	0.75	1.1	1.5	2.2	3	4	5.5	7.5	11	15	18.5	
6P	0.75	1.1	1.5	2.2	3	4	5.5	7.5	11	15	18.5	22	30	37	45	75
注：表中输入功率为电动机功率 Note: Input power in list is power of motor 可供传动比 Supplied transmission ratio																
单级传动比 Transmission ratio of single stage																
9	11	17	21	23	25	29	35	43	47	59	71	87				
常用双级传动比 Usual transmission ratio of double stage																
99	121	187	289	319	385	473	493	595	649	731	841	1003	1225	1505	1849	2065
(11x9)	(11x11)	(17x11)	(17x17)	(29x11)	(35x11)	(43x11)	(29x17)	(35x17)	(59x11)	(43x17)	(29x29)	(59x17)	(35x35)	(43x35)	(43x43)	(59x35)
备用双级传动比 Transmission ratio of double stage																
153	207	253	391	531	595	667	805	957	989	1207	1247	1357				
(17x9)	(23x9)	(23x11)	(23x17)	(59x9)	(35x17)	(29x23)	(35x23)	(87x11)	(43x23)	(71x17)	(43x29)	(59x23)				
1479	1633	1711	2001	2059	2485	2523	3741	4189	5041	6177	7569					
(87x17)	(71x23)	(59x29)	(87x23)	(71x29)	(71x35)	(87x29)	(87x43)	(71x59)	(71x71)	(87x71)	(87x87)					
注：在双级减速机中各级传动比的组合，一高速端为传动比小的一端，低速端为传动比大的一端。 双级减速机传动比=低速级传动比 x 高速级传动比。 Note: Compounding of every stage transmission ratio of double stage decelerator is to select the smaller ratio for high-speed edge and larger ratio for low-speed edge. Transmission ratio of double stage decelerator = ratio of low-speed stage X high-speed stage.																

3. B 系列型号表示方法 Procedure of earmark for B series



X 系列型号表示方法 Procedure of earmark for X series



特殊动力源类型 Type of special power fountainhead

B	防爆电动机 Anti-explosive motor	T	调速电动机 Timing motor	M	油马达 Oil motor
Z	专用直流电动机 Special direct current motor	P	平面制动电动机 Plane brake motor	N	内锥式制动电动机 Inside wimble brake motor
S	低噪声电动机 Low noise motor	除此之外, 还有变频电动机, 船用电动机等, 请向技术部门咨询。 Else, frequency conversion motor, ship used motor should be contact our technical department please.			

特殊结构安装形式 Special installing form

C - 脚板式左侧装 C - Left baseboard installation	U - 脚板式右侧装 U - Right baseboard installation	S - 脚板式出轴向上侧装 S - Up shaft baseboard installation	X - 脚板式出轴向下侧装 X - Down shaft baseboard installation
Y - 脚板式仰装 Y - Backstroke baseboard installation	P - 法兰式水平装 P - Level flange installation	D - 法兰式倒立装 D - Down fallen flange installation	

注: 用户如无原则配置特殊动力源或采用特殊结构安装形式, 请与我厂技术部门联系, 并在合同中加以说明。

Note: Please show special installing form in the order then contract out technical department if it's needed.

4. 标准技术规格及使用条件 Standard spec and using condition

电动机 Motor	功率范围 Power scope	4P: 0.18~18.5kW 6P: 0.75~90kW	环境条件 Environmental condition	使用地点要求 Request of address	室内 Indoor
	电源 Electrical source	380V 50Hz		环境温度 Ambient temperature	-10℃~40℃
	绝缘 Insulation	B 级		环境湿度 Ambient humidity	85% 以下 Down 85%
	安装结构形式 Installing form	卧式 Horizontal: < 225 B5 > 250 B35 立式 Vertical: V ₁		周围气体 Ambient gas	通风, 远离腐蚀气体、易爆气体、蒸汽及尘埃。 Aeration, far away from caustic gas, explosive gas, smoke or mote
	工作方法 Working way	连续 Continuous S ₁		海拔 Altitude	1000 米以下 Below 1000 meter
	接法 Connect method	< 3kW Y 接法 > 4kW Δ 接法		与驱动设备联接方法 Method of connect with driving equipment	联轴器, 齿轮、链轮或皮带。 Coupling, gear, chain wheel or strap

(三)、单级摆线针轮减速机的传动比，输入功率和输出转矩表 (工况系数 k=1)

The Transmission Ratio, Input Power and Output Torque of Single stage cycloidal pin wheel decelerator. (service factors K=1)

机型号 type	12		15		18		22		27		33		39		45		55		65	
输入转速 (input speed) r/min	1500												1000							
传动比 (transmission ratio)	输入功率 kw (input power) / 输出扭矩 N.m (output torque)																			
9	40		123		222		387		617		1037		-		-		-		-	
11	50		2.2	151	272		521		756		1280		2258		4373		5344		-	
13	0.75	59	175		4	321	7.5	614	892		1510		22	2664	45		5160		6305	
15	67		141		372		712		1034		1751		3088		5624		7266		-	
17	76		160		420		805		11	1168	1978		3490		6356		8211		-	
21	68		1.5	199	289		683		1450		2455		3635		37	7890	55	10849	14794	
23	74		217		316		779		1580		2677		18.5	3962	8600		11825		16125	
25	81		236		343		810		1720		2890		4311		9357		12866		75	17544
29	94		199		398		893		1993		2737		4800		30	8133	14910		20322	
35	74		240		330		4	866	7.5	1658	3303		15	4907	22	7185	45	13536	24539	
43	0.37	91	190		1.5	380	811		1458		2955		4413		7408		13674		22108	
47	99		0.75	202	405		884		1589		3221		4802		18.5	8075	37	14904	55	24098
59	0.25	87	0.55	186	1.1	380	2.2	811	4	1459	2536		4109		9381		30	16546	37	22061
71	-		0.37	151	0.75	357	610		3	1340	3050		4577		15	9178	18.5	12233	22	14576
87	-		-		0.55	281	748		2.2	1196	5.5	2742	5.5	4133	11	8133	15	12199	18.5	14990

双级双轴型摆线针轮减速机的传动比，输入功率和输出扭矩表 (工况系数 k=1)

The Transmission Ratio, Input Power and Output Torque of Double stage cycloidal pin wheel decelerator. (service factors K=1)

型号 type	1512	1812	1815	2215	2218	2715	2718	3318	3322	3922	3927	4527	5527	5533	6533
输入转速 input speed	1500r/min														
传动比 transmission ratio	输入功率 (kw) input power														
99(11x9)	0.3	1.2	1.44	2.03	2.4	3.28	4.26	6	7.93	12.11	12.56				
121(11x11)	0.23	1.04	1.18	1.66	1.7	3.18	4	5.5	6.65	10.26	10.46				
187(17x11)	0.15	0.67	0.76	1.08	1.1	2.06	2.77	4	4.30	6.64	6.74	10.28	13.6	15.9	
289(17x17)	0.10	0.43	0.49	0.70	0.75	1.33	1.79	2.5	2.86	4.30	4.91	6.65	13.31	14.12	
319(29x11)	0.08	0.36	0.42	0.60	0.65	1.12	1.5	2.2	2.90	4.02	4.97	5.96	11.98	13.2	15
391(23x17)	0.07	0.32	0.37	0.51	0.52	0.98	1.32	1.6	1.70	3.17	3.18	4.92	9.84	11.5	13.41
473(43x11)	0.06	0.27	0.30	0.43	0.45	0.81	1.09	1.3	1.35	2.62	2.93	4.07	8.13	9.65	11.09
493(29x17)	0.05	0.24	0.27	0.38	0.4	0.74	0.92	1.03	1.21	2.41	2.61	3.72	7.26	8.50	9.62
595(35x17)	0.04	0.21	0.24	0.34	0.35	0.65	0.87	1	1.11	2.09	2.15	3.23	6.46	7.42	8.81
649(59x11)	0.03	0.16	0.21	0.30	0.32	0.58	0.8	0.95	1.02	1.96	2.01	2.98	6.02	6.98	8.01
731(43x17)			0.19	0.28	0.3	0.53	0.71	0.85	0.96	1.70	2.02	2.63	5.26	6.18	7.17
841(29x29)			0.17	0.24	0.26	0.46	0.62	0.78	0.83	1.48	1.58	2.29	4.57	5.4	6.24
1003(59x17)			0.14	0.21	0.23	0.40	0.52	0.65	0.66	1.28	1.43	1.99	3.97	4.68	5.41
1225(35x35)			0.12	0.16	0.18	0.31	0.42	0.6	0.66	1.01	1.11	1.57	3.14	3.62	4.28
1479(87x17)			0.1	0.14	0.16	0.28	0.36	0.52	0.60	0.9	1.01	1.42	2.84	3.29	3.88
1505(43x35)			0.09	0.13	0.15	0.26	0.3	0.45	0.53	0.82	0.92	1.28	2.56	2.96	3.48
1849(43x43)			0.08	0.11	0.13	0.21	0.25	0.4	0.43	0.67	0.76	1.04	2.08	2.4	2.84
2065(59x35)			0.07	0.10	0.12	0.19	0.2	0.38	0.40	0.62	0.71	0.96	1.93	2.22	2.63
2537(59x43)			0.06	0.08	0.1	0.16	0.18	0.3	0.33	0.51	0.56	0.78	1.57	1.81	2.14
3045(87x35)			0.07	0.09	0.14	0.16	0.26	0.29	0.47	0.5	0.69	1.4	1.6	1.84	
3481(59x59)			0.06	0.08	0.12	0.15	0.22	0.25	0.39	0.41	0.60	1.20	1.38	1.64	
4189(71x59)			0.05	0.07	0.10	0.12	0.18	0.21	0.32	0.36	0.50	1.0	1.2	1.36	
5133(87x59)					0.08	0.1	0.15	0.17	0.26	0.30	0.41	0.81	0.93	1.11	
7569(87x87)								0.1	0.12	0.18	0.20	0.28	0.55	0.64	0.75
输出扭矩 N.M (output torque)	245	540	540	1150	1150	2200	2200	4600	4600	7500	7500	11000	22000	22000	30000

双级摆线针轮减速机直联型的传动比、输入功率、输出轴许用扭矩、输出转速表
The transmission ratio, input power, allowed torque of output shaft, output speed list of double stage cycloidal pin wheel decelerator with motor direct-connection type.

31号 Type	1.5	2	3	4	5	6	7	8	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	110	120	130	140	150	160	170	180	190	200	220	240	260	280	300	320	340	360	380	400	420	440	460	480	500	520	540	560	580	600	620	640	660	680	700	720	740	760	780	800	820	840	860	880	900	920	940	960	980	1000	1020	1040	1060	1080	1100	1120	1140	1160	1180	1200	1220	1240	1260	1280	1300	1320	1340	1360	1380	1400	1420	1440	1460	1480	1500	1520	1540	1560	1580	1600	1620	1640	1660	1680	1700	1720	1740	1760	1780	1800	1820	1840	1860	1880	1900	1920	1940	1960	1980	2000	2020	2040	2060	2080	2100	2120	2140	2160	2180	2200	2220	2240	2260	2280	2300	2320	2340	2360	2380	2400	2420	2440	2460	2480	2500	2520	2540	2560	2580	2600	2620	2640	2660	2680	2700	2720	2740	2760	2780	2800	2820	2840	2860	2880	2900	2920	2940	2960	2980	3000	3020	3040	3060	3080	3100	3120	3140	3160	3180	3200	3220	3240	3260	3280	3300	3320	3340	3360	3380	3400	3420	3440	3460	3480	3500	3520	3540	3560	3580	3600	3620	3640	3660	3680	3700	3720	3740	3760	3780	3800	3820	3840	3860	3880	3900	3920	3940	3960	3980	4000	4020	4040	4060	4080	4100	4120	4140	4160	4180	4200	4220	4240	4260	4280	4300	4320	4340	4360	4380	4400	4420	4440	4460	4480	4500	4520	4540	4560	4580	4600	4620	4640	4660	4680	4700	4720	4740	4760	4780	4800	4820	4840	4860	4880	4900	4920	4940	4960	4980	5000	5020	5040	5060	5080	5100	5120	5140	5160	5180	5200	5220	5240	5260	5280	5300	5320	5340	5360	5380	5400	5420	5440	5460	5480	5500	5520	5540	5560	5580	5600	5620	5640	5660	5680	5700	5720	5740	5760	5780	5800	5820	5840	5860	5880	5900	5920	5940	5960	5980	6000	6020	6040	6060	6080	6100	6120	6140	6160	6180	6200	6220	6240	6260	6280	6300	6320	6340	6360	6380	6400	6420	6440	6460	6480	6500	6520	6540	6560	6580	6600	6620	6640	6660	6680	6700	6720	6740	6760	6780	6800	6820	6840	6860	6880	6900	6920	6940	6960	6980	7000	7020	7040	7060	7080	7100	7120	7140	7160	7180	7200	7220	7240	7260	7280	7300	7320	7340	7360	7380	7400	7420	7440	7460	7480	7500	7520	7540	7560	7580	7600	7620	7640	7660	7680	7700	7720	7740	7760	7780	7800	7820	7840	7860	7880	7900	7920	7940	7960	7980	8000	8020	8040	8060	8080	8100	8120	8140	8160	8180	8200	8220	8240	8260	8280	8300	8320	8340	8360	8380	8400	8420	8440	8460	8480	8500	8520	8540	8560	8580	8600	8620	8640	8660	8680	8700	8720	8740	8760	8780	8800	8820	8840	8860	8880	8900	8920	8940	8960	8980	9000	9020	9040	9060	9080	9100	9120	9140	9160	9180	9200	9220	9240	9260	9280	9300	9320	9340	9360	9380	9400	9420	9440	9460	9480	9500	9520	9540	9560	9580	9600	9620	9640	9660	9680	9700	9720	9740	9760	9780	9800	9820	9840	9860	9880	9900	9920	9940	9960	9980	10000	10020	10040	10060	10080	10100	10120	10140	10160	10180	10200	10220	10240	10260	10280	10300	10320	10340	10360	10380	10400	10420	10440	10460	10480	10500	10520	10540	10560	10580	10600	10620	10640	10660	10680	10700	10720	10740	10760	10780	10800	10820	10840	10860	10880	10900	10920	10940	10960	10980	11000	11020	11040	11060	11080	11100	11120	11140	11160	11180	11200	11220	11240	11260	11280	11300	11320	11340	11360	11380	11400	11420	11440	11460	11480	11500	11520	11540	11560	11580	11600	11620	11640	11660	11680	11700	11720	11740	11760	11780	11800	11820	11840	11860	11880	11900	11920	11940	11960	11980	12000	12020	12040	12060	12080	12100	12120	12140	12160	12180	12200	12220	12240	12260	12280	12300	12320	12340	12360	12380	12400	12420	12440	12460	12480	12500	12520	12540	12560	12580	12600	12620	12640	12660	12680	12700	12720	12740	12760	12780	12800	12820	12840	12860	12880	12900	12920	12940	12960	12980	13000	13020	13040	13060	13080	13100	13120	13140	13160	13180	13200	13220	13240	13260	13280	13300	13320	13340	13360	13380	13400	13420	13440	13460	13480	13500	13520	13540	13560	13580	13600	13620	13640	13660	13680	13700	13720	13740	13760	13780	13800	13820	13840	13860	13880	13900	13920	13940	13960	13980	14000	14020	14040	14060	14080	14100	14120	14140	14160	14180	14200	14220	14240	14260	14280	14300	14320	14340	14360	14380	14400	14420	14440	14460	14480	14500	14520	14540	14560	14580	14600	14620	14640	14660	14680	14700	14720	14740	14760	14780	14800	14820	14840	14860	14880	14900	14920	14940	14960	14980	15000	15020	15040	15060	15080	15100	15120	15140	15160	15180	15200	15220	15240	15260	15280	15300	15320	15340	15360	15380	15400	15420	15440	15460	15480	15500	15520	15540	15560	15580	15600	15620	15640	15660	15680	15700	15720	15740	15760	15780	15800	15820	15840	15860	15880	15900	15920	15940	15960	15980	16000	16020	16040	16060	16080	16100	16120	16140	16160	16180	16200	16220	16240	16260	16280	16300	16320	16340	16360	16380	16400	16420	16440	16460	16480	16500	16520	16540	16560	16580	16600	16620	16640	16660	16680	16700	16720	16740	16760	16780	16800	16820	16840	16860	16880	16900	16920	16940	16960	16980	17000	17020	17040	17060	17080	17100	17120	17140	17160	17180	17200	17220	17240	17260	17280	17300	17320	17340	17360	17380	17400	17420	17440	17460	17480	17500	17520	17540	17560	17580	17600	17620	17640	17660	17680	17700	17720	17740	17760	17780	17800	17820	17840	17860	17880	17900	17920	17940	17960	17980	18000	18020	18040	18060	18080	18100	18120	18140	18160	18180	18200	18220	18240	18260	18280	18300	18320	18340	18360	18380	18400	18420	18440	18460	18480	18500	18520	18540	18560	18580	18600	18620	18640	18660	18680	18700	18720	18740	18760	18780	18800	18820	18840	18860	18880	18900	18920	18940	18960	18980	19000	19020	19040	19060	19080	19100	19120	19140	19160	19180	19200	19220	19240	19260	19280	19300	19320	19340	19360	19380	19400	19420	19440	19460	19480	19500	19520	19540	19560	19580	19600	19620	19640	19660	19680	19700	19720	19740	19760	19780	19800	19820	19840	19860	19880	19900	19920	19940	19960	19980	20000	20020	20040	20060	20080	20100	20120	20140	20160	20180	20200	20220	20240	20260	20280	20300	20320	20340	20360	20380	20400	20420	20440	20460	20480	20500	20520	20540	20560	20580	20600	20620	20640	20660	20680	20700	20720	20740	20760	20780	20800	20820	20840	20860	20880	20900	20920	20940	20960	20980	21000	21020	21040	21060	21080	21100	21120	21140	21160	21180	21200	21220	21240	21260	21280	21300	21320	21340	21360	21380	21400	21420	21440	21460	21480	21500	21520	21540	21560	21580	21600	21620	21640	21660	21680	21700	21720	21740	21760	21780	21800	21820	21840	21860	21880	21900	21920	21940	21960	21980	22000	22020	22040	22060	22080	22100	22120	22140	22160	22180	22200	22220	22240	22260	22280	22300	22320	22340	22360	22380	22400	22420	22440	22460	22480	22500	22520	22540	22560	22580	22600	22620	22640	22660	22680	22700	22720	22740	22760	22780	22800	22820	22840	22860	22880	22900	22920	22940	22960	22980	23000	23020	23040	23060	23080	23100	23120	23140	23160	23180	23200	23220	23240	23260	23280	23300	23320	23340	23360	23380	23400	23420	23440	23460	23480	23500	23520	23540	23560	23580	23600	23620	23640	23660	23680	23700	23720	23740	23760	23780	23800	23820	23840	23860	23880	23900	23920	23940	23960	23980	24000	24020	24040	24060	24080	24100	24120	24140	24160	24180	24200	24220	24240	24260	24280	24300	24320	24340	24360	24380	24400	24420	24440	24460	24480	24500	24520	24540	24560	24580	24600	24620	24640	24660	24680	24700	24720	24740	24760	24780	24800	24820	24840	24860	24880	24900	24920	24940	24960	24980	25000	25020	25040	25060	25080	25100	25120	25140
----------	-----	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

(四)、摆线针轮减速机选用说明 The Instruction Sheet of Cycloid Pin Wheel Reducer

本系列摆线针轮减速机是在每日八小时单向连续运转, 载荷平稳的条件下设计的, 当减速机实际工作时间和载荷性质与上述设计条件不符时, 应以工作情况系数 K_A 进行修正。 K_A 按下表确定。

This series cycloid pin wheel reducer is designed in these conditions which daily service 8 hrs, one way continuous operation and uniform load. We should adjust it according to the working coefficient K_A when the actual hours is not agree with load character.

工作情况系数 K_A 表 Table for Working Coefficient K_A

电动机 Motors	工作条件 Working condition	I 稳定 Uniform load	II 中等冲击 Medium shock load	III 大的冲击 Heavy shock load
	断续3小时/日 Continuous working 3hrs/24hrs	0.8	1.0	1.35
	8-10小时/日 8-10hrs/24hrs	1.0	1.2	1.5
	24小时/日 24hrs/24hrs	1.2	1.35	1.6

注: (1) 最大瞬时载荷或启动载荷不超过额定载荷的 160%。

(2) 原动机为多缸发动机时, 数据表中的工作条件与载荷性质, 可选取 $K=1.0-1.7$ 。

(3) 原动机为单缸发动机时, 数据表中的工作条件与载荷性质可选取 $K=1.2-1.8$ 。

Note: (1) The max instantaneous load or the start load shouldn't exceed the rated load.

(2) The working condition and the load character of the data sheet could select $K=1.0-1.7$ when the prime mover is multicylinder engine.

(3) The working condition and the load character of the data sheet could select $K=1.2-1.8$ when the prime mover is one-cylinder motor.

减速机用途和载荷性质分类参考表 The Application and The Load Character Sorted Reference Table

用途 Application	载荷分类 Assort of load	用途 Application	载荷分类 Assort of load
搅拌机 Mixers	I 纯液体 Pure liquid material	薄膜 Membrane	
	II 液体和固体 Semiliquid material	塑料挤出机 Plastic extruders	I 棒材 Bar material
鼓风机 Blowers	I 液体(密度可变) Liquid 离心式 Centrifugal type	管材 Tubing	II 吹塑机 Soft plastical
	II 叶片式 Leaf type	卷扬机(绞车) Hoists	III 重型的 Heavy-duty
压气机 压缩机 Compressors	I 离心式 Centrifugal type	中型的 Light-duty	II 辊道 Rolling bearing
	II 叶轮式 Impeller type	破碎机(矿石) Crushing machine(ore)	III 锤式粉碎机 Hammer crusher
	III 往复式 Reciprocator type	混凝土搅拌机 Concrete mixer truck	
运输机 (载荷稳定) Conveyers Uniformly load	I 板式 Apron type	石蜡滤机 Paraffin filter press	II
	II 皮带式 Belt type	石油工业 Oil industry	
	III 门式 Bucket type	结晶品、冷冻器 Crystal Refrigerator	
	II 链式 Chain type(双缸)	*破胶机 Rubber breaker	III
	III 螺旋式 Screw type(单缸)	橡胶与塑料工业 Rubber and plastic industry	
运输机 (重载非均匀送料) Conveyers (heavy load convey material with variable density)	I 板式 Apron type	*混炼机 Muller	II
	II 皮带式 Belt type	*精炼机 Refiner	
	III 门式 Bucket type	*橡胶压延机 Rubber calander	
	II 链式 Chain type(双缸)	织布机 Looms	
	III 往复式 Reciprocator type	梳棉(毛麻)机 Mangle	II
	II 螺旋式 Screw type	轧布机 Spinner	
	III 振动式 Vibration type	纺纱机 Spinner	
		洗涤机 Washer	

注 Note: (1) I — 稳定载荷 Uniform load; II — 中等载荷 Medium shock load; III — 大的冲击载荷 Heavy shock load;

(2)* — 按每日 24 小时工作选取。Only on the basis of 24hrs daily service.

摆线针轮减速机的选用分如下几种情况

Selecting the cycloid pin wheel decelerators accorting to the following conditions.

1. 减速机输入轴转速等于标准减速机额定转速时按下式选择:

When the input rotate speed of reducer is equaled to the rated rotate speed, we should select as following:

$$P \times K_A / \eta \leq P_{ip} \quad \text{式中 Where } P \text{ —— 负载功率 Load power KW}$$

K_A —— 工况系数 Service factor

η —— 减速机效率, 单级一般取 $\eta=0.9 \sim 0.95$, 双级一般取 $\eta=0.85 \sim 0.9$

Reducer efficiency, single-stage $\eta=0.9 \sim 0.95$, double-stage $\eta=0.85 \sim 0.9$.

P_{ip} —— 所选机型号的输入轴输入功率 KW

The input shaft power KW of selecting.

2. 按减速机输出轴转矩选择机型号时, 一般稳定载荷及短期瞬时载荷不超过稳定载荷的 160%。应按下式选择。We should select the reducer according to the output shaft torque. When general stabile load and short term instantaneous load is less than 160%, We should select as following:

$$T \leq T_p \quad \text{式中 Where: } T \text{ —— 负载工作转矩 Loading working torque N} \cdot \text{m}$$

T_p —— 所选机型号减速机的输出轴许用转矩

The allowed torque of selecting reducer N · m

当减速机短期瞬时载荷超过稳定载荷的 160% 时, 应按尖峰载荷选择, 应保证 $T_{max}/1.6 \leq T_p$ 。 T_{max} —— 负载最大尖峰转矩 N · m When the short term instantaneous load is bigger than the stabile load 160%. Ensure meet $T_{max}/1.6 \leq T_p$, please select the peak load.

T_{max} — The peak load torque N · m

3. 减速机输入转速不等于承载能力表中的额定转速时, 应先按 $T_c \leq T_p$ 选择机型号

When input rotate speed of reducer is not equal to the carrying capacity mom. Rotate speed, please select the code according to $T_c \leq T_p$

$$T_c = \left(\frac{n}{n_1} \right)^4 T \quad \text{式中 Where: } T_c \text{ —— 计算工作转矩 Calculated the working torque N} \cdot \text{m}$$

n —— 输入实际转速 The input actual rotate speed r/min.

n_1 —— 减速机输入轴额定转速 1500 或 1000

The input rated rotate speed 1500 or 1000.

η —— 转臂轴承寿命指数, 球轴承 $\eta=3$, 滚子轴承 $\eta=10/3$

The crane life time index, ball bearing $\eta=3$, roller bearing $\eta=10/3$

T_p —— 减速机在额定转速时的输出轴许用转矩 N · m

The allowed torque of output shaft at the Reducer's rotated speed N · m

T —— 输出轴实际工作转矩 The actual torque of output shaft N · m

然后按下式验算 $T \leq T_{max}$ Then checking it accord to this formula $T \leq T_{max}$

若满足上式则所选减速机合适, 否则, 应据上式选较大型号

The reducer is suitable if it meets the formula or also you should select the major model.

4. 如果输入的转速是变化的(当用变速电动机或变速装置驱动时)应根据使用条件确定。若要求功率一定, 则应按最低转速选择机型号。若要求转矩一定, 则应按最高转速选择机型号(选型时注意工况系数和效率损失)。

We should select it according the usage conditions if the input rotate speed is variable. (when variable speed motor or change gear is used). You could select the model according to the lowest rotate speed if fixed power is required. You could select the model according to the highest rotate speed if fixed torque is required. (Pay attention to the service and the efficiency loss).

(五)、摆线针轮减速机的使用及润滑需知

The usage and lubrication of cycloid pin wheel decelerators

(I) 使用 Usage

1. 本减速机适用于 24 小时连续工作制，并允许正反向运转。
2. 单级减速机的输出轴转向与输入轴转向方向相反，双级减速机输出轴转向与输入轴转向相同。
3. 本减速机无自锁作用。如用于升降装置等危险场合时，应选用制动电机或在输入端加配制动装置。
4. 本减速机的输出轴不能承受轴向力，如需承受较大的径向力或轴向力，请予垂询。
5. 在可能出现过载现象的使用场合，应安装过载保护装置。
6. 脚板式卧装摆线针轮减速机要安装在没有振动、十分牢固的水平基础上，在必须进行倾斜安装的使用场合，减速机轴心线的倾斜度不得大于 15° 。
7. 法兰式立装摆线针轮减速机在安装时，输出轴垂直向下。
8. 如需要采用除脚板式卧装和法兰式立装以外的其他特殊安装形式，必须采取相应的润滑和密封措施来保证减速机润滑充足和防止漏油。请与我厂技术部门联系。
9. 采用油脂润滑的摆线针轮减速机安装角度自由。
10. 减速机安装时，可用垫块进行调整，垫块在高度方向不超过三块，也可用楔铁进行调整，但减速机校准后必须换入平垫块。
11. 在冲击、振动较大或起动频繁的使用场合，机座与基础除用 8.8 级高强度底脚螺栓进行联接之外，还需用定位销（自备）进行加固。
12. 标准型摆线针轮减速机的输入轴和输出轴的轴伸端形式为圆柱形，采用普通平键联接。轴径尺寸公差根据 GB/T1801-2009《公差与配合》的规定。普通平键尺寸按 GB/T1096-2003《普通平键型式尺寸》的规定。联接法兰止口按 GB/T1801-2009 的(h9)的配合。
13. 当采用联轴器把摆线针轮减速机与相配套的机械联接时，推荐用弹性联轴器。
14. 减速机与相配套机械用联轴器联接时，两者轴心线的同心度不得超过联轴器所允许的范围。
15. 当摆线针轮减速机与齿轮、链轮相联接时，必须保证两者轴心线的平行度。
16. 当使用链轮来进行传动时，不要把齿链放得过松，否则在起动时会产生冲击力，箱体材料建议改为球铁或铸钢以加强箱体强度。
17. 在把联轴器、齿轮、链轮等联接摆线针轮减速机的输出轴时，不得采用直接锤击的方法，应利用轴伸端螺孔旋入螺栓，通过压板压入或采用热套方式，并使其紧贴轴肩（紧固环端面）。
18. 安装后的减速机，正式使用前必须进行试运转。在空载运转正常的情况下，再逐渐加载运转。

1. This series reducers suits to continue using for 24 hours and allowed to run in positive and negative directions.
2. The change directions of single-stage output shaft and input shaft is opposition. The turn of double-stage reducer's output shaft and input shaft is the same.
3. The reducers haven't locked by oneselves, if applied in man-trap as exaltation, should select brake motor or configure brake seft on input.
4. This series reducer's output shaft couldn't accept the axial force. If load biggish radial or axial force, please contact us.
5. Over loading protect unit should be settet in the case of over loading phenomena.
6. Baseboard horizontal installed cycloid pin wheel decelerators should be in the level basic which is without librate and very firm. The incidence of axes should be less than 15 degree when it is used in lean.
7. The end of output shaft extension of flange vertical cycloid pin wheel decelerator should be

used in vertical down.

8. It must be take relevant measure to assure enough lubrication and preventing leak oil if other special installation form is needed except baseboard horizontal installation and flange vertical installation.
9. Installation degree of reducers lubricated with axunge is free.
10. It can be adjusted with cushion when reducers is installed. Not more than three cushion in height. It also can be adjusted with chock, but it must change level cushion from chock after reducers are adjusted.
11. We should use positioning dowel to reinforce except use foundation screw to connect machine base with foundation of there are high impact and high libration and frequent start-up.
12. Form of input shaft and output shaft extension of normal reducers is cylindrcial, it is connected with common flat key. The tolerance of shaft diameter meets the requirement of GB/T1801-2009, diameter of common key meets the requirement of GB/T1096-2003, the tolerance of flange rabbet meets the requirement of h9 for GB/T1801-2009.
13. Stretch coupling is commended when the coupling is used to connect with reducers and relevant machines.
14. The axial lines must be concentric when the coupling is used to connect with working mechanism or motor. The installation error of decelerator should not exceed the allowable error of the coupling used.
15. It must assure level degree of they when reducers joint with gear, chain wheel.
16. Don't relax chain when driving with chain wheel otherwise, impact force will show in working. We suggest that economy material is changed into spheroidal graphite iron or cast steel to strengthen intension.
17. Direct hammering is prohibited when matching coupling, gear, chain wheel with reducers. It should be screw on screw from helix hole at shaft extension end, press with press board or assemble by hotup, make sure it get close to shaft shoulder (flange of tighten ring)
18. After the installation of decelerator is finished the test run must be per formed before it is put into use formally. If free running is normal, the load can be added step by step.

(II) 润滑 Lubrication

1. 摆线针轮减速机润滑方法。 Lubricating method of reducers

单级摆线针轮减速机润滑方法及贮油量 Lubricating method and oil reserve of single stage reducers

序号 Type	K系列 K series										
结构安装形式 及贮油量 Installation form and oil reserve	12	15	18	22	27	33	39	45	55	65	
	2	3	4	5	6	7	8	9	10	11	12
脚板式卧装 baseboard horizontal installation											
贮油量 (L) oil reserve	0.4	0.5	0.7	1.4	1.7	2.2	4	7	14	30	56
法兰式立装 flange vertical installation											
油浴润滑 oil bath lubrication											
贮油量 (L) oil reserve	0.8	0.9	1.1	1.5	1.9	2.0	3.7	10	15	29	60
循环润滑 circulation lubrication											

油浴润滑或循环润滑双级摆线针轮减速机润滑方法及贮油量

Lubricating method and oil reserve of oil bath and circulation lubrication for double stage reducers

机号 Type	B系列 B series	1512	1812	1815	2215	2218	2715	2718	3318	3322	3822	3827	4527	5527	6533
结构安装形式 及贮油量 Installation form and oil reserve	X系列 X series	00	42		53		63	74	84	85		95	106	117	128
脚板式仰装 baseboard horizontal installation		油浴润滑 oil bath lubrication													
贮油量(L) oil reserve		1.2	1.4	1.6	2	2.2	3.3	5.5	6	9	10	16	35	70	
法兰式立装 flange vertical installation		油浴润滑 oil bath lubrication													
贮油量(L) oil reserve		1.2	1.4	1.5	1.8	1.9	2.2	4	4	10	10	15	20	60	

法兰式立装摆线针轮减速机的润滑油泵见下表，如有特殊要求请与本厂的技术部门联系。

Lubricating oil pump of flange vertical cycloid pin wheel decelerators see the list. Please contact us if you have special request.

摆线针轮减速机 Cycloid pin wheel decelerator			润滑油泵 Lubricating oil pump		
B系列 B series	X系列 X series	型号 Type	电动机 Motor	电动机 Motor	电动机 Motor
27-39	6-9	CB-08	40W	380V	50HZ
45	10		120W	380V	50HZ
55、65	11、12	CB-B10	550W	380V	50HZ

说明：防爆电动机直联型摆线针轮减速机采用带防爆电动机的润滑油泵。

Note: Lubricating oil pump with anti-explosive motor is used for anti-explosive motor direct-connection type cycloid pin wheel decelerators.

3、本减速机在使用前必须注入润滑油，出厂时的减速机为了便于装卸和运输，一般都不注入润滑油。

4、若采用油脂润滑的减速机在出厂前已注入润滑脂。

5、普通用途的摆线针轮减速机，在常温下推荐使用 N150 极压工业齿轮油。本机适用于环境温度 $-10^{\circ}\text{C} \sim 40^{\circ}\text{C}$ 。低于 0°C 时，选用 N68 润滑油，并预热；高于 30°C ，选用 N220 润滑油。

6、当摆线针轮减速机在工作条件恶劣、启动-停止频繁和高温或低温的场合中工作时，应与我厂技术部门联系。

7、当减速机采用油脂进行润滑时，推荐使用特种润滑 -2、二硫化钼 -2 或 ZL-2 锂基润滑脂等油脂。

8、加注润滑油时，油位高度应在油标或示油器的居中位置。

9、润滑脂的注入量应为减速机内容积的 1/3-1/2，油脂不宜加得过多，以避免产生搅拌热。

10、润滑油更换周期：

减速机应在初次运转 300 小时后须进行第一次更换润滑油，更换时，应去除残留污油。初次换油后，以后每天连续工作 10 小时以上的减速机，应每隔 3 个月更换一次润滑油，每天工作不超过 10 小时的减速机，应每隔 6 个月更换一次。

11、油脂更换周期：每隔 6 个月更换一次。

12、已经长期没有使用的减速机(一般在 12 个月以上)在重新使用前，必须更换润滑油或润滑脂。

13、加油时旋开减速机上部的通气帽即可加油，放油时旋开减速机下部的放油螺塞即可放出污油。

14、不允许注入不清洁或带腐蚀性的润滑油。

15、立式 BL27 和 XL7 以上均用循环润滑。采用循环润滑的法兰式立装减速机，在使用前先启动微电动机，视油泵是否供油，否则应将微电动机接线换相，因油泵是按指定方向运转的，油泵处于正常工作后应使油面高度保持在圆形油标中线位置。

3. The sufficient lubrication oil must be added before using. The machine isn't usual supplied with lubrication oil when leaving the factory for easy to load and unload or transport.

4. The machine that supplied with lubricating grease is already supplied with lubricating grease.

5. We commend N150 in normal temperature for normal using cycloid pin wheel decelerators. This machine suits ambient temperature $-10^{\circ}\text{C} \sim 40^{\circ}\text{C}$. When low than 0°C , we should select N68 lubrication and warm-up. When exceed 30°C , we should select N220 lubrication.

6. Please contact us when the machine works in the condition that have dicky condition, frequent start-up, high or low temperature.

7. The recommended lubricating grease includes special grease-2, supramoly-2 and ZL-2 lithium grease when machine is supplied with lubricating grease.

8. Oil height should in the middle of oil seal when lubricating oil is added.

9. The lubricating grease storage infused should be 1/3 ~ 1/2 of inside the reducer cubage. The lubricating grease shouldn't infuse much, so that avoiding bringing mixxing temperature.

10. Periods of lubrication for replaced:

After running for 300 hours for the first time. Oil must be replaced with fresh oil and oily soil must be rinses away. After wards, oil must be replaced every 3 months for continuous working for over 10 hours, oil must be replaced every 6 months for working for less than 10 hours.

11. Periods of lubricating grease replaced is one time every 6 months.

12. Decelerator stopped for long time cover 12 months must be replace lubrication or lubricating grease before work again.

13. You could add up the oil after unscrewing the breather plug of machine, you could leave the duty oil after unscrewing the screw under the machine.

14. It shouldn't put duty or caustic lubrication oil.

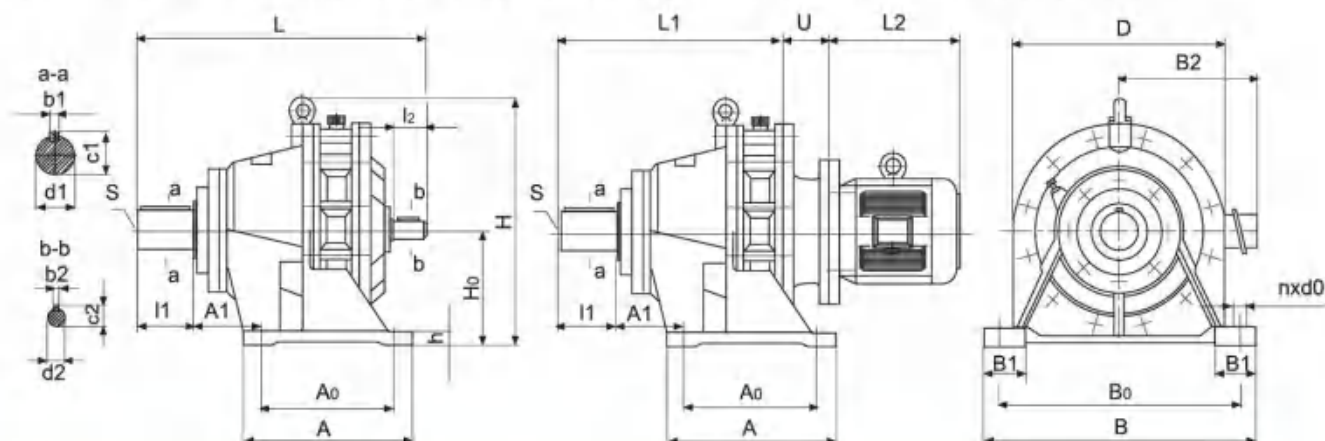
15. It has oil-pump to circulation lubrication above vertical BL27 and XL7. We should start the micro-motor of oil pump first and see if it is feeding oil before driving the flange vertical reducer or we should change the phase of micromotor because the oil pump is running in the specific direction. The oil level should be kept in the midline of round oil-mark when the oil pump is in normal operation conditions.

七、X 系列摆线针轮减速机的外形及安装尺寸

Contour and Installing Size Of X Cycloidal Pin Wheel Decelerators Contracted

XW(D)型单级摆线针轮减速机的外形及安装尺寸

Contour and installing size of XW(D) single-stage cycloidal pin wheel decelerator



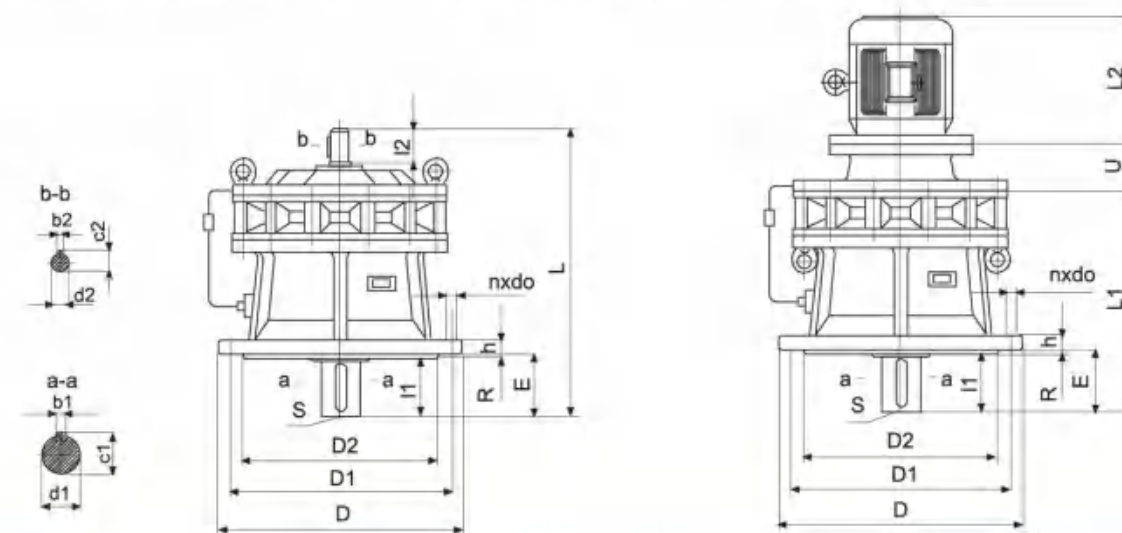
尺寸 中心 Size center height	安装尺寸 installation size							轴伸联接尺寸 size of coupling shaft end								外形尺寸 contour size							出轴 中心孔 center hole diameter	双轴 型 重量 (kg) double shaft weigh	
	H ₀	A ₁	A ₀	B ₁	B ₀	h	地脚孔 (foundation hole diameter	输出轴 output shaft				输入轴 input shaft				B	D	A	H	双轴 型 double shaft type	直联型 direct coupling type				
								n-d ₀	d ₁ (h6)	b ₁	c ₁	l ₁	d ₂ (h6)	b ₂	c ₂						l ₂	L			L ₁
型号 Type																									
2	100	67	90	45	180	15	4-12	25	8	28	34	15	5	17	25	210	168	120	200	216	163			M8	13
3	140	96	100	55	250	20	4-16	35	10	38	55	18	6	20.5	35	290	200	150	270	275	204	按电 机长 见附 表 P27 P28 页 according to electric machine		M8	26
4	150	95	145	60	290	22	4-19	45	14	48.5	74	22	6	24.5	40	330	240	195	318	348	268			M10	38
5	160	115	150	75	370	25	4-19	55	16	59	91	30	8	33	45	420	300	260	360	419	327			M10	93
6	200	36	275	75	380	30	4-22	65	18	69	89	35	10	38	54	430	360	335	435	471	368			M12	138
7	220	36	320	85	420	30	4-22	80	22	85	109	40	12	43	65	470	360	380	502	507	387			M12	160
8	250	35	380	85	480	35	4-28	90	25	95	120	45	14	48.5	70	530	435	440	542	607	453			M16	240
9	290	45	480	120	560	40	4-28	100	28	106	141	50	14	53.5	80	620	510	560	619	710	532			M20	370
10	325	80	500	120	630	45	4-28	110	28	116	150	55	16	60	100	690	580	600	706	788	579		M24	622	
11	420	122	330x2	160	800	50	6-38	130	32	137	202	70	20	74.5	120	880	710	810	880	1052	814		M30	1229	
12	540	155	420x2	200	1050	60	6-45	180	45	190	330	90	25	95	150	1160	990	1040	1137	1462	1174		M42	2420	

注：本厂生产的X系列尺寸除地脚孔尺寸有小差距外，其余与天津减速机总厂样本一致。

Note: The dimensions of X series are consistent with TianJin speed reducer head quarter, except some difference about foundation hole.

XL(D)型单级摆线针轮减速机的外形及安装尺寸

Contour and installing size of XL(D) single-stage cycloidal pin wheel decelerator



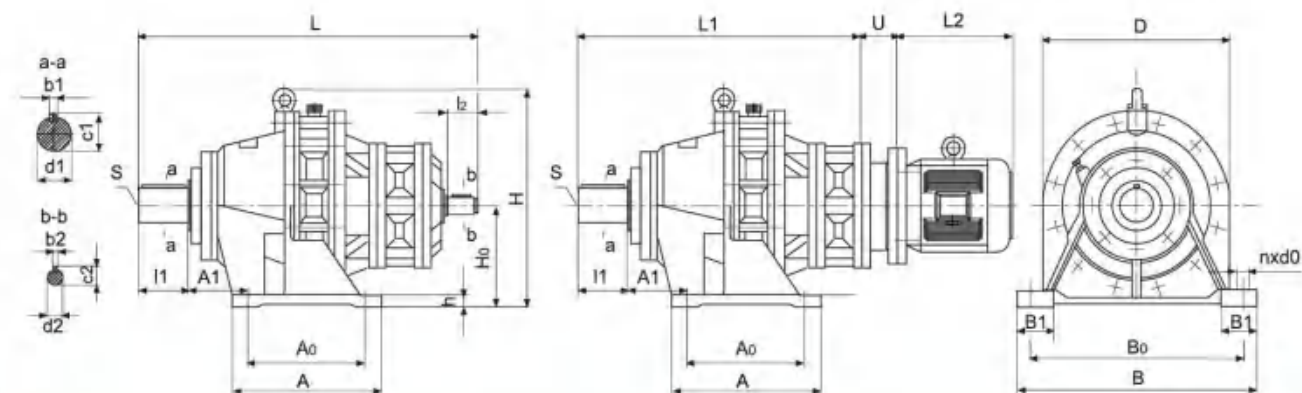
尺寸 Size	安装尺寸 installation size						轴伸联接尺寸 size of coupling shaft end								外形尺寸 contour size				出轴 中心孔 center hole diameter	双轴 型 重量 (kg) double shaft weight		
	D ₁	D ₂	E	h	R	安装孔 foundation hole diameter	输出轴 output shaft				输入轴 input shaft				D	双轴型 double shaft type	直联型 direct coupling type					
							n-d ₀	d ₁ (h6)	b ₁	c ₁	l ₁	d ₂ (h6)	b ₂	c ₂			l ₂	L	L ₁		L ₂	u
型号 Type																						
2	160	130	42	12	3	6-12	25	8	28	34	15	5	17	25	180	219	168	按电动机长 according to electric machine P27 / P28 页 see att.	见附表	M8	13	
3	200	170	50	15	4	6-12	35	10	38	45	18	6	20.5	35	230	258	187		M8	26		
4	230	200	79	20	4	6-15	45	14	48.5	63	22	6	24.5	40	260	346	266		M10	38		
5	310	270	93	22	4	6-15	55	16	59	79	30	8	33	45	340	412	320		M10	93		
6	360	316	92	26	5	8-19	65	18	69	80	35	10	38	54	400	464	361		M12	138		
7	390	345	114	26	5	8-19	80	22	85	98	40	12	43	65	430	507	382		M12	160		
8	450	400	112	30	6	12-24	90	25	95	110	45	14	48.5	70	490	589	435		M16	240		
9	520	455	170	35	8	12-24	100	28	106	129	50	14	53.5	80	580	728	550		M20	370		
10	590	520	174	40	10	12-28	110	28	116	140	55	16	60	100	650	797	588		M24	622		
11	800	680	210	45	10	12-37	130	32	137	184	70	20	74.5	120	880	1053	815		M30	1229		
12	1020	900	355	60	10	8-39	180	45	190	320	90	25	95	150	1160	1462	1174		M42	2420		

注：本厂生产的X系列尺寸除地脚孔尺寸有小差距外，其余与天津减速机总厂样本一致。

Note: The dimensions of X series are consistent with TianJin speed reducer head quarter, except some difference about foundation hole.

XWE(D)型双级摆线针轮减速机的外形及安装尺寸

Contour and installing size of XWE(D) double-stage cycloidal pin wheel decelerator



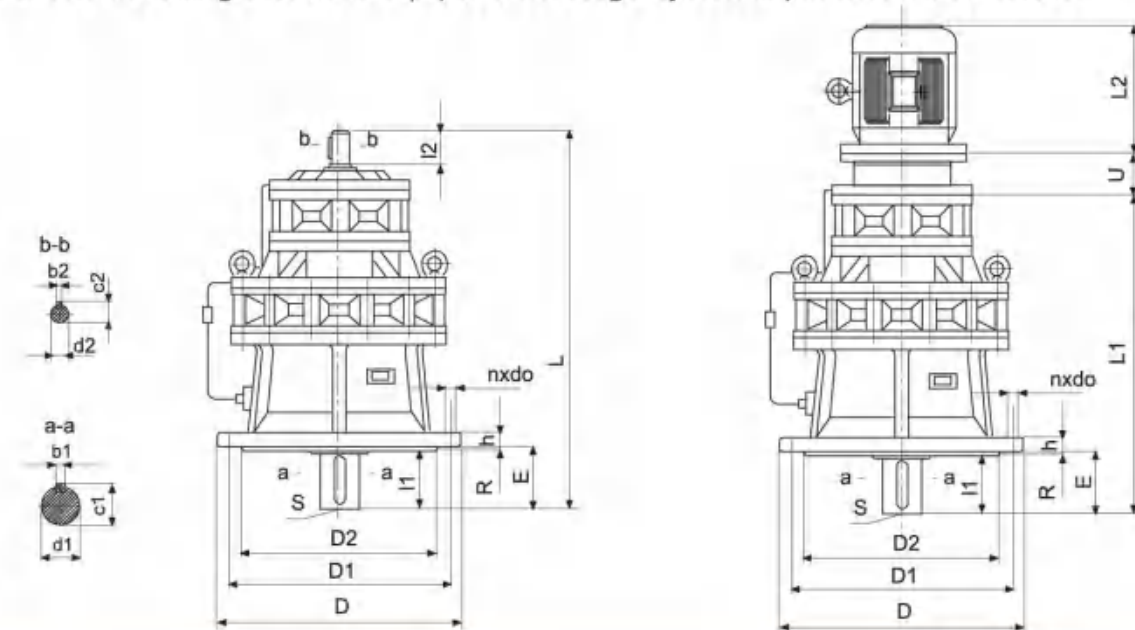
尺寸 Size	中心 高 center height	安装尺寸 installation size						轴伸联接尺寸 size of coupling shaft end								外形尺寸 contour size						出轴 中心孔 center hole diameter	双轴 型 重量 (kg) double shaft weigh																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
		H ₀	A ₁	A ₀	B ₁	B ₀	h	地脚孔 foundation hole diameter				输出轴 output shaft				输入轴 input shaft				B	D			A	H	双轴 型 double shafts type L	直联型 direct coupling type																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
								n-d ₀	d ₁ (h6)	b ₁	c ₁	l ₁	d ₂ (h6)	b ₂	c ₂	l ₂	L ₁	L ₂	U								S																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
型号 Type																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									</

注：本厂生产的X系列尺寸除地脚孔尺寸有小差距外，其余与天津减速机总厂样本一致。

Note: The dimensions of X series are consistent with TianJin speed reducer head quarter, except some difference about foundation hole.

XLE(D)型双级摆线针轮减速机的外形及安装尺寸

Contour and installing size of XLE(D) double-stage cycloidal pin wheel decelerator

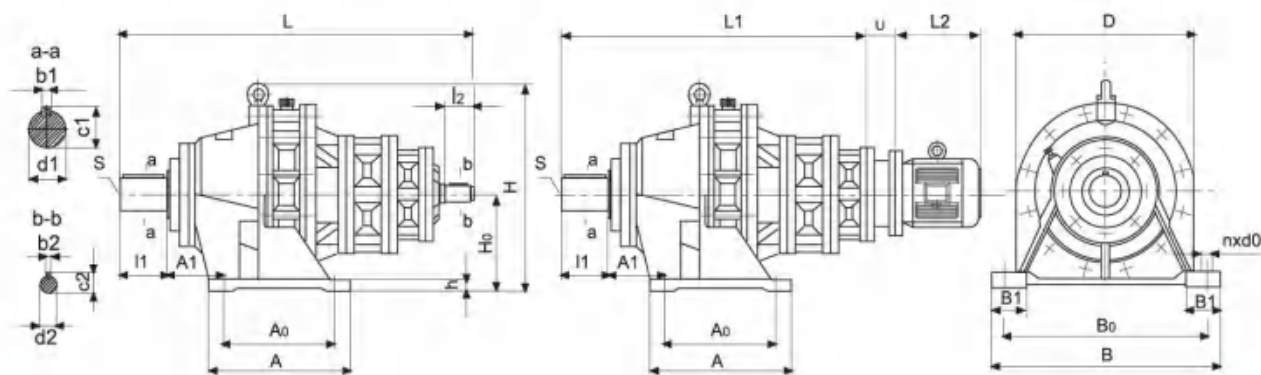


尺寸 Size	安装尺寸 installation size						轴伸联接尺寸 size of coupling shaft end								外形尺寸 contour size					出轴 中心孔 center hole diameter	双轴 型 重量 (kg) double shaft weigh	
	D ₁	D ₂	E	h	R	安装孔 foundation hole diameter	输出轴 output shaft				输入轴 input shaft				D	双轴 型 double shaft type	直联型 direct coupling type					
							n-d ₀	d ₁ (h6)	b ₁	c ₁	l ₁	d ₂ (h6)	b ₂	c ₂			l ₂	L	L ₁	L ₂		u
型号 Type																						
00	102	80	29	8	3	6-10	14	5	16	20	10	4	11.5	15	120	166	127	按电动机长 见附表 P27 P28 页	-	13		
20	160	130	42	12	3	4-12	25	8	28	34	10	4	11.5	15	180	242	203		M8	21		
42	230	200	79	20	4	6-15	45	14	48.5	63	15	5	17	25	260	406	353		M10	69		
53	310	270	93	22	4	6-15	55	16	59	79	18	6	20.5	35	340	482	411		M10	105		
63	360	316	92	26	5	8-19	65	18	69	80	18	6	20.5	35	400	523	452		M12	149		
74	390	345	114	26	5	8-19	80	22	85	98	22	6	24.5	40	430	576	496	according to length of electric machine see att.	M12	193		
84	450	400	112	30	6	12-24	90	25	95	110	22	6	24.5	40	490	633	553		M16	270		
85	450	400	112	30	6	12-24	90	25	95	110	30	8	33	45	490	664	572		M16	280		
95	520	455	170	35	8	12-24	100	28	106	129	30	8	33	45	580	777	685		M20	461		
106	590	520	174	40	10	12-28	110	28	116	140	35	10	38	54	650	846	743		M24	650		
117	800	680	210	45	10	12-37	130	32	137	184	40	12	43	65	880	1081	966		M30	1260		
128	1020	900	355	60	10	8-39	180	45	190	320	45	14	48.5	70	1160	1520	1370		M42	2742		

注：本厂生产的X系列尺寸除地脚孔尺寸有小差距外，其余与天津减速机总厂样本一致。

Note: The dimensions of X series are consistent with TianJin speed reducer head quarter, except some difference about foundation hole.

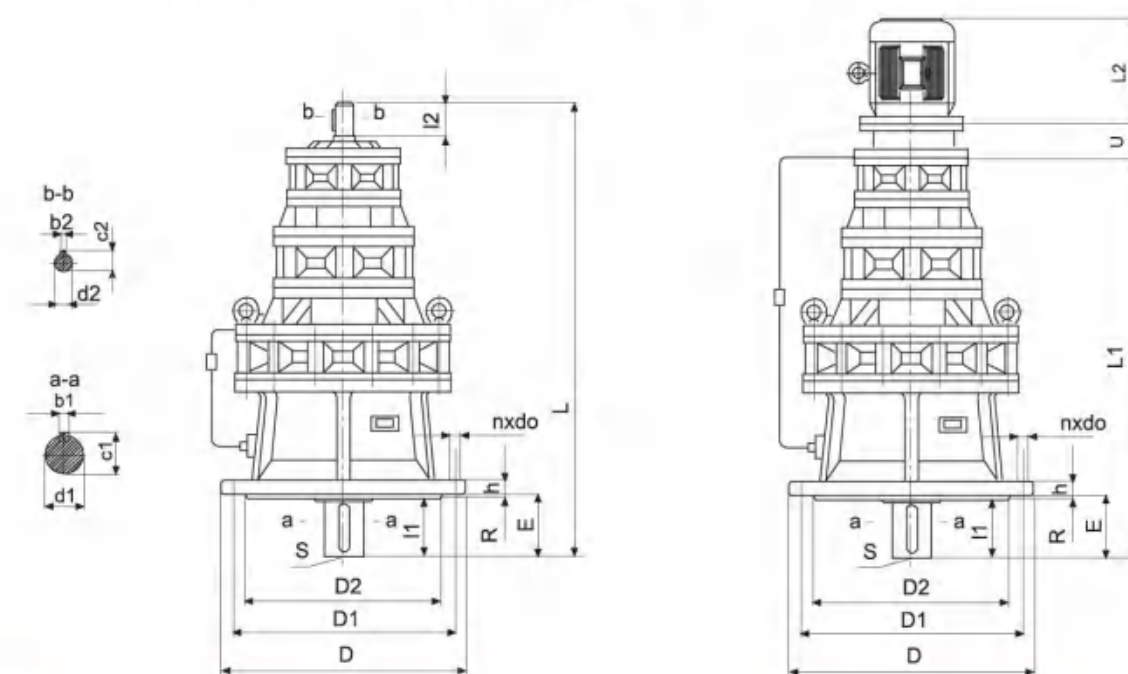
Contour and installing size of XWS(D) three-stage decelerator



尺寸 Size	中心高 center height	安装尺寸 installation size						轴伸联接尺寸 size of coupling shaft end								外形尺寸 contour size						出轴 中心孔 center hole diameter	双轴 型 重量 (kg) double shaft weight			
		H ₀	A ₁	A ₀	B ₁	B ₀	h	地脚孔 foundation hole diameter	输出轴 output shaft				输入轴 input shaft				B	D	A	双轴 型 double shafts type	直联型 direct coupling type					
									n-d ₀	d ₁ (h6)	b ₁	c ₁	l ₁	d ₂ (h6)	b ₂	c ₂					l ₂			L ₁	L ₂	U
型号 Type																										
420	150	95	145	60	290	22	4-19	45	14	48.5	74	10	4	11.5	15	330	240	195	453	407						M10
742	220	36	320	85	420	30	4-22	80	22	85	109	15	5	17	25	470	360	380	636	583						M12
842	250	35	380	85	480	35	4-28	90	25	95	120	15	5	17	25	530	435	440	693	640						M16
853	250	35	380	85	480	35	4-28	90	25	95	120	18	6	20.5	35	530	435	440	734	663						M16
953	290	45	480	120	560	40	4-28	100	28	106	141	18	6	20.5	35	620	510	560	847	776						M20
1063	325	80	500	120	630	45	4-28	110	28	116	150	18	6	20.5	35	690	580	600	902	831						M24
1174	420	122	330X2	160	800	50	6-38	130	32	137	202	22	6	24.5	40	880	700	810	1161	1081						M30
1285	540	155	420X2	200	1050	60	6-45	180	45	190	330	30	8	33	45	1160	990	1040	1634	1543						M42

注: 本厂生产的 X 系列尺寸除地脚孔尺寸有小差距外, 其余与天津减速机总厂样本一致。
Note: The dimensions of X series are consistent with TianJin speed reducer head quarter, except some difference about foundation hole.

Contour and installing size of XLS(D) three-stage decelerator



尺寸 Size	安装尺寸 installation size						轴伸联接尺寸 size of coupling shaft end								外形尺寸 contour size					出轴 中心孔 center hole diameter	双轴 型 重量 (kg) doub shaft weig
	D ₁	D ₂	E	h	R	安装孔 foundation hole diameter	输出轴 output shaft				输入轴 input shaft				D	双轴 型 double shaft type	直联型 direct coupling type				
							n-d ₀	d ₁ (h ₀)	b ₁	c ₁	l ₁	d ₂ (h ₀)	b ₂	c ₂			l ₂	L	L ₁		
型号 Type																					
420	230	200	79	20	4	6-15	45	14	48.5	63	10	4	11.5	15	260	453	407	按电动机长 见附表 P27-P28 页 according to length of electric machine see att.		M8	
742	390	345	114	26	5	8-19	80	22	85	98	15	5	17	25	430	636	583			M12	
842	450	400	112	30	6	12-24	90	25	95	110	15	5	17	25	490	693	640			M16	
853	450	400	112	30	6	12-24	90	25	95	110	18	6	20.5	35	490	734	663			M16	
953	520	455	170	35	8	12-24	100	28	106	129	18	6	20.5	35	580	847	776			M20	
1063	590	520	174	40	10	12-28	110	28	116	140	18	6	20.5	35	650	902	831			M24	
1174	800	680	210	50	10	12-37	130	32	137	184	22	6	24.5	40	880	1161	1081			M30	
1285	1020	900	355	60	10	8-39	180	45	190	320	30	8	33	45	1160	1634	1543		M42		

注: 本厂生产的 X 系列尺寸除地脚孔尺寸有小差距外, 其余与天津减速机总厂样本一致。
Note: The dimensions of X series are consistent with TianJin speed reducer head quarter, except some difference about foundation hole.

Dimension of special motor for BWY、BLY、XWD、XLD cycloid pin wheel decelerator(att.table)

注: 上表仅供参考, $L2=U+J$
Note:The above is just for reference. $L2=U+J$

中国供应链联盟 www.supplychainalliance.cn sales@tailonggearbox.com

Dimension of common motor for BWY, BLY, XWD, XLD cycloid pin wheel decelerator (att. table 2)

注: 上表仅供参考, $L2=U+J$
Note:The above is just for reference. $L2=U+J$

八、摆线针轮减速机各种系列标准相应机型对照表

The check list of type and series of cycloidal pin wheel reducer

B系列 (泰隆标) B series (Tailong normal)	12	15	18	22	27	--	33	39	45	55	65
X系列 (天津标) X series (Tianjin normal)	2	3	4	5	6	7	8	9	10	11	12
B系列 (上海标) B series (Shanghai normal)	B10	B11A B11	B12B B12	B13B B13	B14	B14A	B15	B16B B16	B17	B18	B19
B系列 (化工部标) B series (Chemical normal)	B0	B1	B2	B3	B4	--	B5	B6	B7	B8	B9
Z系列 (机械部标) JB/T2982-94 Z series (Machinery normal)	2A	3A	4A	5A	6A	7A	8A	9A	10A	11A	12A

B系列 (泰隆标) B series (Tailong normal)	1512	1812	1815	2215	2218	2715	2718	3318	3322	3922	3927	4527	5527	5533	6533
X系列 (天津标) X series (Tianjin normal)	00	42	-	53	-	63	74	84	85	95	-	106	117	-	128
B系列 (上海标) B series (Shanghai normal)	-	B120A	-	B131A	-	B141A	B142A	B152	B153	B163	-	B174	B184A	-	B195
B系列 (化工部标) B series (Chemical normal)	-	20	-	31	-	41	42	52	53	63	-	74	84	-	95
Z系列 (机械部标) JB/T2982-94 Z series (Machinery normal)	-	42A	-	53A	-	63A	74A	84A	85A	95A	-	106A	117A	-	128A

B系列 (机械部标) B series (Machinery normal)	181512	271812	331812	332215	392215
X系列 (天津标) X series (Tianjin normal)	420	742	842	853	953

B系列 (机械部标) B series (Machinery normal)	452715	552718	653322
X系列 (天津标) X series (Tianjin normal)	1063	1174	1285

注: 上表四大系列摆线针轮减速机本公司均可生产, 其传动原理和结构特点都是一样, 只是输出轴尺寸和安装尺寸略有差异。

Note: The above four series of cycloidal pin wheel decelerators can all be produced in our company with the same driving mechanism and structure. The difference lies in the output shaft size and installing size.

特殊摆线针轮减速机系列

Special series of cycloidal pin wheel decelerator

我公司根据各行业要求, 设计了多种特殊用途的减速机, 其内部参数等同于同规格的摆线针轮减速机, 性能、指标达到 JB/T53324-1997 的要求, 欢迎各行业厂家来公司合作, 本公司为您提供各种非标产品的设计、制造。

Besides we can design special decelerator under standard of JB/T53324-1997 with the same specs with other normal reducers. Any industrial works are welcomed.

(一)、TSW 型减速机 TSW decelerator

TSW 型摆线针轮减速机是为水泥成球盘机械配套设计制造的, 性能、指标符合该行业使用要求, 其输入部分为 C 型三角带轮。性能参数如下表:

The TSW cycloidal pin wheel decelerator is designed for cement ball-plater. The tech dates conform to national standard. The input part applies C triangle belt wheel. The parameters are as follows.

机 型 Type	许用转矩 Nm Allowed torque	减速机中心高 Center height	输出轴轴径 D (h6) Output shaft diameter	传动比 Transmission ratio
TSW27	1600	200	70	
TSW33	3000	240	90	11, 17, 23, 29
TSW39	5000	280	100	35, 43, 59, 71, 87
TSW45	10000	325	110	

(四)立式摆线针轮减速机配套机架

The Accessory Frame of Vertical Cycloid Pin Wheel Reducer

机架系列及选用原则 The Series Frames and Selection Principle.

1. 机架的选用, 原则上是根据减速机输出轴径的大小来确定机架型号, 只要接口形式及安装尺寸相符, 减速机的输出轴大小在一定范围内可以对机架型号上下浮动。若选用带接板机架, 减速机的安装尺寸与机架不符, 在一定范围内我厂也可以对接板进行调整与减速机联接, 满足用户要求。

2. 无支点机架。机架本身无轴的支承点, 搅拌轴是以减速机输出轴的两个支承轴为受力支点, 可用于传递小功率、不受或只受较小轴向负荷、搅拌不太强烈的搅拌装置。搅拌轴与减速机联接必须用刚性联轴器, 特别是以 JQ 型夹壳联轴器为最佳。

3. 单支点机架。具备下列条件之一者, 选用单支点机架为最佳。

(1) 搅拌容器设置底轴承, 作为一个受力支点;

(2) 轴封本体设有轴承 (包括刚性衬套), 作为一个受力支点 (受力程度按轴封要求规定);

(3) 搅拌容器内, 轴中部设有导向轴承, 作为一个受力支点 (即中间轴承)。

当具备上述条件的搅拌轴, 在选用单支点机架时, 搅拌轴与减速机之间的联轴器须选用 HL 型弹性柱销联轴器。

在实际应用中常用刚性联轴器代替弹性柱销联轴器联接搅拌轴与减速机出轴, 取消底轴承或中间轴承等支点。这样使用, 简化了单支点支架的应用条件, 但只适用于搅拌不强烈、功率较小、对轴承负荷较小的场合。这时联轴器应选用 GT 型刚性凸缘联轴器, 以利轴向尺寸方面的微量调整; 原则上不能用 JQ 型夹壳联轴器, 若采用夹壳联轴器, 则必须对支点的轴承结构进行变动, 采用带紧定套的锥孔调心滚子轴承, 或者取掉夹壳联轴器中的悬吊环, 使搅拌轴的轴向位置有适当调整的余地。

4. 双支点机架。不宜于选用无支点、单支点机架时, 应选用双支点机架。但选用的双支点机架下支点轴承结构带紧定套的锥孔调心滚子轴承便于安装维修, 且搅拌轴与减速机之间的联接必须选用 HL 型弹性柱销联轴器。

1. The principle of selection frame. In principle we could choose the frame type of output shaft diameter according to the interface mode and the installation dimensions. The output shaft could float according to the frame type. In order to meet the customers' requirement we could adjust the joining of the panel and the reducer at some range if the installation size is not matched with the frame when select the frame with Plug-board.

2. The frame without support. There is no supporting points of the reducer's own frame. The mixer axle which is supported by the two supporting bearings of the reducer's output shaft could be used in transmitting the small power, not accepted or minor accepted the with axial load.

3. Single-support frame. You'd better select the single-support frame when the condition is as following:

(1). The agitator tank is set up a bearing as a supporting point.

(2). The reality gland seal (including the rigidity shell) is set up a bearing as a force supporting. (the forcing degree is sized according to the gland seal requirement).

(3). There is setting a lower shoe bearing at the center axial as a forcing support (namely center bearing).

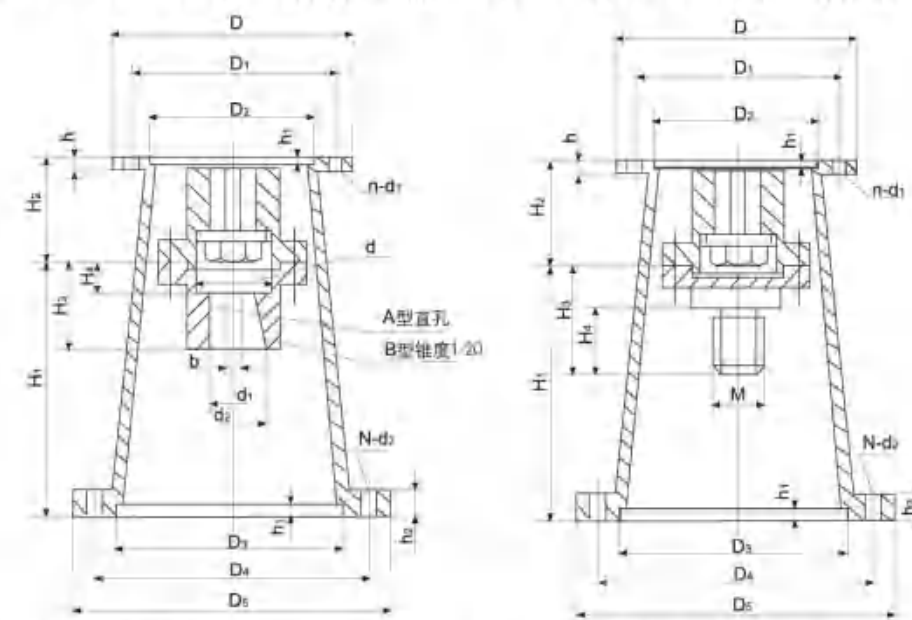
The mixer shaft and the reducers' coupling should select the HL type elastic pin coupling when we use the single point frame which meet the above conditions' mixer shaft.

In practical application, the rigid coupling is usually used to connect mixing shaft to output shaft instead of elastic pin coupling, cancel support such as down bearing or middle's. So that, it simplify the application undition of single support frame, but limited to moderate mix, small power and small bearing load and so. Here it should adopt GT type of rigid coupling, which benifit for the micw-adjustmet of axial direction size. In principle, don't adopt JQ type of split coupling, if select this type, it has to change bearing structure of support, adopt tapered are self-aligning roller bearing added adapter sleeve or take off suspending ring of split coupling, in order to enable adjustment leeway fagitator axle in axial direction.

4. Double-support frame, when the frame without support and single-support frame is not suitable, should select double-support frame, But the down bearing of the double-support frame should be tapered core self-aligning roller bearing added adapter sleeve which vail for assembly and main tenance, and also select HL type of elastic pin coupling to connect mixing shaft and decelerator.

(一)JA 型通用机架 General stand type frame JA

JA 大法兰机架<厂标> JA type frame JA II <69标>机架 JA II type 69 standard frame



JA 型<大法兰>机架 JA type frame JA II 型 69 标机架 JA II type 69 standard frame

JA(厂标)无支点机架主要参数及尺寸 Primary meters and sizes of JA frame without support

机 架 型 号 frame type	减 速 机 型 号 reducer type	输入轴接口 input shaft flange edge						输出轴接口 output shaft flange edge						反扭矩 反力矩 torque moment									
		D	D ₁	D ₂	h	h ₁	n-d ₁	D ₃	D ₄	D ₅	h ₂	h ₃	n-d ₂	H ₁	H ₂	H ₃	H ₄	c	d ₁	b	d ₂	b	
JA0	B12	190	160	140	16	5	4-12	165	210	250	16	6-12	205	55	55	18	45	30	8				
JA1	B15	230	200	170	16	5	6-12	215	260	290	16	8-12	200	101	75	25	50	35	10	35	10		
JA2	B18	260	230	200	20	6	6-14	290	350	380	20	8-14	250	116	90	30	70	45	14	50	14		
JA3	B22	340	310	270	22	6	6-14	360	440	480	22	8-18	300	134	110	30	80	55	16	60	18		
JA4	B27	400	360	316	25	7	8-18	440	535	580	25	8-22	380	138	130	40	90	70	20	70	20		
JA5	B33	490	450	400	25	7	12-22	500	560	620	25	8-24	486	149	150	48	110	90	25	95	25		
JA6	B39	580	520	455	25	9	12-22	480	560	600	30	16-23	455	195	170	45	120	100	28	100	28		
JA7	B45	650	590	520	30	11	12-27	560	650	700	30	16-27	503	221	185	45	130	110	28	110	28		
JA8	B55	880	800	680	30	11	12-37	720	810	880	37	20-27	569	249	245	45	150	130	32	130	3		

本机架适用于摆线针轮减速机的联接, 配刚性联轴器, 上联轴器装 A 型直孔或 B 型锥孔, 锥度为 1:20 的联轴器。该机架无支承适用于反应器传来的轴向力不大时使用。

The frame is applied in connecting cycloid pin wheel decelerator with rigidity coupling upper coupling is joined with A type straight hole or B type cone socket, subulate degree is 1:20. The frame without support is the same with less axial force be from reactor.

JA II (69 标) 无支点机架, 配螺纹联轴器主要参数及尺寸

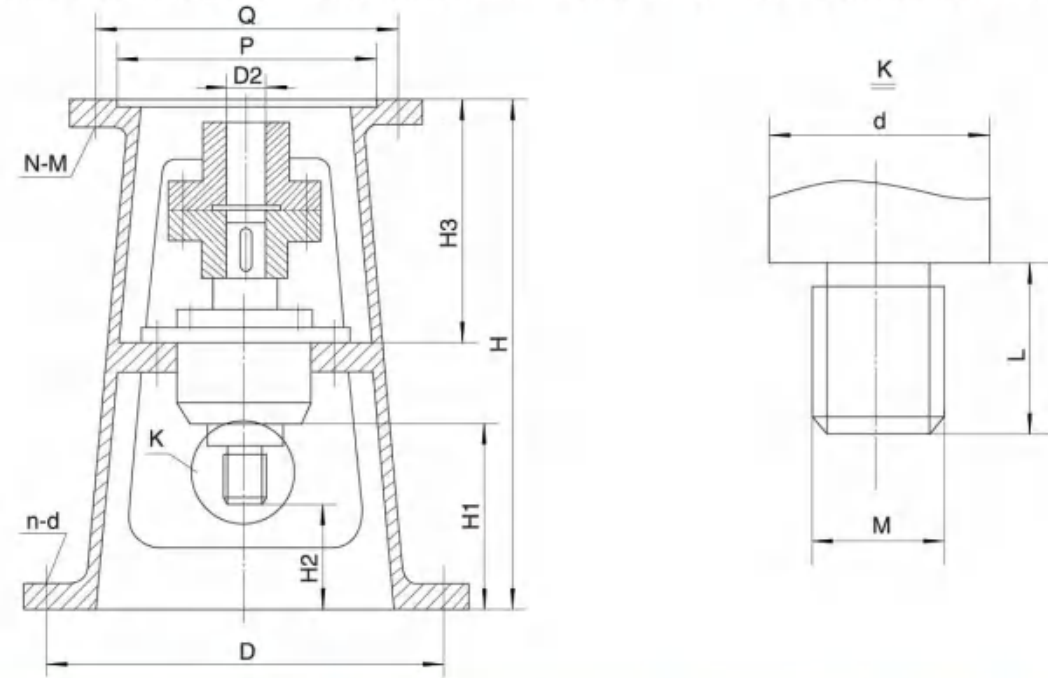
Primary meters and sizes of JA II (69 standard) frame without support

机架 型号 frame type	减速机 型号 reducer type	输入轴接口 input shaft flange edge						输出轴接口 output shaft flange edge						H ₁	H ₂	H ₃	H ₄	M	反扭矩 反力矩 torque moment (升)
		D	D ₁	D ₂	h	h ₁	n-d ₁	D ₃	D ₄	D ₅	h ₂	h ₃	n-d ₂						
JA II1	B15	230	200	170	16	5	6-12	215	260	290	16	4-12	226	84	93	50	M33x2	50-100	
															120	60	M42x3	200	
JA II2	B18	260	230	200	20	6	6-14	230	300	345	20	3-18	243	107	120	60	M42x3	200-300	
															120	60	M48x3	500	
															120	80	M60x4	1000	
JA II3	B22	340	310	270	22	6	6-14	320	400	460	22	4-20	323	117	120	80	M68x4	1500	
															120	80	M78x4	2000	
JA II4	B27	400	360	316	22	7	8-18	440	530	580	25	8-22	392	129	130	80	M78x4	3000	
JA II5	B33	490	450	400	25	7	12-22	450	550	600	28	8-22	385	155	130	80	M78x4	5000	

机架型号 frame type			H ₁	H ₂	H ₃	H ₄	输入端接口 inlet edge				输出端接口 outlet edge					WJ型 WJ type		LWJ型 LWJ type			
							D ₁	D ₂	D ₃	n ₁ -M	D ₄	D ₅	D ₆	α°	n2-∅	H	重量(kg)weight	H	重量(kg)weight		
WJ	30	A	20	15	4	6	140	160	190	4-M10	240	285	315	I20	10-∅14	450	34	600	43		
LWJ		B			4	6	170	200	230	6-M10				II30	12-∅14						
WJ	35	A	24	15	5	6	170	200	230	6-M10	260	320	360	I20	10-∅14	500	46	650	54		
LWJ													II30	12-∅14							
WJ	40	A	24	15	4	6	200	230	260	6-M12	260	320	360	I20	10-∅14	500	46	650	54		
LWJ													II30	12-∅14							
WJ	45	A	24	15	5	6	200	230	260	6-M12	260	320	360	I20	10-∅14	500	49	650	57		
LWJ													II30	12-∅14							
WJ	55	A	30	20	6	6	270	310	340	6-M12	325	400	435	30	12-∅14	540	75	690	83		
LWJ		B																			
WJ	65	A	34	20	6	6	316	360	400	8-M16	350	420	460	30	12-∅18	600	96	750	107		
LWJ																					
WJ	70	A	34	20	6	6	316	360	400	8-M16	350	420	460	30	12-∅18	600	96	750	107		
LWJ		B																			
WJ	80	A	38	25	6	8	345	390	430	8-M16	380	455	495	30	12-∅18	640	130	790	139		
LWJ		B																			
WJ	90	A	40	25	7	8	400	450	490	12-M20	430	510	555	30	12-∅23	660	168	860	183		
LWJ		B																			
WJ	100	A	120	A	40	25	9	10	455	520	580	12-M20	480	560	600	22.5	16-∅23	700	205	900	224
LWJ		B																			
WJ	110	A	120	A	40	30	11	10	520	590	650	12-M24	560	650	700	22.5	16-∅27	800	257	1000	274
LWJ		B				6															
WJ	130	A	140	A	44	30	11	10	680	800	880	12-M30	720	810	880	18	20-∅27	900	318	1200	365
LWJ		B				9															
WJ	150	A	160	A	50	35	14	12	760	920	1020	12-M30	840	940	1020	22.5	16-∅33	1000	420	1300	480
LWJ		B	</																		

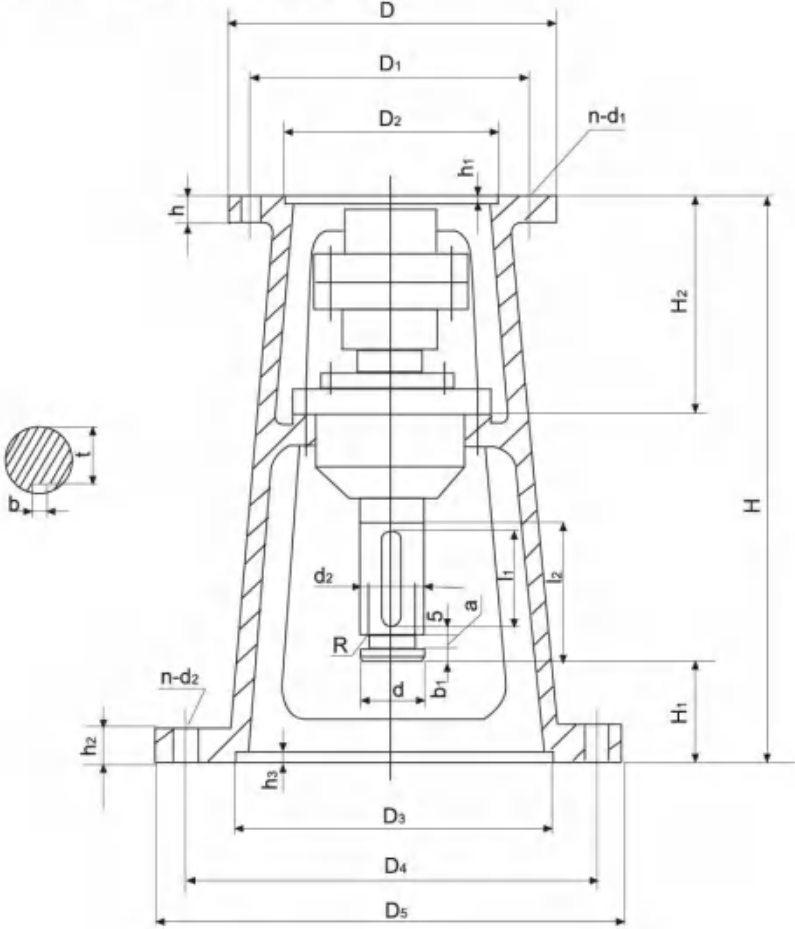
料架型号 frame work type	减速机 (BLY)	输入端接口 Inlet edge						输出端接口 Outlet edge						尺寸 dimension																反应罐 容积(升) volume (L)
		D	D ₁	D ₂	h	h ₂	n ₁ -d ₁	D ₃ (H ₆)	D ₄	D ₅	h ₃	h ₁	n ₂ -d ₂	H	H ₁	H ₂	H ₃	H ₄	H ₅	H ₆	H ₇	H ₈	H ₉	d ₃	d ₄	M ₀				
JBT ₁	15	230	200	170	18	5	6-ø12	220	270	305	7	20	4-ø24	514	157	175	77	4	40	6	33	34	28	30	24	M24X3	50-100			
JBT ₂	15	230	200	170	18	5	6-ø12	250	300	335	7	20	4-ø24	517	150	175	77	5	40	6	44	32	26	39	32	M33X3.5	200			
JBT ₂ -2#	18	260	230	200	18	5	6-ø14	250	300	335	7	20	4-ø24	530	134	209	93	5	40	6	44	32	26	39	32	M33X3.5	200			
JBT ₃ -2#	18	260	230	200	20	5	6-ø14	295	350	392	7	23	4-ø24	560	164	209	93	5	45	6	47	34	28	39	32	M33X3.5	300-500			
JBT ₃	22	340	310	270	20	6	6-ø14	295	350	392	7	23	4-ø24	560	165	209	97	5	45	6	47	34	26	39	32	M33X3.5	300-500			
JBT ₄	22	340	310	270	20	6	6-ø14	345	400	442	7	24	4-ø24	635	203	215	97	5	50	8	53	44	36	50	41.5	M42X4.5	1000-2000			
JBT ₅	22	340	310	270	22	6	6-ø14	390	450	498	7	25	4-ø24	680	193	239	97	5	55	8	58	45	37	60	51.5	M52X5	3000			
JBT ₅ -4#	27	400	360	316	22	6	8-ø18	390	450	498	7	25	4-ø30	680	193	239	120	5	55	8	58	45	37	60	51.5	M52X5	3000			
JBT ₆	27	400	360	316	22	6	8-ø18	435	500	548	7	26	8-ø30	736	215	253	120	9	51	8	65	50	42	70	61.5	M64X6	5000			
JBT ₇	33	490	450	400	26	7	12-ø22	440	550	600	10	28	12-ø22	805	180	341	156	8	44	8	80	50	42	90	79	M80X6				
JBT ₈	39	580	520	455	30	10	12-ø22	500	550	600	10	30	12-ø22	820	170	358	182	9	34	8	90	50	42	100	89	M90X6				
JBT ₉	45	650	590	520	30	12	12-ø27	560	650	700	10	35	16-ø27	1100	326	455	199	10	50	10	100	50	42	110	99	M98X6				
JBT ₁₀	55	880	800	680	38	12	12-ø37	720	810	880	10	40	20-ø27	1200	409	460	219	10	50	10	100	50	42	130	119	M118X6				

(四)HG5-251-69 标准反应罐配套摆线针轮减速机传动机架尺寸
Frame size of cycloidal pin wheel decelerator for HG5-251-69 standard reactor



机架型号 frame work type	反应罐 (立升) reactor (l)	减速机 reducer (BLY)	反应罐连接处 reactor connection		H	H ₂	H ₁	H ₃	搅拌轴连接处 stiring shaft connection			减速机连接处 reducer connection			
			D	n-d					M	L	d	p	N-M	D ₂	Q
TB ₁	50 100	15	220	3-ø14	514	110	268	175	M33X2	50	45	170	6-ø12	35	200
TB ₂	200	15	280	3-ø14	514	140	268	175	M42X3	60	55	170	6-ø12	35	200
TB ₃	300	18	300	3-ø18	530	190	264	209	M42X3	65	50	200	6-ø14	45	230
TB ₃	500	18	300	3-ø18	530	190	264	209	M48X3	65	55	200	6-ø14	45	230
TB ₄	1000	22	400	4-ø26	675	200	356	215	M60X4	80	70	270	6-ø14	55	310
TB ₄	1500	22	400	4-ø26	675	200	356	215	M65X4	85	75	270	6-ø14	55	310
TB ₄	2000	22	400	4-ø26	675	200	356	215	M78X4	90	89	270	6-ø14	55	310
TB ₅	3000	22	400	4-ø26	675	200	356	215	M78X4	90	89	270	6-ø14	55	310
TB ₅	3000	27	400	4-ø26	720	200	398	253	M78X4	90	89	316	8-ø18	70	360
TB ₆	5000	27	500	4-ø30	736	200	393	253	M78X4	100	89	316	8-ø18	70	360

(五)TJQ 型机架 TJQ type frame



TJQ型机架 TJQ type frame

TJQ 型机架下装 JQ、JJQ 型夹壳式联轴器主要参数及尺寸
Primary parameter and dimension of installed down JQ, JJQ type split coupling for TJQ type frame

机架 型号 frame type	减速机 型号 reducer type	输出 轴d output shaft (h7)	输入端接口 inlet edge						输出端接口 outlet edge						H	H ₁	H ₂	l ₁	l ₂	a (H ₁₁)	b ₁	d ₂ (h ₁₁)	b	t
			D	D ₁	D ₂	h	h ₁	n-d ₁	D ₃	D ₄	D ₅	h ₂	h ₃	n-d ₂										
TJQ2	B15	35	230	200	170	18	5	6-12	250	300	335	20	7	4-24	517	173	175	55	85	5	4	30	10	30
TJQ3	B18	45	260	230	200	20	6	6-14	295	350	392	23	7	4-24	560	196	209	70	100	6	5	37	14	39.5
TJQ4	B22	55	340	310	270	20	6	6-14	345	400	442	24	7	4-24	635	246	215	70	100	6	5	47	16	49
TJQ5	B22	55	340	310	270	20	6	6-14	390	450	498	25	7	4-30	680	271	250	70	100	6	5	47	16	49
TJQ6	B27	70	400	360	316	22	6	8-18	435	500	548	26	7	8-30	736	253	253	100	130	8	6	60	20	62.5
TJQ7	B33	90	490	450	400	25	7	12-22	440	550	600	28	10	12-22	805	195	341	140	170	10	8	80	25	81
TJQ8	B39	100	580	520	455	26	10	12-22	500	550	600	30	10	12-22	820	186	358	140	170	10	8	90	28	90
TJQ9	B45	110	650	590	520	30	12	12-27	560	650	700	35	10	16-27	1100	326	455	160	200	12	10	100	28	100
TJQ10	B55	130	880	800	680	38	12	12-37	720	810	880	40	10	20-27	1200	384	460	180	225	14	12	118	32	119

Technical drawing of a mechanical part, likely a pump or valve component, showing a cross-section with various dimensions and labels. The drawing includes the following dimensions and labels:

- Dimensions:**
 - D : Overall outer diameter at the top.
 - $D1$: Diameter of the upper cylindrical section.
 - $D2$: Diameter of the middle cylindrical section.
 - $D3$: Diameter of the lower cylindrical section.
 - $D4$: Diameter of the base flange.
 - $D5$: Diameter of the bottom flange.
 - $D6$: Diameter of the central shaft.
 - $D7$: Diameter of the central shaft.
 - $D8$: Diameter of the central shaft.
 - d : Diameter of the central shaft.
 - h : Height of the top flange.
 - $h1$: Height of the upper cylindrical section.
 - $h2$: Height of the lower cylindrical section.
 - $h3$: Height of the base flange.
 - $h4$: Height of the bottom flange.
 - $H1$: Total height of the component.
 - $H2$: Height of the upper cylindrical section.
 - $H3$: Height of the lower cylindrical section.
 - 4 : Thickness of the central shaft.
- Labels:**
 - $n-d1$: Label for the top flange.
 - $n-M$: Label for the middle cylindrical section.
 - $n-M1$: Label for the middle cylindrical section.
 - $n-d2$: Label for the bottom flange.

机型型号 frame work type	转速 机 acceleration (BLY)	输入端接口 Inlet edge						输出端接口 Outlet edge															
		D	D ₁	D ₂	h	h ₁	n-d ₁	D ₃	D ₄	D ₅	h ₂	h ₃	n-d ₂	H	H ₁	H ₂	H ₃	d	D _a	D ₇	D ₈	n-M	n-M ₁
TJ1	15	230	200	170	20	6	6-ø12	220	270	305	22	7	4-ø24	514	201	175	15	35	60	115	140	4-M12	1-M10
TJ2	15	230	200	170	18	5	6-ø12	250	300	335	20	7	4-ø24	517	197	175	15	35	60	115	140	4-M12	1-M10
TJ2	18	260	230	200	22	6	6-ø14	250	300	335	25	7	4-ø25	530	176	209	20	45	85	120	160	4-M12	1-M12
TJ3	18	260	230	200	20	6	6-ø14	295	350	392	23	7	4-ø24	560	206	209	20	45	85	120	160	4-M12	1-M12
TJ3	22	340	310	270	20	6	6-ø14	295	350	392	23	7	4-ø24	560	191	210	20	45	85	120	160	4-M12	1-M12
TJ4	22	340	310	270	20	6	6-ø14	345	400	442	23	7	4-ø24	635	245	215	22	55	100	150	180	4-M16	1-M16
TJ5	22	340	310	270	22	6	6-ø14	390	450	498	26	7	4-ø24	680	250	250	22	55	100	150	180	4-M16	1-M16
TJ6	27	400	360	316	22	6	8-ø18	435	500	548	24	7	8-ø30	736	276	253	28	70	110	165	200	4-M16	1-M16
TJ7	33	490	450	400	25	7	12-ø22	440	550	600	26	10	12-ø22	805	261	341	36	90	150	190	230	4-M16	2-M12
TJ8	39	580	520	455	26	10	12-ø22	500	550	600	28	10	12-ø22	820	209	358	36	100	160	230	280	6-M16	2-M16
TJ9	45	650	590	520	30	12	12-ø27	560	650	700	35	10	16-ø27	1100	355	455	36	110	170	245	290	8-M18	3-M16
TJ10	55	880	800	680	38	12	12-ø37	720	810	880	40	12	20-ø27	1200	378	460	38	130	180	275	330	8-M18	3-M16

机架型号 frame work type	减速机输入接口 reducer inlet edge						输出端接口 outlet edge						I 型 type			II 型 type		
	D ₁ (H ₈)	D ₂	D ₃	F ₁	b ₂	n ₁ -ø ₁	D ₄	D ₅	D ₆ (H ₈)	f ₂	b ₃	n ₂ -ø ₂	H	H ₃	重量kg weight	H	H ₃	重量kg weight
JXLD3-35	170	200	230	6	15	6-ø12	410	360	300	6	18	6-ø18	520	163	55	610	253	60
JXLD4-45	200	230	260	6	15	6-ø12	450	400	335	6	18	6-ø18	570	168	80	670	268	86
JXLD5-55	270	310	340	6	20	6-ø15	500	450	385	6	22	8-ø18	650	163	110	750	263	120
JXLD6-65	316	360	400	6	22	8-ø19	530	480	410	8	24	12-ø18	660	192	130	760	292	145
JXLD7-80	345	390	430	8	22	8-ø19	565	510	430	8	24	12-ø22	740	201	160	860	321	178
JXLD8-90	400	450	490	8	25	12-ø24	565	510	430	8	28	12-ø22	800	206	208	920	326	230
JXLD9-100	455	520	580	10	28	12-ø24	580	520	455	10	30	12-ø22	810	210	235	920	320	262
JXLD10-110	520	590	650	12	30	12-ø28	650	590	520	12	30	12-ø22	830	218	300	950	338	345
JXLD11-130	680	800	880	12	30	12-ø37	880	800	680	12	35	12-ø37	850	184	480	970	304	538
JXLD12-180	900	1020	1160	12	40	8-ø39	1160	1020	900	12	46	12-ø39	1200	235	857	1350	385	913

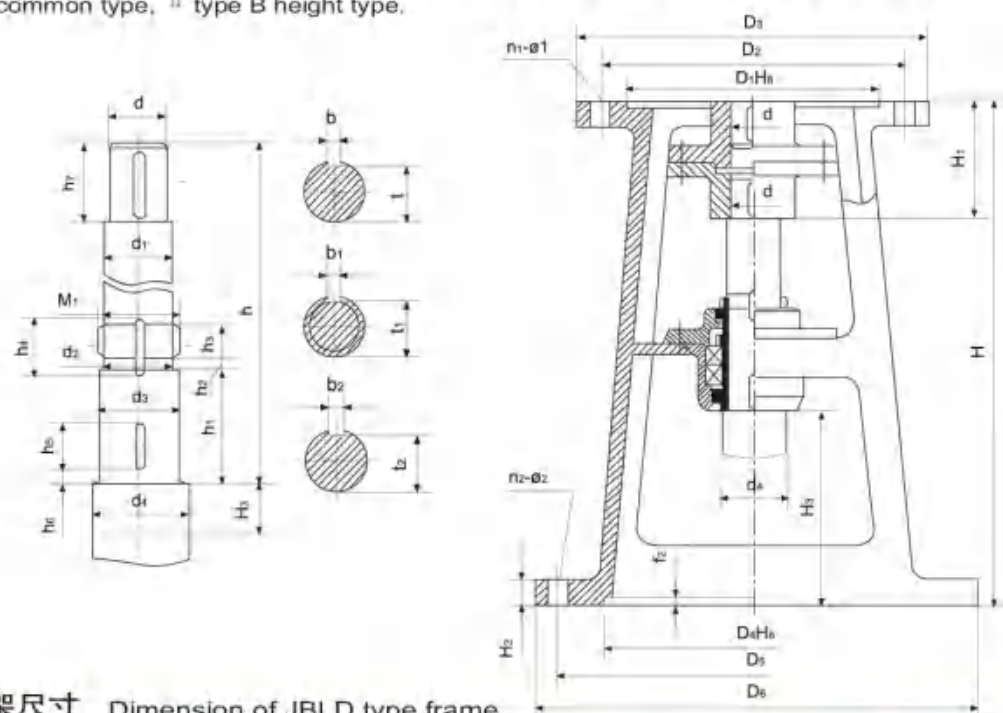
机架型号 frame work type	搅拌轴轴端尺寸														stirring shaft edge size							
	d	d ₁	d ₂	d ₃ (k ₀)	d ₄	d ₅	l ₁	l ₂	l ₃	l ₄	l ₅	l ₆	b	t	b ₁	t ₁	H ₁	H ₂				
JXLD3-35	35k6	40	M45X1.5	45	42.5 ^{0 -0.25}	42.8	60	215	12	3	18	1.7 ^{+0.14 0}	10	30	6	41	294	139				
JXLD4-45	45k6	50	M55X2	55	52 ^{0 -0.30}	52	75	235	14	4	19	2.2 ^{+0.14 0}	14	39.5	8	51	331	171				
JXLD5-55	55m6	60	M65X2	65	62 ^{0 -0.30}	62	75	302	14	4	21	2.7 ^{+0.14 0}	16	49	8	61	405	178				
JXLD6-65	65m6	70	M75X2	75	72 ^{0 -0.30}	72	90	277	16	4	23	2.7 ^{+0.14 0}	18	58	10	70	384	197				
JXLD7-80	80m6	85	M90X2	90	86.5 ^{0 -0.35}	87	105	316	24	4	28	2.7 ^{+0.14 0}	22	71	12	84	442	231				
JXLD8-90	90m6	95	M100X2	100	96.5 ^{0 -0.35}	97	125	320	24	4	32	2.7 ^{+0.14 0}	25	81	12	94	486	291				
JXLD9-100	100m6	105	M110X2	110	106 ^{0 -0.54}	107	125	308	24	4	36	3.2 ^{+0.14 0}	28	90	14	104	488	305				
JXLD10-110	110m6	115	M120X2	120	116 ^{0 -0.54}	117	155	267	28	4	38	3.2 ^{+0.14 0}	28	100	14	114	488	376				
JXLD11-130	130m6	135	M140X2	140	136 ^{0 -0.63}	137	155	296	30	4	40	3.2 ^{+0.14 0}	32	119	14	132	530	389				
JXLD12-180	180m6	185	M190X3	190	185 ^{0 -0.60}	187	310	412	38	4	55	3.2 ^{+0.16 0}	45	165	16	179	792	690				

Note: The frame is used to connect with XLD type cycloidal pin wheel decelerator. □ is common type, ▤ is height type.

(八)JBLD 型机架尺寸 Dimension of JBLD type frame

该支架适用于与BLY型摆线减速机连接，为使搅拌轴与轴承室装配、维修方便，对JB型机架的轴承室结构进行改进设计，将轴承室加大，使之与较粗的搅拌轴相一致。其中Ⅰ型为普通型，Ⅱ型为增高型。

The frame is used to connect with BLY type cycloidal reducer, for be prone to install and service for mixed shaft and bearing house, we increase bearing house of JB type frame, so that make coherence with thick mixed shaft, there into type Ⅰ is common type, Ⅱ type B height type.

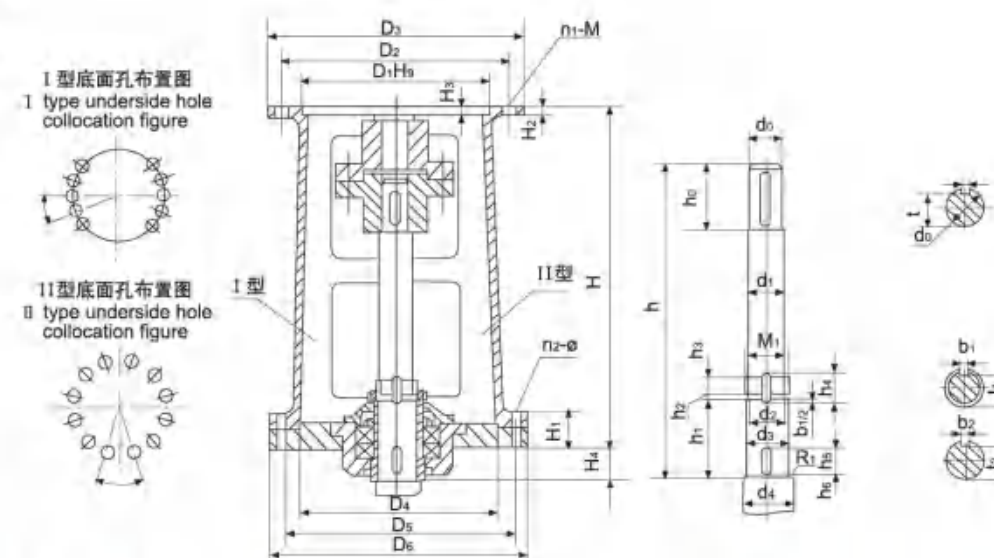


JBLD 型机架尺寸 Dimension of JBLD type frame

机 架 型 号 frame type	减 速 机 型 号 reducer type	输入端接口 inlet edge					输出端接口 outlet edge							I 型 I type			II 型 II type		
		D ₁ (H8)	D ₂	D ₃	n ₁ -M ₁	D ₄ (H8)	D ₅	D ₆	n ₂ -Ø2	H ₁	H ₂	L ₁	H ₃	H ₄	重量kg weight	H ₅	H ₆	重量kg weight	
JBLDJ1	B15	170	200	230	6-ø12	300	360	410	6-ø18	138	18	6	520	158	55	610	248	60	
JBLDJ2	B18	200	230	260	6-ø14	335	400	450	6-ø18	182	18	6	570	167	84	670	267	90	
JBLDJ3	B22	270	310	340	6-ø14	385	450	500	8-ø18	220	24	8	650	167	115	750	267	125	
JBLDJ4	B27	316	360	400	8-ø18	410	480	530	12-ø18	257	24	8	660	161	138	760	262	158	
JBLDJ5	B33	400	450	490	12-ø22	430	510	565	12-ø22	306	28	8	800	199	208	920	319	230	
JBLDJ6	B39	455	520	580	12-ø22	455	520	580	12-ø22	332	30	10	810	203	235	920	313	262	
JBLDJ7	B45	520	590	650	12-ø27	520	590	650	12-ø22	350	30	12	830	252	300	950	372	345	
JBLDJ8	B55	680	800	880	12-ø37	680	800	880	12-ø37	400	45	12	860	200	480	980	320	538	

机架型号 frame type	滚珠轴轴端尺寸 axis end dimension of ballbed axis																				配联轴器型号 coupling type	
	H	d ₁	M ₁	d ₂	d ₃ (K8)	d ₄	R ₁	b	t	b ₁	t ₁	b ₂	t ₂	h ₁	h ₂	h ₃	h ₄	h ₅	h ₆	h ₇		h
JBLDJ1	35	42	M45X1.5	42.8	45	50	1	12	35	6	41	6	41.5	113	3	15	22	40	3	58	282	GT35X65
JBLDJ2	45	57	M60X2	57	60	65	1	14	44.5	8	56	8	56	118	4	15	28	40	3	74	295	GT45X87
JBLDJ3	55	71	M75X2	72	75	80	1	16	58	10	69	10	70	143	4	18	32	50	3	92	355	GT55X102
JBLDJ4	70	81	M85X2	82	85	90	1.5	22	71	10	79	10	80	163	4	18	32	60	3	115	357	GT70X125
JBLDJ5	90	91	M95X2	92	95	110	1.5	25	81	12	89	12	90	168	4	20	36	60	3	145	440	GT90X150
JBLDJ6	100	112	M115X2	112	115	125	2	28	90	14	109	14	109.5	178	4	24	42	60	3	165	425	GT100X170
JBLDJ7	110	112	M115X2	112	115	125	2	28	100	14	109	14	109.5	178	4	24	42	60	3	165	393	GT110X170
JBLDJ8	130	135	M140X2	137	140	150	2	32	119	14	132	14	134.5	208	4	28	46	70	3	180	440	GT130X210

(九)DXJ 型机架 DXJ type frame



DXJ 型单支点机架主要参数及尺寸 Primary parameter and dimension of DXJ type single-support frame

机架代号 frame code		H	H ₁	H ₂	H ₃	H ₄	输入轴接口 inlet edge					输出轴接口 outlet edge					轴端尺寸 shaft end dimension of inlet edge					重量 weight				
							D ₁	D ₂	D ₃	n ₁ -M	D ₄	D ₅	D ₆	d ₁	d ₂	d ₃	d ₄ (H8)	d ₅	b	t	b ₁	t ₁	b ₂	t ₂		
DXJ30	A B	470	40	15	4	45	140 200	160 230	190 260	4-M10 6-M12	240	285	315	120 1130	10-Ø 14 12-Ø 14											48
DXJ35	A	524	48	15	5	47	170	200	230	6-M10	260	320	360	120 1130	10-Ø 14 12-Ø 14											62
DXJ40	A	524	48	15	4	47	200	230	260	6-M12	260	320	360	120 1130	10-Ø 14 12-Ø 14											62
DXJ45	A	524	48	15	5	49	200	230	260	6-M12	260	320	360	120 1130	10-Ø 14 12-Ø 14											67
DXJ55	A	570	60	20	6	47	270	310	340	6-M12	325	400	435	30	12-Ø 14											107
DXJ65	A	634	68	20	6	58	316	360	400	8-M16	350	420	460	30	12-Ø 18											150
DXJ70	A	634	68	20	6	58	316	360	400	8-M16	350	420	460	30	12-Ø 18											150
DXJ80	A	678	76	25	6	70	345	390	430	8-M16	380	455	495	30	12-Ø 18											213
DXJ90	A	700	80	25	7	72	400	450	490	12-M20	430	510	555	30	12-Ø 23											276
DXJ100	A	740	80	25	9	76	455	520	580	12-M20	480	560	600	22.5	16-Ø 23											326
DXJ110	A	840	80	30	11	76	520	590	650	12-M20	560	650	700	22.5	16-Ø 27											505
DXJ120	A	840	80	30	11	76	520	590	650	12-M24	560	650	700	22.5	16-Ø 27											510
DXJ130	A	950	94	30	11	85	680	800	880	12-M30	720	810	880	18	20-Ø 27											689
DXJ140	A	950	94	30	11	85	680	800	880	12-M30	720	810	880	18	20-Ø 27											696
DXJ150	A	950	94	35	14	85	760	920	1020	12-M30	840	940	1020	22.5	16-Ø 33											708
DXJ160	A	950	100	35	14	95	760	920	1020	12-M30	840	940	1020	22.5	16-Ø 33											930
DXJ180	A	1050	100	40	14	115	900	1020	1160	8-M36	970	1080	1160	18	20-Ø 33											1240

注：图示所注“h”仅与本样本BLY系列减速机相配，如选用其他型号减速机，“h”需另行计算。

Note: "h" noted in the figure is used only for BLY series reducer of this catalogue, "h" must be calculate aside if selecting other type reducers.

机架 型号 frame type	减速机 型号 reducer type	D ₁	D ₂	D ₃ (H ₁)	D ₄ (H ₂)	D ₅	D ₆	n ₁ -d ₁	n ₂ -d ₂	H	H ₁	H ₂	H ₃	H ₄	H ₅	H ₆	H ₇	H ₈
J2	B18	260	230	200	295	350	392	6-14	4-24	568	301	159	89	74	20	17	70	483
J3	B22	340	310	270	345	400	442	6-14	4-24	675	358	178	101	81	37	20	82	578
J4-A	B27	400	360	316	350	420	460	8-18	6-20	720	384	211	123	92	19	22	83	601
J4	B27	400	360	316	435	500	548	8-18	8-30	736	384	215	123	92	25	28	120	613
J5	B33	490	450	400	440	550	600	12-22	12-22	835	363	280	150	130	44	40	142	685
J6	B39	580	520	455	500	550	600	12-22	12-22	928	380	350	187	163	46	40	156	739

机架型号 frame type	减速机型号 reducer type	d ₁	d ₂	d ₃	MD	(kg)	e	f	f ₁	f ₂	f ₁₁	f ₁₂
J2	B18	45	45	43	M50x2	50	14	48.5	6	5	20	23
J3	B22	55	55	63	M65x2	65	16	59	6	5	20	24
J4-A	B27	70	65	68	M70x2	70	20	74.5	7	5	22	24
J4	B27	70	70	72	M75x2	75	20	74.5	7	5	22	26
J5	B33	90	90	95	M100x2	100	25	95	8	7	26	28
J6	B39	100	100	105	M100x2	110	28	106	10	7	28	30

[illegible]

机架型号 frame type	减速机 机型号 reducer type	输入端接口 Input shaft						输出端接口 Output shaft						尺寸 Dimensions							
		D	D ₁	D ₁ (H9)	h ₁	h ₁ ₁	n-d ₁	D ₂	D ₂ ₁	n-d ₂	h ₂	ø	ø ₁	ø ₂	H ₁	H ₂	H ₃	H ₄	A		
DXJA0	B12	190	160	140	16	5	4-12	250	210	3-12	16	105	45	30	260	200	34	70	38		
DXJA1	B15	230	200	170	16	5	6-12	290	260	4-12	16	105	45	35	310	200	47	85	38		
DXJA2	B18	260	230	200	20	6	6-14	345	300	3-18	20	116	50	45	350	200	57	100	39		
DXJA3	B22	340	310	270	22	6	6-14	440	400	4-20	22	134	60	55	440	250	77	100	43		
DXJA4	B27	400	360	316	22	7	8-18	440	400	6-20	22	160	75	70	521	250	87	130	46		
DXJA5	B33	490	450	400	25	7	12-22	600	550	8-22	28	236	100	90	540	300	107	170	62		
DXJA6	B39	580	520	455	28	10	12-22	600	560	12-22	30	250	110	100	624	350	130	170			
DXJA7	B45	650	590	520	30	12	12-27	700	650	12-22	30	275	120	110	724	400	142	200			
DXJA8	B55	880	800	680	30	12	12-37	880	810	20-27	37	310	140	130	818	450	202	225			

Please show in order if you have special request to output shaft length

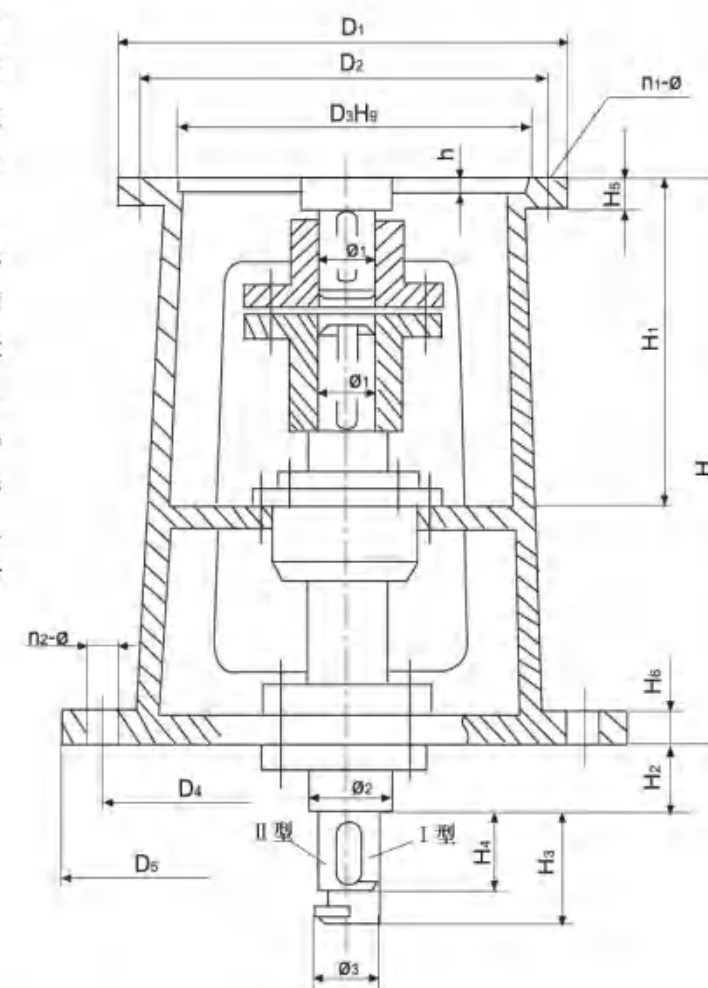
1 型底面孔布置图
position of 1 type hole

Technical drawing showing the layout of a 1-type bottom hole. The drawing includes a top view and a cross-sectional view. The top view shows a circular hole with diameter d_0 and a cross-section showing a hole with diameter d_1 and height h_0 . The cross-section also shows a hole with diameter d_2 and height h_1 . The total height of the hole is h . The drawing is labeled "1 型底面孔布置图" and "position of 1 type hole".

机型名称 frame work type	型号 type	尺寸系列 reduce filter size				轴径规格 shaft type				H ₁	H ₂	H ₃	H ₄	H ₅	
		D ₁	D ₂	D ₃	n ₁ -M	D ₄	D ₅	D ₆	a						n - o
DJ(LDJ)30 A	B12	140	160	190	4-M10	240	285	315	120	10-ø14	320	15	20	6	6
	B15	170	200	230	6-M10				130	12-ø14					
DJ(LDJ)35A	B15	170	200	230	6-M10	260	320	360	120	10-ø14	334	15	20	6	6
									130	12-ø14					
DJ(LDJ)40A	B18	200	230	260	6-M12	260	320	360	120	10-ø14	334	15	20	6	6
									130	12-ø14					
DJ(LDJ)45A	B18	200	230	260	6-M12	260	320	360	120	10-ø14	338	15	20	6	6
									130	12-ø14					
DJ(LDJ)55A	B22	270	310	340	6-M12	325	400	435	30	12-ø14	372	20	24	7	6
DJ(LDJ)65A	B27	316	360	400	8-M16	350	420	460	30	12-ø18	447	22	24	7	6
DJ(LDJ)70A	B27	316	360	400	8-M16	350	420	460	30	12-ø18	447	22	24	7	6
DJ(LDJ)80 A	B27	316	360	400	8-M16	380	455	495	30	12-ø18	495	22	28	7	8
	B33	400	450	490	12-M20										
DJ(LDJ)90A	B33	400	450	490	12-M20	430	510	555	30	12-ø23	519	25	28	7	8
DJ(LDJ)100A	B39	455	520	580	12-M20	480	560	600	22.5	16-ø23	535	25	28	10	10
DJ(LDJ)110A 120A	B45	520	590	650	12-M24	560	650	700	22.5	16-ø27	660	30	35	12	10
DJ(LDJ)130A 140A	B55	680	800	880	12-M30	720	810	880	18	20-ø27	790	38	40	12	12
DJ(LDJ)150	B65	760	920	1000	12-M30	840	940	1020	22.5	16-ø33	790	45	45	14	12
DJ(LDJ)160	B65	760	920	1000	12-M30	840	940	1020	22.5	16-ø33	810	50	50	14	12
DJ(LDJ)180	X12	900	1020	1160	8-M36	970	1080	1160	18	20-ø33	910	50	50	14	12

frame work type	DJ(LDJ) 30A 35A 40A 45A 55A 65A 70A 80A 90A 100A 110A 120A 130A 140A 150 160 180																			DJ(LDJ) 30A 35A 40A 45A 55A 65A 70A 80A 90A 100A 110A 120A 130A 140A 150 160 180				DJ(LDJ) 30A 35A 40A 45A 55A 65A 70A 80A 90A 100A 110A 120A 130A 140A 150 160 180						
	n	n ₀	n ₁	n ₂	n ₃	n ₄	n ₅	n ₆	n ₇	n ₈	M	n ₉	n ₁₀	n ₁₁	n ₁₂	n ₁₃	n ₁₄	n ₁₅	n ₁₆	n ₁₇	n ₁₈	n ₁₉	n ₂₀	n ₂₁	n ₂₂	n ₂₃	n ₂₄	H	weight	H
DJ(LDJ)30 ^A _B	258 254	58	103	3	13	22	30	30	32	32.8	M35X1.5	35	40	8	26	6	31	6	31.5	550	46	700	58							
DJ(LDJ)35A	260	58	113	3	15	24	40	35	42	42.8	M45X1.5	45	50	10	30	6	41	6	41.5	600	79	750	89							
DJ(LDJ)40A	241	74	113	3	15	24	40	40	42	42.8	M45X1.5	45	50	12	35	6	41	6	41.5	600	79	750	89							
DJ(LDJ)45A	245	74	113	3	15	28	40	45	47	47.8	M50X1.5	50	65	14	39.5	8	46	8	46	600	84	750	94							
DJ(LDJ)55A	280	81	118	4	15	28	40	55	57	57	M60X2	60	65	16	49	8	56	8	56	680	151	780	157							
DJ(LDJ)65A	327	92	143	4	18	32	50	65	71	72	M75X2	75	80	18	58	10	69	10	70	720	171	870	181							
DJ(LDJ)70A	327	92	143	4	18	32	50	70	72	72	M75X2	75	80	20	62.5	10	69	10	70	720	171	870	181							
DJ(LDJ)80 ^A _B	374 349	96	163	4	18	32	60	80	82	82	M85X2	85	90	22	71	10	79	10	80	785	209	935	219							
DJ(LDJ)90A	373	129	168	4	20	36	60	90	92	92	M95X2	95	110	25	81	12	89	12	90	805	266	955	276							
DJ(LDJ)100A	354	126	178	4	24	42	60	100	112	112	M115X2	115	125	28	90	14	109	14	109.5	820	347	1020	362							
DJ(LDJ)110A	462	159	178	4	24	42	60	110	112	112	M115X2	115	125	28	100	14	109	14	109.5	1100	533	1150	537							
DJ(LDJ)120A	462	159	178	4	24	42	60	120	122	122	M125X2	125	140	32	109	14	119	14	119.5	1100	553	1150	557							
DJ(LDJ)130A	577	202	208	4	28	46	70	130	135	137	M140X2	140	150	32	119	14	132	14	134.5	1200	723	1400	754							
DJ(LDJ)140A	577	202	208	4	28	46	70	140	145	147	M150X2	150	160	36	128	16	142	16	144	1200	743	1400	774							
DJ(LDJ)150	525	210	208	4	32	46	70	150	155	156	M160X2	160	170	36	138	16	152	16	154	1200	765	1400	798							
DJ(LDJ)160	545	210	227	4	32	50	80	160	165	166	M170X2	170	180	40	147	16	162	16	164	1200	780	1400	820							
DJ(LDJ)180	530	235	242	4	36	56	90	180	185	186	M190X2	190	200	45	165	18	180	18	182	1280	887	1400	933							

(十三)ST 型双支点机架 ST type double-support frame



机型型号 frame work type	型号 type	主轴承及主油出口 main main oil exit				副油泵出口 2nd oil pump				油缸缸径及行程 oil cylinder bore and stroke													
		D ₁	D ₂	D ₃	n ₁ -ø	D ₄	D ₅	D ₆	寸 in	n ₂ -ø	z	H ₀	H ₁	H ₂	H ₃	H ₄	H ₅	H ₆	H ₇	d ₀ (h ₀)	d ₁	d ₂	
SJ(LSJ)35	B15	170	200	230	6-M10	260	320	360	30	12-ø14	2	388	335	43	18	22	18	6	35	42	42.8		
SJ(LSJ)45	B18	200	230	260	6-M12	260	320	360	30	12-ø14	2	388	338	56	18	22	18	6	45	47	47.8		
SJ(LSJ)55A	B22	270	310	340	6-M12	325	400	435	30	12-ø14	2	425	402	58	20	24	6	6	55	57	57		
SJ(LSJ)65A	B27	316	360	400	8-M16	350	420	460	30	12-ø18	3	428	487	58	22	24	6	6	65	72	72		
SJ(LSJ)70A	B27	316	360	400	8-M16	350	420	460	30	12-ø18	3	428	487	58	22	24	6	6	70	72	72		
SJ(LSJ)80 A _B	B27	316	360	400	8-M16																		
	B33	400	450	490	12-M20	380	455	495	30	12-ø23	3	428	545	60	25	28	7	8	80	81	82		
SJ(LSJ)90A	B33	400	450	490	12-M20	430	510	555	30	12-ø23	3	567	569	69	25	35	7	8	90	91	92		
SJ(LSJ)100A	B39	455	520	580	12-M20	480	560	600	22.5	16-ø23	3	563	685	78	30	40	10	10	100	111	112		
SJ(LSJ)110A	B45	520	590	650	12-M24	560	650	700	22.5	16-ø27	4	557	685	78	36	42	11	10	110	111	112		
SJ(LSJ)120A	B45	520	590	650	12-M24	560	650	700	22.5	16-ø27	4	557	685	84	36	42	11	10	120	122	122		
SJ(LSJ)130A	B55	680	800	880	12-M30	720	810	880	18	20-ø27	4	596	761	81	40	43	11	10	130	135	137		
SJ(LSJ)140A	B55	680	800	880	12-M30	720	810	880	18	20-ø27	4	596	761	90	40	43	11	10	140	145	147		
SJ(LSJ)150A	B65	760	920	1000	12-M30	840	940	1020	22.5	16-ø33	4	650	761	66	45	45	14	10	150	155	156		
SJ(LSJ)160A	B65	760	920	1000	12-M30	840	940	1020	22.5	16-ø33	4	650	780	71	50	50	14	12	160	165	166		
SJ(LSJ)180	X12	900	1020	1160	8-M36	970	1080	1160	18	20-ø33	4	650	910	71	50	50	14	12	180	185	186		

机架型号 frame work type	滚子链规格尺寸 roller chain size																	SJ型 type			LSJ型 type		
	d ₃	d ₄	h	h ₀	h ₁	h ₂	h ₃	h ₄	h ₅	h ₆	h ₇	M ₀	t	b	t ₁	b ₁	t ₂	b ₂	H	H ₂	重量kg weight	H	H ₂
SJ(LSJ)35	45	50	261	58	113	1524	291	85	40	3	M45X1.5	30	10	41	6	41.5	8	970	316	130	1120	466	150
SJ(LSJ)45	50	65	245	74	113	1528	288	100	40	3	M50X1.5	39.5	14	46	8	46	8	970	316	150	1120	466	170
SJ(LSJ)55A	60	65	303	80	118	1524	296	130	40	3	M60X2	49	16	56	8	56	8	1070	312	170	1220	462	186
SJ(LSJ)65A	75	80	370	95	143	1832	284	135	50	3	M75X2	58	18	69	10	70	10	1140	307	261	1290	457	277
SJ(LSJ)70A	75	80	370	95	143	1832	284	135	50	3	M75X2	62.5	20	69	10	70	10	1140	307	261	1290	457	277
SJ(LSJ)80 ^A _B	85	90	⁴²⁸ ₄₀₂	95	163	1832	260	145	60	3	M85X2	71	22	79	10	80	10	1230	354	372	1380	504	388
SJ(LSJ)90A	95	110	426	115	168	2036	390	162	60	3	M95X2	81	25	89	12	90	12	1400	363	427	1550	513	447
SJ(LSJ)100A	115	125	500	135	178	2442	370	182	60	3	M115X2	91	28	109	14	109.5	14	1510	367	515	1710	567	542
SJ(LSJ)110A	115	125	497	145	178	2442	366	182	60	3	M115X2	100	28	109	14	109.5	14	1510	373	621	1710	573	642
SJ(LSJ)120A	125	140	497	145	178	2442	354	192	60	3	M125X2	109	32	119	14	119.5	14	1510	373	641	1710	573	662
SJ(LSJ)130A	140	150	531	205	208	2846	364	205	70	3	M140X2	119	32	132	14	134.5	14	1610	374	994	1810	574	1021
SJ(LSJ)140A	150	160	531	205	208	2846	370	205	70	3	M150X2	128	36	142	16	144	16	1610	374	1020	1810	574	1047
SJ(LSJ)150	160	170	496	210	208	3246	370	205	70	3	M160X3	138	36	152	16	154	16	1660	400	1050	1860	600	1110
SJ(LSJ)160	170	180	515	210	227	3250	340	215	80	3	M170X3	147	40	162	16	164	16	1660	400	1060	1860	600	1120
SJ(LSJ)180	190	200	530	235	242	3656	310	230	90	3	M190X3	165	45	180	18	182	18	1710	400	1220	1920	600	1260

本系列机架适用于常压容器，双支点轴承，搅拌轴旋转平稳可靠与其它双支点相比，结构紧凑外形尺寸小，标定型号以减速机输出轴直径为主参数，上联轴器采用HL型弹性柱销联轴器，由我厂配套供应。

The series frame is used for normal press case, double-support bearing. Mixed shaft works smoothly and triedly, when it compare with other double-support frame, it has well-knitted structure, small shape dimension. Primary parameter of type is output shaft diameter. Up coupling is HL type spring cylinder pin coupling of our factory.

ST 型双支点机架技术参数及尺寸

Technical parameter and dimension of ST type double-support frame

frame type	reducer type	D ₁	D ₂	D ₃	n ₁ [1]	D ₄	D ₅	n ₂ [1]	U ₁	U ₂	U ₃	n	H	H ₁	H ₂	H ₃	H ₄	H ₅	H ₆	H ₇
ST35	B1	230	200	170	6-12	300	335	4-18	35	45	35	5	517	175	200	85	47	47	18	20
ST45	B2	260	230	200	6-12	350	392	4-18	45	50	45	5	560	209	200	100	57	57	20	22
ST55	B3	340	310	270	6-13.5	400	442	4-20	55	60	55	6	635	215	250	100	77	77	20	24
ST70	B4	400	360	$\frac{320}{316}$	8-16	500	548	8-22	70	75	70	6	736	253	250	130	87	87	22	26
ST90	B5	490	450	400	12-18	550	600	12-22	90	100	90	7	805	341	300	170	107	107	26	28
ST100	B6	580	520	$\frac{455}{460}$	12-22	550	600	12-22	100	110	100	10	820	358	300	170	112	112	30	30
ST110	B7	650	590	520	12-22	650	700	16-27	110	120	110	12	1100	455	400	200	142	142	30	35
ST130	B8	880	800	680	12-37	810	880	20-27	130	140	130	12	1200	460	450	225	202	202	38	40

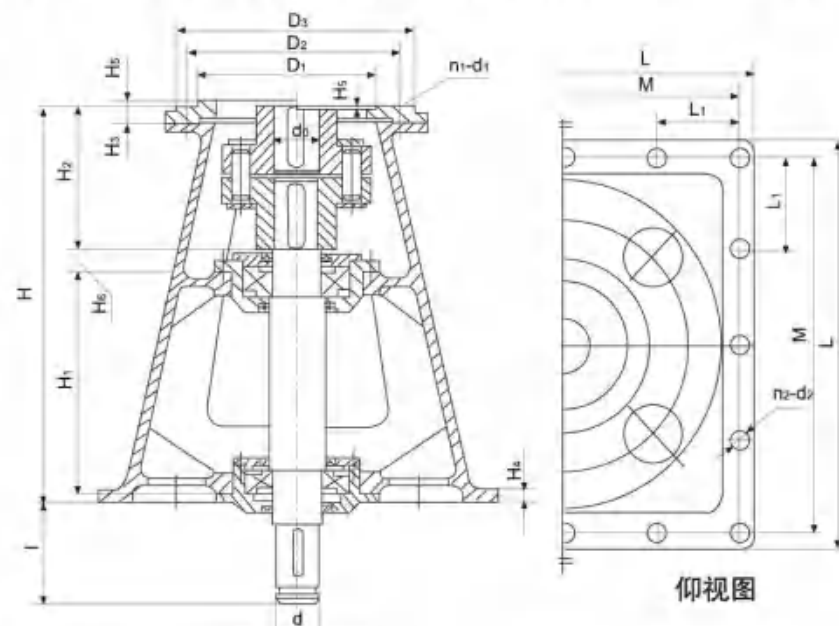
注: ① I 型为 JA 型联轴器联接
② II 型为夹壳式联轴器联接
③如用户对输出轴有特殊要求在订货时说明

I type is JA type coupling connection
II type is split coupling connection
Please show in order if you have special request to output shaft

(十四)FZ 型双支点方底板机架 FZ type double-support quadrate frame

本系列机架适用于常压容器，轴出端接口为方形底板，尺寸较大安装坚固、平稳。标定型号以减速机输出轴直径为主参数，A 表示与摆线针轮减速机相配，B 表示与齿轮减速机相配。机座供货时含短轴和联轴器。

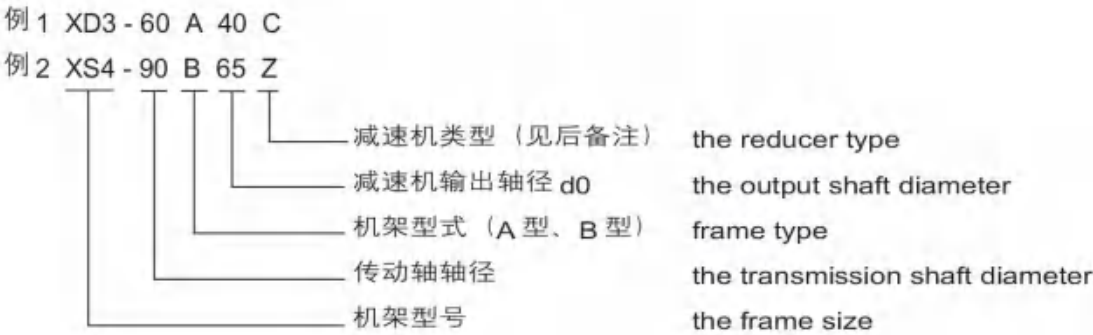
The series frame is used for normal press case. Outlet edge is quadrate, big dimension firm and balanced installation. Primary parameter of type is output shaft diameter. A is for cycloidal pin wheel decelerator, B is for gear reducer supplied frame includes short shaft and coupling.



FZ 型双支点底板机架主要参数及尺寸 Primary parameter and dimension

型 号 type	减速机接口 nominal dimension						输入轴接口 inlet edge					输出轴接口 outlet edge					重量 weight			重量 weight			
	H ₂	H ₃	H ₄	H ₅	H ₆	I	D ₁	D ₂	D ₃	d ₀	n ₁ -d ₁	L	L ₁	M	d	n ₂ -d ₂	H	H ₁	重量 weight	H	H ₁	重量 weight	
FZ25A				4			130	160	180	25	6-M8				30								
FZ30 ^A _B	130			5	80		140	160	190		4-M10								167			198	
		20	25	4		100	200	230	260	30	6-M12	400	170	340	35	8-14	630	380	kg	800	550	kg	
FZ35A				5			170	200	230	35	6-M10				40								
FZ40B	180			4	30		230	260	290	40	6-M12				45								
FZ45A				5			200	230	260	45	6-M10				50								
FZ50B				5			270	305	340	50	8-M16	585	175	525	55	12-18	750	440	383	950	640	460	
FZ55 ^A _B	220	20	30	6	45	130	270	310	340	55	6-M10				60								
				5			305				8-M16												
FZ65A				6			316	360	400	65	8-M12				70								
FZ70 ^A _B	280	25	30	6	50	200	316	360	400	70	8-M12	800	240	720	75	12-22	900	520	547	1100	720	656	
				5			320				8-M16												
FZ80 ^A _B	340			6	95		345	390	430	80	8-M16				85								
				5			360	410	460	80	8-M20												
FZ90A				7			400	450	490	90	12-M16	1060	250	1000	95	16-22	1060	600	980	1360	900	1100	
FZ95A		30	40	9	35	250	455	520	580	95					100								
FZ100 ^A _B	400			9			455	520	580	100	12-M20				110								
				5			470																
FZ110A				11			520	590	650	110	12-M20				120								
FZ130 ^A _B				11			680	800	880	130	12-M30	1260	300	1200	140	16-22	1200	668	1600	1600	1068	1896	
	450	40	45	9	45	300																	
FZ140				11			680	800	880	140	12-M30				150								
				9																			
FZ150				14											160								
				10																			
FZ160	520	45	50	14	50	340						1470	350	1400	180	20-27	1400	780	2000	1800	980	2395	
				10																			
FZ180	580	50	55	14	60	370						1670	400	1600	200	20-33	1600	900	2500	2000	1100	2800	
				10																			

型号标注方法及示例： Method and example of earmark



XD 型单支点机架主要参数及尺寸（公径直径 200、250、300）

Primary parameter and dimension of XD type single-support frame (nominal diameter 200, 250, 300)

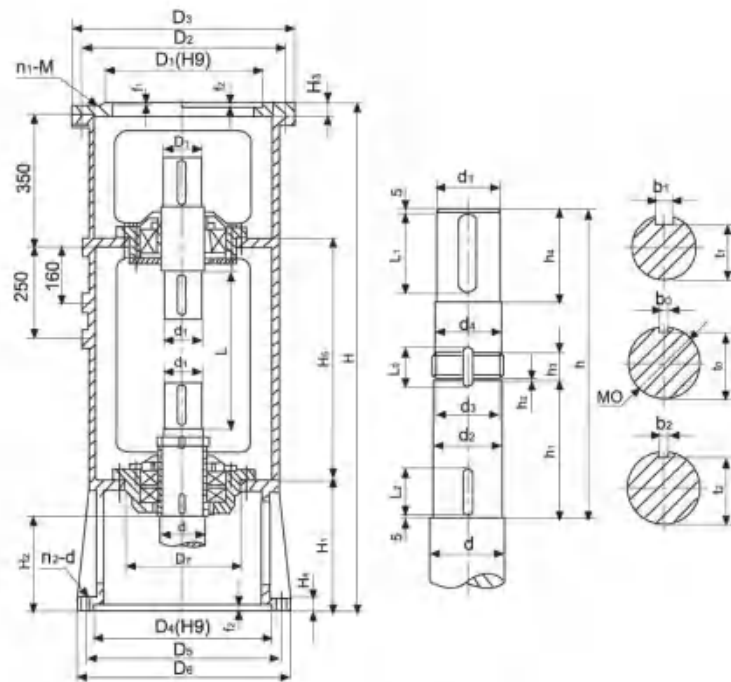
机架 型号 frame type	机架 公称 直径 nominal diameter	传动 轴轴 径 d shaft diameter	传动轴 上端轴 径 d ₁ ascending shaft diameter	减速机 输出轴 径 d ₀ output shaft diameter	输入 端接 口 inlet edge	输出端接口 outlet edge					外形及其它尺寸 shape and other dimension										轴承 型号 bearing type	重量 weight		
						D ₄ H ₉	D ₅	D ₆	n ₂ -d	f ₂	A 型			B 型			H ₃	H ₄	H ₅	D ₇		A 型	B 型	
											H	H ₁	H ₂	H	H ₁	H ₂								
XD1	200	30	20	12	见 后 表 see next list	245	295	340	8-22	6	575	220	415	730	295	495	17	24	85	180	46209	57	61	
			14	18									415			495					46209	57	61	
		40	30	25									415			495								
			30	30									556			681					46214	106	116	
XD2	250	60	45	35		290	350	395	12-22	6	750	268	556	995	388	681	20	30	100	245	46214	107	117	
				40									45			565					690	46216	104	114
				45									55			595					720	46217	153	164
				45									55			595					720	46217	153	164
		70	55	50		320	400	445	12-22	6	795	279	595	1040	399	720	20	30	100	280	46216	150	161	
				55									606			731					46216	149	160	
				60									65			60					65			
				60									65			60					65			

机架 型号 frame type	机架 公称 直径 nominal diameter	传动 轴轴 径 d shaft diameter	传动轴 上端轴 径 d ₁ ascending shaft diameter	传动轴轴端尺寸 shaft end dimension of drive shaft																	轴承 型号 bearing type	重量 weight	
				M ₀	d ₂ (h ₉)	d ₃	d ₄	h ₁	h ₂	h ₃	h ₄	L ₁	L ₀	L ₂	b ₂ (N ₉)	b ₀	b ₂ (N ₉)	t ₁	t ₀	t ₂			
XD1	200	30	20k6	M25x1.5	25	22.8	22	97	3	15	48	40	23	30	6	5	5	16.5	21	22			
		40	30k6	M35x1.5	35	32.8	32	97	3	15	48	40	24	30	8	6	6	26	31	31.5			
		50	40k6	M45x1.5	45	42.8	42	105	3	15	58	50	24	30	12	6	6	35	41	41.5			
XD2	250	60	45k6	M55x2	55	52	50	115	4	18	68	60	30	40	14	8	8	39.5	51	51			
		70	55m6	M65x2	65	62	60	125	4	18	83	75	30	40	16	8	8	49	61	61			
		60	45k6	M55x2	55	52	50	125	4	18	68	60	30	40	14	8	8	39.5	51	51			
XD3	300	70	55m6	M65x2	65	62	60	125	4	18	83	75	30	40	16	8	8	49	61	61			
		80	65m6	M75x2	75	72	70	139	4	18	98	90	32	50	18	10	10	58	69	70			

XD 型单支点机架主要参数及尺寸（公称直径 400、500、700、900）
Primary parameter and dimension of XD type single-support frame (nominal diameter 400, 500, 700, 900)

机架 型号 frame type	机架 公称 直径 nominal diameter	传动 轴轴 径 d shaft diameter	传动轴 上端轴 径 d ₁ ascending shaft diameter	减速机 输出轴 径 d ₀ output shaft diameter	输入 端接 口 inlet edge	输出端接口 outlet edge					外形及其它尺寸 shape and other dimension										轴承 型号 bearing type	重量 weight	
						D ₄ H ₉	D ₅	D ₆	n ₂ -d	f ₂	A 型			B 型			H ₃	H ₄	H ₅	D ₇		A 型	B 型
											H	H ₁	H ₂	H	H ₁	H ₂							
XD4	400	90	75	55	见 后 表 see next list	415	515	565	16-26	6	890	310	691	1105	420	806	25	35	100	310	46222	251	265
				65									691			806					46222	256	270
				70									691			806					46222	256	270
				65									691			806					46222	256	270
XD5	500	100	85	70		520	620	670	20-26	6	1075	369	821	1325	494	946	30	40	140	335	46224	409	435
				80									821			946					46224	405	431
				65									821			946					46224	405	431
				70									821			946					46224	405	431
XD6	700	120	100	90		670	780	830	28-26	6	1185	399	909	1415	514	1024	35	45	100	400	46228	729	766
				95									909			1024					46228	721	758
				100									909			1024					46228	721	758
				95									909			1024					46228	721	758
XD7	900	140	120	110		940	1070	1124	40-30	6.4	1320	440	1037	1560	570	1157	40	50	140	520	46232	985	874
				120									1037			1157					46234	1000	889
				140									1037			1157					46234	1000	889
				160									1037			1157					46234	1000	889
XD7	900	180	160	150	940	1070	1124	40-30	6.4	1320	440	1050	1560	570	1170	40	50	140	520	46232	985	874	
				160								1050			1170					46240	1010	899	
				160								1050			1170					46240	1010	899	
				160								1050			1170					46240	1010	899	
XD7	900	200	180	170	940	1070	1124	40-30	6.4	1320	440	1070	1560	570	1190	40	50	140	520	46244	1032	921	
				180								1070			1190					46244	1032	921	
				180								1070			1190					46244	1032	921	
				180								1070			1190					46244	1032	921	

机架 型号 frame type	机架公称直径 nominal diameter	传动轴轴径 d shaft diameter	传动轴轴径 d1 ascending shaft diameter	传动轴轴径尺寸 shaft end dimension of drive shaft																
				M ₀	d ₂ (h ₉)	d ₃	d ₄	h ₁	h ₂	h ₃	h ₄	L ₁	L ₀	L ₂	b ₁ (N ₀)	b ₀	b ₂ (N ₀)	t ₁	t ₀	t ₂
XD4	400	90	75m6	M85x2	85	82	80	162	4	18	108	100	32	50	20	10	10	67.5	79	80
		100	85m6	M95x2	95	92	90	166	4	22	118	110	38	50	22	12	12	76	89	90
		100	85m6	M95x2	95	92	90	166	4	22	118	110	38	50	22	12	12	76	89	90
XD5	500	110	90m6	M100x2	100	97	95	166	4	22	118	110	38	50	25	12	12	81	94	95
		120	100m6	M110x2	110	107	105	177	4	22	128	120	40	60	28	14	14	90	104	104.5
		130	110m6	M120x2	120	117	115	177	4	26	138	130	44	70	28	14	14	100	114	114.5
XD6	700	120	100m6	M110x2	110	107	105	177	4	22	128	120	40	60	28	14	14	90	104	104.5
		130	110m6	M120x2	120	117	115	177	4	26	138	130	44	70	28	14	14	100	114	114.5
		140	120m6	M130x2	130	127	125	197	4	26	153	145	44	70	32	14	14	109	122	124.5
XD7	900	160	140m6	M150x2	150	147	145	207	4	30	168	160	50	70	36	16	16	128	142	144
		180	160m6	M170x3	170	166	165	227	4	32	198	190	52	80	40	16	16	157	162	164
		200	180m6	M190x3	190	186	185	242	4	32	230	230	54	90	45	18	18	175	180	182



XD、XS 型机架输入端接口尺寸

Inlet edge dimension of XD, XS type frame

减速机输出轴径 d_0 Output shaft diameter	减速机类别代号 Reducer type	D1	D2	D3	n1-M	f1
12	Z	65	100	120	4-M6	3
14	Z	85	120	140	4-M8	3
18	Z	100	134	160	4-M8	4
25	Z	130	160	180	6-M8	4
	C	170	200	230	6-M10	3
30	C	200	230	260	6-M12	4
35	Z	170	200	230	6-M10	5
	C	230	260	290	6-M12	4
40	Z	170	200	230	6-M10	5
	C	230	260	290	6-M12	4
45	Z	200	230	260	6-M10	5
	C	230	260	290	6-M12	4
50	Z	200	230	260	6-M10	5
	C	270	305	340	8-M16	5
55	Z	270	310	340	6-M10	5
	C	270	305	340	8-M16	5
60	C	320	360	400	8-M16	5
	Z	316	360	400	8-M12	6
65	Z1	270	310	340	6-M10	5
	C	320	360	400	8-M16	5
70	Z	316	360	400	8-M16	6
	C	320/316	360	400	8-M16	5
80	Z	345	390	430	8-M16	6
	Z1	316	360	400	8-M12	6
90	C	360	410	460	8-M20	6
	Z	400	450	490	12-M16	8
95	C	360	410	460	8-M20	6
	Z	400	450	490	12-M16	8
100	Z1	455	520	580	12-M20	10
	Z	455	520	580	12-M20	10
110	C	470	520	580	12-M20	6
	Z	520	590	650	12-M20	12
120	C	470	520	580	12-M20	6
	Z	520	590	650	12-M20	12
130	C	550	600	660	12-M20	6
	Z	680	800	880	12-M30	12
140	C	680	800	880	12-M30	8
	Z	680	800	880	12-M30	12

注: 1.减速机类别代号 Z 为 X 系列、B 系列的摆线针轮减速机及 CFL 型行星齿轮减速机;C 为 LC 型、DC 型齿轮减速机。
2.其它类型减速机由我公司对接口加以调整后也可配套。
Note: 1. The code name Z is X series reducers. B series cycloid gear reducer. The C series are LC type, DC type gear reducer.
2. Another reducer could also be assembled after adjusting the connection.

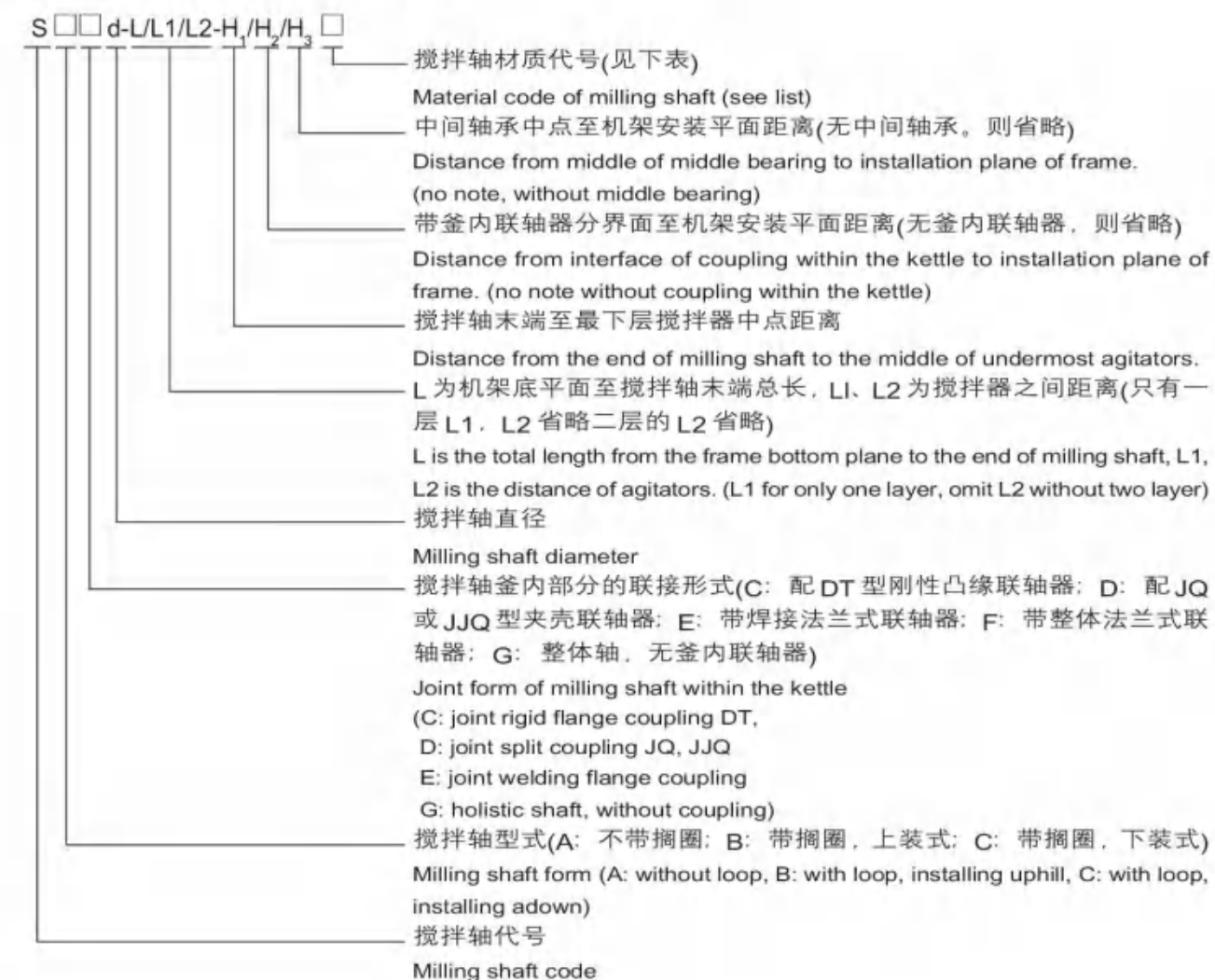
五、搅拌装置部件

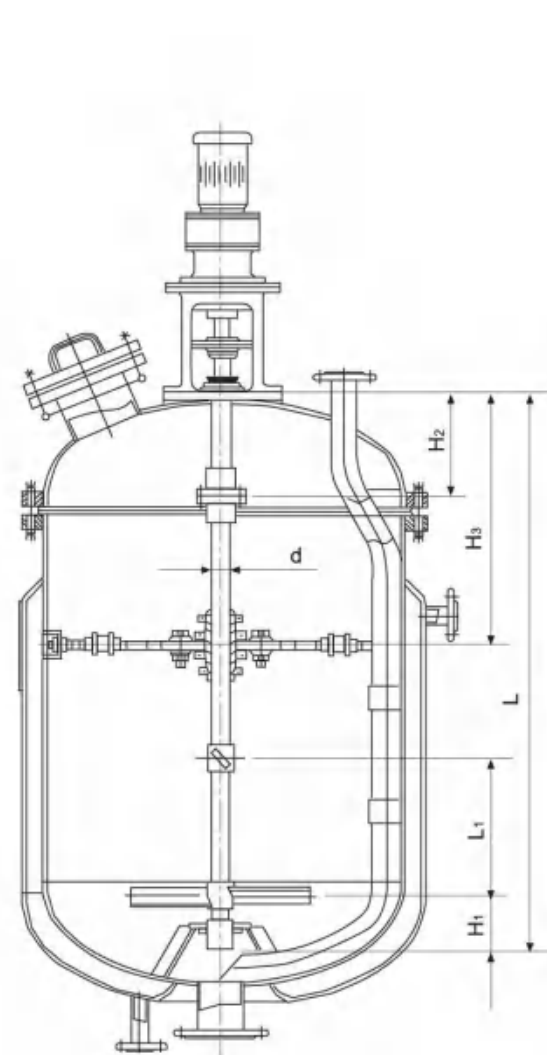
Parts of chum-dasher

为方便设计和安装调试, 在选用减速机、机架、联轴器、机械密封或填料箱、搅拌器后, 可根据搅拌轴主参数 d 和 L 来选择搅拌轴, 机架安装底平面以上的搅拌轴尺寸由我公司根据所选机架来协调, 无须设计单位出图。

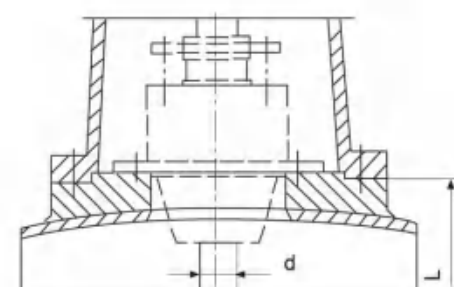
For be prone to design and install and debug decelerator, you can select milling shaft according to its primary parameter d and L , after selecting decelerator, frame, coupling, mechanical seals or packing box, agitators. The dimension of milling shaft over the installation bottom plane is harmonized by us according to the selected frame. It needn't design drawing by design department.

标注示例 Example of earmark

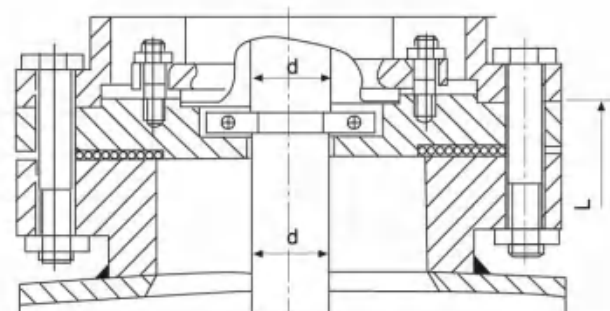




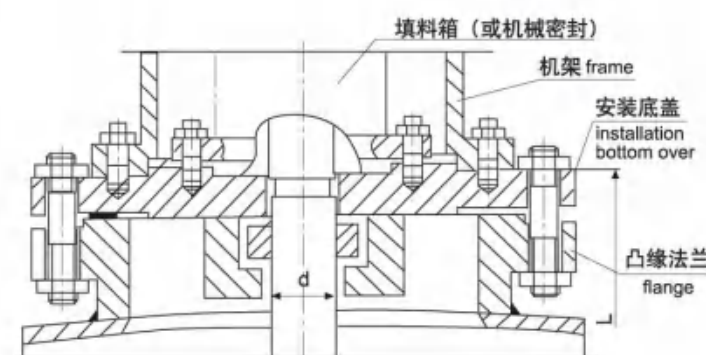
搅拌装置及SA型搅拌轴
Chum-dasher and SA type milling shaft



SA型搅拌轴
SA type milling shaft

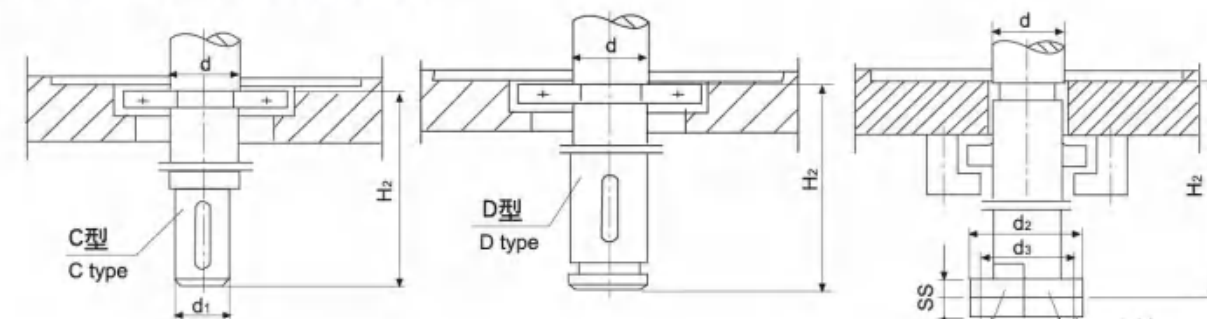


SB型搅拌轴
SB type milling shaft



SC型搅拌轴
SC type milling shaft

一、搅拌轴 Milling shaft



C型釜内轴头
C type shaft end within kettle

D型釜内轴头
D type shaft end within kettle

E、F型釜内轴头
E, F type shaft end within kettle

釜内轴头尺寸表肯 The list of shaft end within kettle

d	30	35	40	45	50	55	60	65	70	80	90	95	100	110	120	125	130	140	160	
d1	25	30	35	04	45	50	55	60	65	75	85	90	90	100	110	115	120	125	140	
d2	105	105	110	120	130	140	145	150	170	185	195	200	220	240	280	285	290	310	340	
d3	70	70	755	85	95	105	110	115	125	140	150	155	170	190	210	215	220	235	265	
S	25	25	25	25	25	30	30	30	35	35	35	35	40	40	45	45	45	50	60	
n-M1	6-M12				6-M16				6-M20			8-M20		8-M24		8-M30			8-M36	
H2	250	250	250	250	350	350	480	480	480	550	580	580	650	700	750	800	800	900	1000	

材料牌号表 The list of material sign

代号 code	S1	S2	S3	S4
材料牌号 material sign	0Cr18Ni11Ti(321)(1Cr18Ni9Ti)	0Cr17Ni10Mo2(316)	0Cr19Ni9(304)	00Cr19Ni11(304L)
代号 code	S5	S6	S7	S8
材料牌号 material sign	00Cr17Ni14Mo2(316L)	0Cr18Ni12Mo2Ti(316Ti)	0Cr18Ni14Mo2Cu(316Cu)	0Cr19Ni13Mo3(317)
代号 code	T1	T2	T3	T4
材料牌号 material sign	Q235-A	20-35	20R 20g	45(c.s)
代号 code	T5	T6	T7	T8
材料牌号 material sign	16Mng 16ZMnR	15MnVg 15MnVR	20Cr	40Cr
代号 code	T9	T10	-	-
材料牌号 material sign	HT200	ZG35	-	-
代号 code	LP	LR	LF	LG
材料牌号 material sign	喷 PO	衬橡胶	衬聚四氟乙稀	衬玻璃钢
代号 code	LF	TA	-	-
材料牌号 material sign	搪玻璃	Ti(钛材)	-	-
代号 code	F4	R	CF	BF
材料牌号 material sign	聚四氟乙稀	柔性有墨	碳纤维	芳纶纤维
代号 code	AE	AF	-	-
材料牌号 material sign	油浸石棉	石棉浸渍四氟	-	-

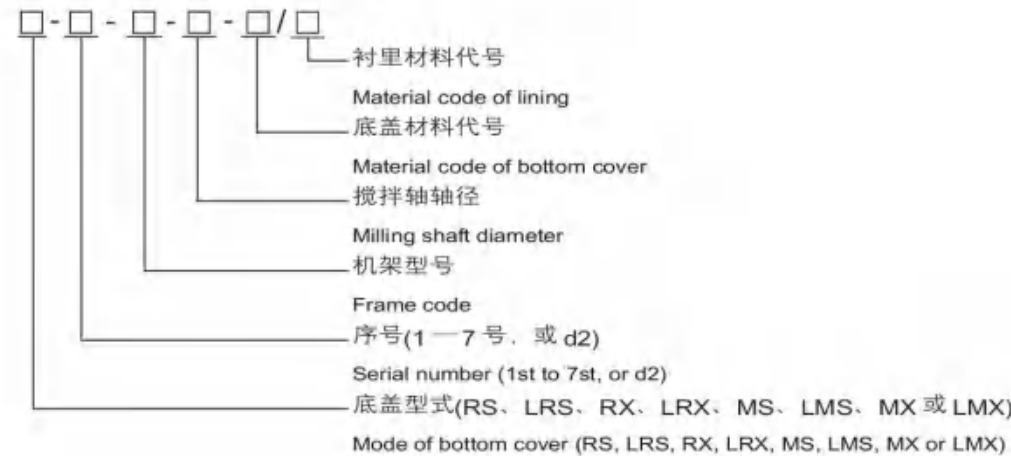
二、安装底盖与凸缘法兰 Installation bottom cover and male flange

本系列安装底盖可与 XD 型、XS 型机架及 2000 系列机械密封或 506、516、606、616 型填料箱相配套，底盖下面与 R 型、LR 型、M 型、LM 型凸缘法兰相配套，用户可根据 XD 型、XS 型机架及凸缘法兰的规格选择相应的安装底盖，若配用其他型号机架、机械密封、填料箱，只须将以下标记中序号换成外径 d_2 ，注上相应机架型号即可。

The series of installation bottom covers have been collocated with frame XD, XS and 2000 series mechanical seal or packing box 506, 516, 606, 616, collocated with male flange R, LR, M, LM under it. User can select relevant cover according to the size of frame XD, XS and male flange. It must only be changing outer diameter d_2 from the serial number next earmark, and note the relevant type of frame, if collocated other frame.

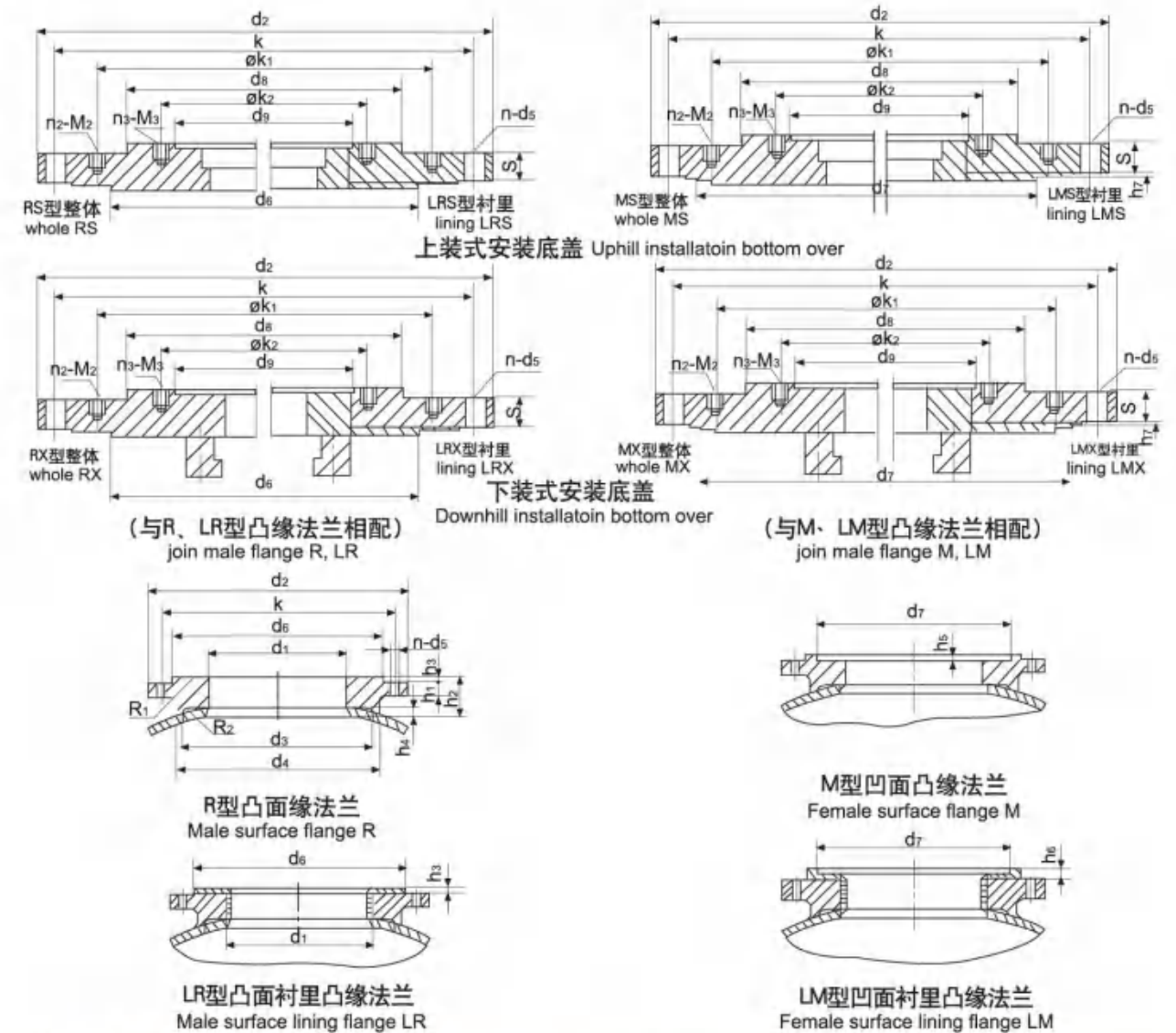
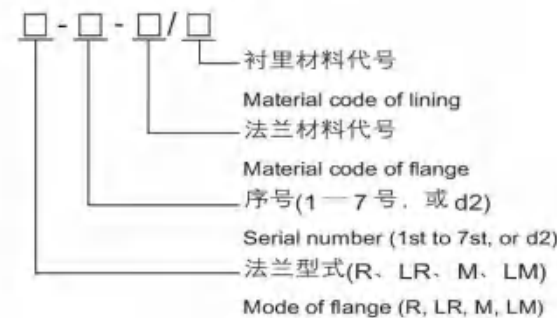
安装底盖标记示例：

Example of earmark installation bottom cover



凸缘法兰标记示例：

Example of earmark male flange



凸缘底盖厚度表(S) List of flange bottom cover ply

序号 No.	d_1	d_2	k	d_3	d_4	h_1	h_2	h_3	$n-d_5$	d_6	d_7	h_4	h_5	s	h_6	h_7	k_1	n_2-M_2	d_8	机架型号 frame type	搅拌轴直径 d milling shaft diameter	d_9	k_2	n_3-M_3
1	200	340	295	220	245	34	65	2	8-22	266	250	4	4.5	40	10	5.5	-	-	245	XD1 XS1	30,35,40	110	145	4-M16
2	245	395	350	280	300	36	65	2	12-22	320	304	4	4.5	40	10	5.5	-	-	290	XD2 XS2	45,50,55,60,65,70	176	210	8-M16
3	280	445	400	325	350	36	65	2	12-22	370	354	4	5	50	10	6	-	-	320	XD3 XS3	70,80,85	204	240	8-M20
4	410	565	515	430	455	42	85	2	16-27	481	462	4	5	50	12	6	400	12-M20	290	XD2 XS2	90,95,100	234	270	8-M20
																		-	415	XD4 XS4	110,120,125,130	260	295	8-M20
5	430	670	620	520	560	46	90	5	20-27	585	566	4	5	65	12	12	515	16-M24	415	XD4 XS4	140,150,160	313	350	12-M20
																		-	520	XD5 XS5				
6	530	830	780	670	720	60	100	8	28-30	745	725	4	5.5	82	12	6.5	515	16-M24	415	XD4 XS4				
																		-	520	XD5 XS5				
7	720	1045	990	800	920	68	110	15	36-30	945	925	4	5.5	100	12	6.5	620	20-M24	520	XD5 XS5				
																		-	670	XD6 XS6				

注：若配用其他型号机架及机械密封或填料箱，与其连接的相关尺寸： k_1 、 d_8 、 k_2 、 d_9 、 n_2-M_2 、 n_3-M_3 ，由我公司调整配套。 Note: The relevant joint dimension k_1 , d_8 , k_2 , d_9 , n_2-M_2 , n_3-M_3 is adjusted by us, if selecting other frame mode and mechanical seal or packing box.

(三)U 系列及 V 系列凸缘底盖 Flange bottom cover U and V

凸缘底盖将通常的凸缘法兰和安装底盖合二为一，直接作为容器与搅拌装置的接口。结构简单紧凑，节约材料，减轻重量，特别是分体凸缘底盖，内外凸缘可分别用不同材质、在大型设备中，明显节约了投资，实际中应用广泛。另外凸缘下面开有排液孔，有利于机封等部件的清洗和维护。凸缘底盖还可以根据搅拌轴搁轴的需要，制成上装式和下装式。

Flange bottom cover is united by usual flange and installation bottom cover, as interface of case with chum-dasher. Simple achieve structure, retrench material, lighten weight, especially fissile flange bottom cover and inside and outside flange can be selected different material apart. It is obvious to retrench investment about large equipments. It has broad application in practice. Otherwise hole letted liquid under the male edge is make for cleanouting and maintenance seal etc. Flange bottom cover can be made into installation [uphill and downhill] as required of milling shaft, too.

凸缘底盖标记方法 Earmark procedure

材料代号(若用两种材料，用斜杆隔开)
Material code (use "/" if two materials)

搅拌轴直径
Diameter of milling shaft

凸缘底盖厚度(见下表)
Ply of flange bottom cover (see next list)

凸缘底盖外径(根据机架底法兰外圆直径而定)
Outer diameter of flange bottom cover (confirm as circle diameter of frame bottom flange)

凸缘底盖分类代号: 整体平底(UA), 整体凹底(UB), 衬里整体平底(UC), 衬里整体凹底(UD), 分体平底(VA), 分体凹底(VB) 若制成上装式，则各成: UAS,UBS,UCS,UDS,VAS,VBS。若制成下装则各成: UAX,UBX,UCX,UDX, VAX,VBX。

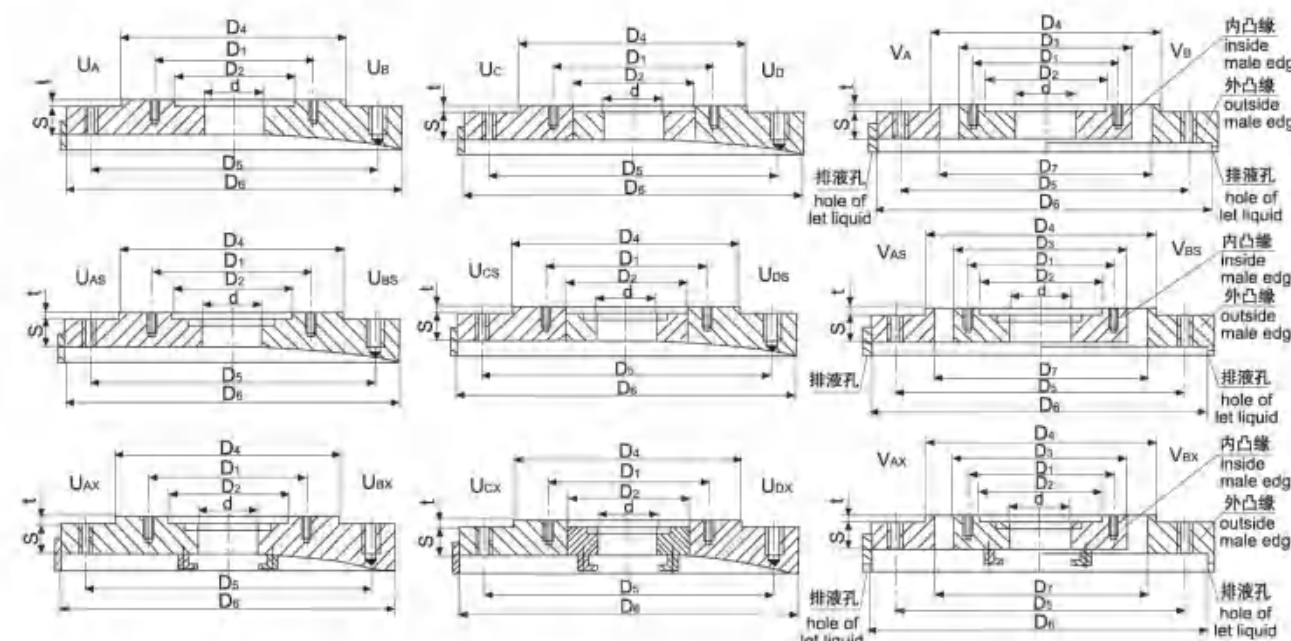
Code of flange bottom cover:
holistic even bottom (UA), holistic female bottom (UB), holistic even bottom with lining (UC), holistic female bottom with lining (UD), fissile even bottom (VA), fissile female bottom (VB). If be made into uphill installation, it is UAS, UBS, UCS, UDS, VAS, VBS. If be made into downhill installation, it is UAX, UBX, UCX, UDX, VAX, VBX.

选用说明 Instruction for selection

- 1、若配套本公司减速机、机械密封，只须按标记方法表示，及提供工艺操作的条件与容器封头的尺寸规格。也可以提供如图各尺寸数据及要求，委托我方加工生产。
- 2、在容器上焊接凸缘底盖时须保证其安装面和容器轴心线的垂直度，采用分体凸缘时先校正好外凸缘位置精度再焊接，待安装上支架等整体搅拌装置后，校正内凸缘位置，点焊固定后运转无误再按工艺要求焊接。
1. If joint with our decelerator and mechanical seal, it only is clenoted as earmark procedure, supply condition of technics working and size of case seal, or supply diameter data and request as figure to leave us producing.
2. It must assure plumb degree of installation surface and axes line of case when welding flange bottom cover in case. First proofreading place precision of male edge then welding. After frame and whole chum-dasher is installed, we proofread male edge place. We weld as technics request without error working after welding for fixation.

凸缘底盖厚度表(S) List of flange bottom cover ply

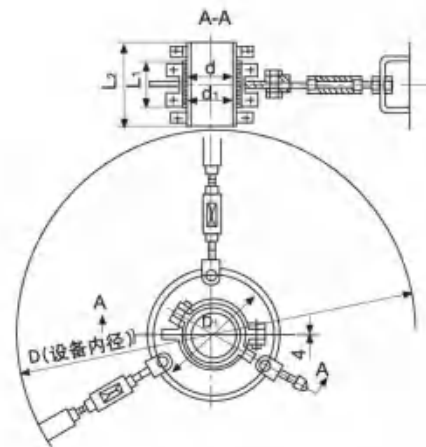
公称压力 nominal pressure	>300~400	>400~500	>500~600	>600~700	>700~800	>800~1000
-1~0.1MPa	30	30	40	50	60	80
<0.6MPa	35	40	50	65	80	100
<0.16MPa	40	50	60	82	100	120



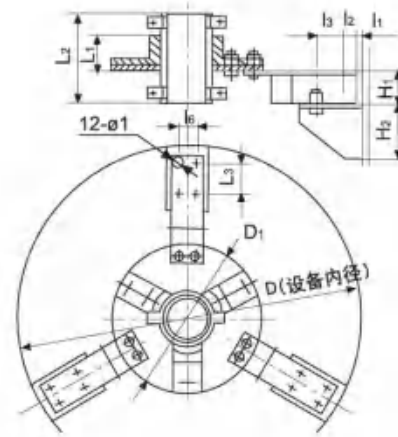
(四)中间轴承 Middle bearing

SL、SC、JC、SD 型主要尺寸 Primary dimension of SL, SC, JC, SD type

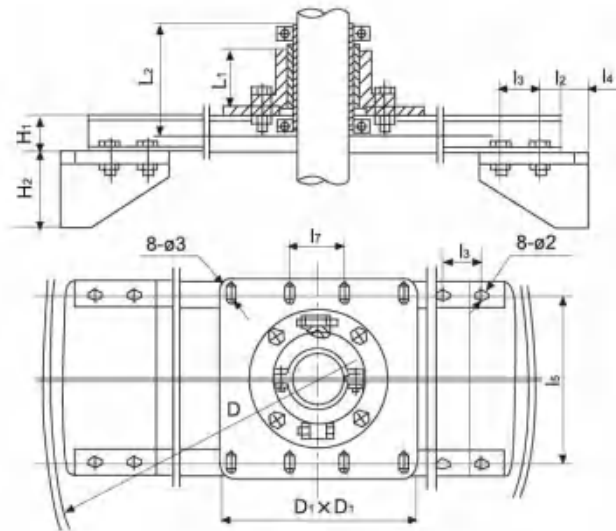
D	d1	L ₁	L ₂	L ₃	D ₁	H ₁	H ₂	L ₁	L ₂	L ₃	L ₄	L ₅	L ₆	L ₇	L ₈	L ₉	L ₁₀	L ₁₁	L ₁₂	L ₁₃	L ₁₄	L ₁₅	L ₁₆	L ₁₇	L ₁₈	L ₁₉	L ₂₀	L ₂₁	L ₂₂	L ₂₃	L ₂₄	L ₂₅	L ₂₆	L ₂₇	L ₂₈	L ₂₉	L ₃₀	L ₃₁	L ₃₂	L ₃₃	L ₃₄	L ₃₅	L ₃₆	L ₃₇	L ₃₈	L ₃₉	L ₄₀	L ₄₁	L ₄₂	L ₄₃	L ₄₄	L ₄₅	L ₄₆	L ₄₇	L ₄₈	L ₄₉	L ₅₀	L ₅₁	L ₅₂	L ₅₃	L ₅₄	L ₅₅	L ₅₆	L ₅₇	L ₅₈	L ₅₉	L ₆₀	L ₆₁	L ₆₂	L ₆₃	L ₆₄	L ₆₅	L ₆₆	L ₆₇	L ₆₈	L ₆₉	L ₇₀	L ₇₁	L ₇₂	L ₇₃	L ₇₄	L ₇₅	L ₇₆	L ₇₇	L ₇₈	L ₇₉	L ₈₀	L ₈₁	L ₈₂	L ₈₃	L ₈₄	L ₈₅	L ₈₆	L ₈₇	L ₈₈	L ₈₉	L ₉₀	L ₉₁	L ₉₂	L ₉₃	L ₉₄	L ₉₅	L ₉₆	L ₉₇	L ₉₈	L ₉₉	L ₁₀₀	L ₁₀₁	L ₁₀₂	L ₁₀₃	L ₁₀₄	L ₁₀₅	L ₁₀₆	L ₁₀₇	L ₁₀₈	L ₁₀₉	L ₁₁₀	L ₁₁₁	L ₁₁₂	L ₁₁₃	L ₁₁₄	L ₁₁₅	L ₁₁₆	L ₁₁₇	L ₁₁₈	L ₁₁₉	L ₁₂₀	L ₁₂₁	L ₁₂₂	L ₁₂₃	L ₁₂₄	L ₁₂₅	L ₁₂₆	L ₁₂₇	L ₁₂₈	L ₁₂₉	L ₁₃₀	L ₁₃₁	L ₁₃₂	L ₁₃₃	L ₁₃₄	L ₁₃₅	L ₁₃₆	L ₁₃₇	L ₁₃₈	L ₁₃₉	L ₁₄₀	L ₁₄₁	L ₁₄₂	L ₁₄₃	L ₁₄₄	L ₁₄₅	L ₁₄₆	L ₁₄₇	L ₁₄₈	L ₁₄₉	L ₁₅₀	L ₁₅₁	L ₁₅₂	L ₁₅₃	L ₁₅₄	L ₁₅₅	L ₁₅₆	L ₁₅₇	L ₁₅₈	L ₁₅₉	L ₁₆₀	L ₁₆₁	L ₁₆₂	L ₁₆₃	L ₁₆₄	L ₁₆₅	L ₁₆₆	L ₁₆₇	L ₁₆₈	L ₁₆₉	L ₁₇₀	L ₁₇₁	L ₁₇₂	L ₁₇₃	L ₁₇₄	L ₁₇₅	L ₁₇₆	L ₁₇₇	L ₁₇₈	L ₁₇₉	L ₁₈₀	L ₁₈₁	L ₁₈₂	L ₁₈₃	L ₁₈₄	L ₁₈₅	L ₁₈₆	L ₁₈₇	L ₁₈₈	L ₁₈₉	L ₁₉₀	L ₁₉₁	L ₁₉₂	L ₁₉₃	L ₁₉₄	L ₁₉₅	L ₁₉₆	L ₁₉₇	L ₁₉₈	L ₁₉₉	L ₂₀₀	L ₂₀₁	L ₂₀₂	L ₂₀₃	L ₂₀₄	L ₂₀₅	L ₂₀₆	L ₂₀₇	L ₂₀₈	L ₂₀₉	L ₂₁₀	L ₂₁₁	L ₂₁₂	L ₂₁₃	L ₂₁₄	L ₂₁₅	L ₂₁₆	L ₂₁₇	L ₂₁₈	L ₂₁₉	L ₂₂₀	L ₂₂₁	L ₂₂₂	L ₂₂₃	L ₂₂₄	L ₂₂₅	L ₂₂₆	L ₂₂₇	L ₂₂₈	L ₂₂₉	L ₂₃₀	L ₂₃₁	L ₂₃₂	L ₂₃₃	L ₂₃₄	L ₂₃₅	L ₂₃₆	L ₂₃₇	L ₂₃₈	L ₂₃₉	L ₂₄₀	L ₂₄₁	L ₂₄₂	L ₂₄₃	L ₂₄₄	L ₂₄₅	L ₂₄₆	L ₂₄₇	L ₂₄₈	L ₂₄₉	L ₂₅₀	L ₂₅₁	L ₂₅₂	L ₂₅₃	L ₂₅₄	L ₂₅₅	L ₂₅₆	L ₂₅₇	L ₂₅₈	L ₂₅₉	L ₂₆₀	L ₂₆₁	L ₂₆₂	L ₂₆₃	L ₂₆₄	L ₂₆₅	L ₂₆₆	L ₂₆₇	L ₂₆₈	L ₂₆₉	L ₂₇₀	L ₂₇₁	L ₂₇₂	L ₂₇₃	L ₂₇₄	L ₂₇₅	L ₂₇₆	L ₂₇₇	L ₂₇₈	L ₂₇₉	L ₂₈₀	L ₂₈₁	L ₂₈₂	L ₂₈₃	L ₂₈₄	L ₂₈₅	L ₂₈₆	L ₂₈₇	L ₂₈₈	L ₂₈₉	L ₂₉₀	L ₂₉₁	L ₂₉₂	L ₂₉₃	L ₂₉₄	L ₂₉₅	L ₂₉₆	L ₂₉₇	L ₂₉₈	L ₂₉₉	L ₃₀₀	L ₃₀₁	L ₃₀₂	L ₃₀₃	L ₃₀₄	L ₃₀₅	L ₃₀₆	L ₃₀₇	L ₃₀₈	L ₃₀₉	L ₃₁₀	L ₃₁₁	L ₃₁₂	L ₃₁₃	L ₃₁₄	L ₃₁₅	L ₃₁₆	L ₃₁₇	L ₃₁₈	L ₃₁₉	L ₃₂₀	L ₃₂₁	L ₃₂₂	L ₃₂₃	L ₃₂₄	L ₃₂₅	L ₃₂₆	L ₃₂₇	L ₃₂₈	L ₃₂₉	L ₃₃₀	L ₃₃₁	L ₃₃₂	L ₃₃₃	L ₃₃₄	L ₃₃₅	L ₃₃₆	L ₃₃₇	L ₃₃₈	L ₃₃₉	L ₃₄₀	L ₃₄₁	L ₃₄₂	L ₃₄₃	L ₃₄₄	L ₃₄₅	L ₃₄₆	L ₃₄₇	L ₃₄₈	L ₃₄₉	L ₃₅₀	L ₃₅₁	L ₃₅₂	L ₃₅₃	L ₃₅₄	L ₃₅₅	L ₃₅₆	L ₃₅₇	L ₃₅₈	L ₃₅₉	L ₃₆₀	L ₃₆₁	L ₃₆₂	L ₃₆₃	L ₃₆₄	L ₃₆₅	L ₃₆₆	L ₃₆₇	L ₃₆₈	L ₃₆₉	L ₃₇₀	L ₃₇₁	L ₃₇₂	L ₃₇₃	L ₃₇₄	L ₃₇₅	L ₃₇₆	L ₃₇₇	L ₃₇₈	L ₃₇₉	L ₃₈₀	L ₃₈₁	L ₃₈₂	L ₃₈₃	L ₃₈₄	L ₃₈₅	L ₃₈₆	L ₃₈₇	L ₃₈₈	L ₃₈₉	L ₃₉₀	L ₃₉₁	L ₃₉₂	L ₃₉₃	L ₃₉₄	L ₃₉₅	L ₃₉₆	L ₃₉₇	L ₃₉₈	L ₃₉₉	L ₄₀₀	L ₄₀₁	L ₄₀₂	L ₄₀₃	L ₄₀₄	L ₄₀₅	L ₄₀₆	L ₄₀₇	L ₄₀₈	L ₄₀₉	L ₄₁₀	L ₄₁₁	L ₄₁₂	L ₄₁₃	L ₄₁₄	L ₄₁₅	L ₄₁₆	L ₄₁₇	L ₄₁₈	L ₄₁₉	L ₄₂₀	L ₄₂₁	L ₄₂₂	L ₄₂₃	L ₄₂₄	L ₄₂₅	L ₄₂₆	L ₄₂₇	L ₄₂₈	L ₄₂₉	L ₄₃₀	L ₄₃₁	L ₄₃₂	L ₄₃₃	L ₄₃₄	L ₄₃₅	L ₄₃₆	L ₄₃₇	L ₄₃₈	L ₄₃₉	L ₄₄₀	L ₄₄₁	L ₄₄₂	L ₄₄₃	L ₄₄₄	L ₄₄₅	L ₄₄₆	L ₄₄₇	L ₄₄₈	L ₄₄₉	L ₄₅₀	L ₄₅₁	L ₄₅₂	L ₄₅₃	L ₄₅₄	L ₄₅₅	L ₄₅₆	L ₄₅₇	L ₄₅₈	L ₄₅₉	L ₄₆₀	L ₄₆₁	L ₄₆₂	L ₄₆₃	L ₄₆₄	L ₄₆₅	L ₄₆₆	L ₄₆₇	L ₄₆₈	L ₄₆₉	L ₄₇₀	L ₄₇₁	L ₄₇₂	L ₄₇₃	L ₄₇₄	L ₄₇₅	L ₄₇₆	L ₄₇₇	L ₄₇₈	L ₄₇₉	L ₄₈₀	L ₄₈₁	L ₄₈₂	L ₄₈₃	L ₄₈₄	L ₄₈₅	L ₄₈₆	L ₄₈₇	L ₄₈₈	L ₄₈₉	L ₄₉₀	L ₄₉₁	L ₄₉₂	L ₄₉₃	L ₄₉₄	L ₄₉₅	L ₄₉₆	L ₄₉₇	L ₄₉₈	L ₄₉₉	L ₅₀₀	L ₅₀₁	L ₅₀₂	L ₅₀₃	L ₅₀₄	L ₅₀₅	L ₅₀₆	L ₅₀₇	L ₅₀₈	L ₅₀₉	L ₅₁₀	L ₅₁₁	L ₅₁₂	L ₅₁₃	L ₅₁₄	L ₅₁₅	L ₅₁₆	L ₅₁₇	L ₅₁₈	L ₅₁₉	L ₅₂₀	L ₅₂₁	L ₅₂₂	L ₅₂₃	L ₅₂₄	L ₅₂₅	L ₅₂₆	L ₅₂₇	L ₅₂₈	L ₅₂₉	L ₅₃₀	L ₅₃₁	L ₅₃₂	L ₅₃₃	L ₅₃₄	L ₅₃₅	L ₅₃₆	L ₅₃₇	L ₅₃₈	L ₅₃₉	L ₅₄₀	L ₅₄₁	L ₅₄₂	L ₅₄₃	L ₅₄₄	L ₅₄₅	L ₅₄₆	L ₅₄₇	L ₅₄₈	L ₅₄₉	L ₅₅₀	L ₅₅₁	L ₅₅₂	L ₅₅₃	L ₅₅₄	L ₅₅₅	L ₅₅₆	L ₅₅₇	L ₅₅₈	L ₅₅₉	L ₅₆₀	L ₅₆₁	L ₅₆₂	L ₅₆₃	L ₅₆₄	L ₅₆₅	L ₅₆₆	L ₅₆₇	L ₅₆₈	L ₅₆₉	L ₅₇₀	L ₅₇₁	L ₅₇₂	L ₅₇₃	L ₅₇₄	L ₅₇₅	L ₅₇₆	L ₅₇₇	L ₅₇₈	L ₅₇₉	L ₅₈₀	L ₅₈₁	L ₅₈₂	L ₅₈₃	L ₅₈₄	L ₅₈₅	L ₅₈₆	L ₅₈₇	L ₅₈₈	L ₅₈₉	L ₅₉₀	L ₅₉₁	L ₅₉₂	L ₅₉₃	L ₅₉₄	L ₅₉₅	L ₅₉₆	L ₅₉₇	L ₅₉₈	L ₅₉₉	L ₆₀₀	L ₆₀₁	L ₆₀₂	L ₆₀₃	L ₆₀₄	L ₆₀₅	L ₆₀₆	L ₆₀₇	L ₆₀₈	L ₆₀₉	L ₆₁₀	L ₆₁₁	L ₆₁₂	L ₆₁₃	L ₆₁₄	L ₆₁₅	L ₆₁₆	L ₆₁₇	L ₆₁₈	L ₆₁₉	L ₆₂₀	L ₆₂₁	L ₆₂₂	L ₆₂₃	L ₆₂₄	L ₆₂₅	L ₆₂₆	L ₆₂₇	L ₆₂₈	L ₆₂₉	L ₆₃₀	L ₆₃₁	L ₆₃₂	L ₆₃₃	L ₆₃₄	L ₆₃₅	L ₆₃₆	L ₆₃₇	L ₆₃₈	L ₆₃₉	L ₆₄₀	L ₆₄₁	L ₆₄₂	L ₆₄₃	L ₆₄₄	L ₆₄₅	L ₆₄₆	L ₆₄₇	L ₆₄₈	L ₆₄₉	L ₆₅₀	L ₆₅₁	L ₆₅₂	L ₆₅₃	L ₆₅₄	L ₆₅₅	L ₆₅₆	L ₆₅₇	L ₆₅₈	L ₆₅₉	L ₆₆₀	L ₆₆₁	L ₆₆₂	L ₆₆₃	L ₆₆₄	L ₆₆₅	L ₆₆₆	L ₆₆₇	L ₆₆₈	L ₆₆₉	L ₆₇₀	L ₆₇₁	L ₆₇₂	L ₆₇₃	L ₆₇₄	L ₆₇₅	L ₆₇₆	L ₆₇₇	L ₆₇₈	L ₆₇₉	L ₆₈₀	L ₆₈₁	L ₆₈₂	L ₆₈₃	L ₆₈₄	L ₆₈₅	L ₆₈₆	L ₆₈₇	L ₆₈₈	L ₆₈₉	L ₆₉₀	L ₆₉₁	L ₆₉₂	L ₆₉₃	L ₆₉₄	L ₆₉₅	L ₆₉₆	L ₆₉₇	L ₆₉₈	L ₆₉₉	L ₇₀₀	L ₇₀₁	L ₇₀₂	L ₇₀₃	L ₇₀₄	L ₇₀₅	L ₇₀₆	L ₇₀₇	L ₇₀₈	L ₇₀₉	L ₇₁₀	L ₇₁₁	L ₇₁₂	L ₇₁₃	L ₇₁₄	L ₇₁₅	L ₇₁₆	L ₇₁₇	L ₇₁₈	L ₇₁₉	L ₇₂₀	L ₇₂₁	L ₇₂₂	L ₇₂₃	L ₇₂₄	L ₇₂₅	L ₇₂₆	L ₇₂₇	L ₇₂₈	L ₇₂₉	L ₇₃₀	L ₇₃₁	L ₇₃₂	L ₇₃₃	L ₇₃₄	L ₇₃₅	L ₇₃₆	L ₇₃₇	L ₇₃₈	L ₇₃₉	L ₇₄₀	L ₇₄₁	L ₇₄₂	L ₇₄₃	L ₇₄₄	L ₇₄₅	L ₇₄₆	L ₇₄₇	L ₇₄₈	L ₇₄₉	L ₇₅₀	L ₇₅₁	L ₇₅₂	L ₇₅₃	L ₇₅₄	L ₇₅₅	L ₇₅₆	L ₇₅₇	L ₇₅₈	L ₇₅₉	L ₇₆₀	L ₇₆₁	L ₇₆₂	L ₇₆₃	L ₇₆₄	L ₇₆₅	L ₇₆₆	L ₇₆₇	L ₇₆₈	L ₇₆₉	L ₇₇₀	L ₇₇₁	L ₇₇₂	L ₇₇₃	L ₇₇₄	L ₇₇₅	L ₇₇₆	L ₇₇₇	L ₇₇₈	L ₇₇₉	L ₇₈₀	L ₇₈₁	L ₇₈₂	L ₇₈₃	L ₇₈₄	L ₇₈₅	L ₇₈₆	L ₇₈₇	L ₇₈₈	L ₇₈₉	L ₇₉₀	L ₇₉₁	L ₇₉₂	L ₇₉₃	L ₇₉₄	L ₇₉₅	L ₇₉₆	L ₇₉₇	L ₇₉₈	L ₇₉₉	L ₈₀₀	L ₈₀₁	L ₈₀₂	L ₈₀₃	L ₈₀₄	L ₈₀₅	L ₈₀₆	L ₈₀₇	L ₈₀₈	L ₈₀₉	L ₈₁₀	L ₈₁₁	L ₈₁₂	L ₈₁₃	L ₈₁₄	L ₈₁₅	L ₈₁₆	L ₈₁₇	L ₈₁₈	L ₈₁₉	L ₈₂₀	L ₈₂₁	L ₈₂₂	L ₈₂₃	L ₈₂₄	L ₈₂₅	L ₈₂₆	L ₈₂₇	L ₈₂₈	L ₈₂₉	L ₈₃₀	L ₈₃₁	L ₈₃₂	L ₈₃₃	L ₈₃₄	L ₈₃₅	L ₈₃₆	L ₈₃₇	L ₈₃₈	L ₈₃₉	L ₈₄₀	L ₈₄₁	L ₈₄₂	L ₈₄₃	L ₈₄₄	L ₈₄₅	L ₈₄₆	L ₈₄₇	L ₈₄₈	L ₈₄₉	L ₈₅₀	L ₈₅₁	L ₈₅₂	L ₈₅₃	L ₈₅₄	L ₈₅₅	L ₈₅₆	L ₈₅₇	L ₈₅₈	L ₈₅₉	L ₈₆₀	L ₈₆₁	L ₈₆₂	L ₈₆₃	L ₈₆₄	L ₈₆₅	L ₈₆₆	L ₈₆₇	L ₈₆₈	L ₈₆₉	L ₈₇₀	L ₈₇₁	L ₈₇₂	L ₈₇₃	L ₈₇₄	L ₈₇₅	L ₈₇₆	L ₈₇₇	L ₈₇₈	L ₈₇₉	L ₈₈₀	L ₈₈₁	L ₈₈₂	L ₈₈₃	L ₈₈₄	L ₈₈₅	L ₈₈₆	L ₈₈₇	L ₈₈₈	L ₈₈₉	L ₈₉₀	L ₈₉₁	L ₈₉₂	L ₈₉₃	L ₈₉₄	L ₈₉₅	L ₈₉₆	L ₈₉₇	L ₈₉₈	L ₈₉₉	L ₉₀₀	L ₉₀₁	L ₉₀₂	L ₉₀₃	L ₉₀₄	L ₉₀₅	L ₉₀₆	L ₉₀₇	L ₉₀₈	L ₉₀₉	L ₉₁₀	L ₉₁₁	L ₉₁₂	L ₉₁₃	L ₉₁₄	L ₉₁₅	L ₉₁₆	L ₉₁₇	L ₉₁₈	L ₉₁₉	L ₉₂₀	L ₉₂₁	L ₉₂₂	L ₉₂₃	L ₉₂₄	L ₉₂₅	L ₉₂₆	L ₉₂₇	L ₉₂₈	L ₉₂₉	L ₉₃₀	L ₉₃₁	L ₉₃₂	L ₉₃₃	L ₉₃₄	L ₉₃₅	L ₉₃₆	L ₉₃₇	L ₉₃₈	L ₉₃₉	L ₉₄₀	L ₉₄₁	L ₉₄₂	L ₉₄₃	L ₉₄₄	L ₉₄₅	L ₉₄₆	L ₉₄₇	L ₉₄₈	L ₉₄₉	L ₉₅₀	L ₉₅₁	L ₉₅₂	L ₉₅₃	L ₉₅₄	L _{955</}
---	----	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	-----------------------



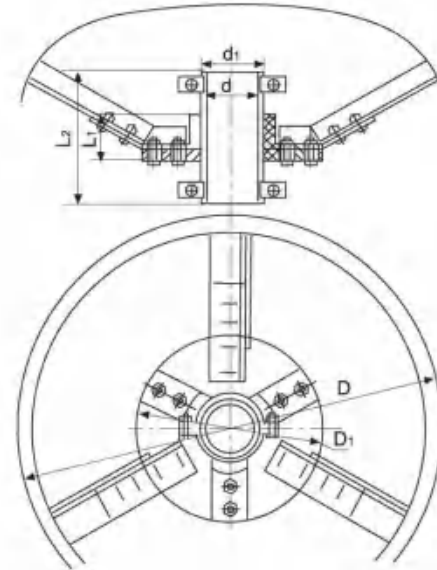
SL型三拉杆式中间轴承
Three-pole middle bearing SL



SC型三槽钢中间轴承三轴瓦式
Three channel steel middle bearing SC, three axial tile



JC型#字槽钢式中间轴承
character channel steel middle bearing JC

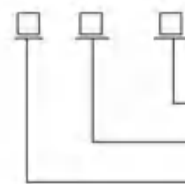


SD型三拉杆式吊挂中间轴承
Three-pole pensile middle bearing SD

(五)底轴承 Bottom bearing

底轴承分三足式(SZ型)、底部法兰式(DL型)、迷宫三足式(MSZ型)、迷宫底法兰式(MDL型)四种、标定型号如下:

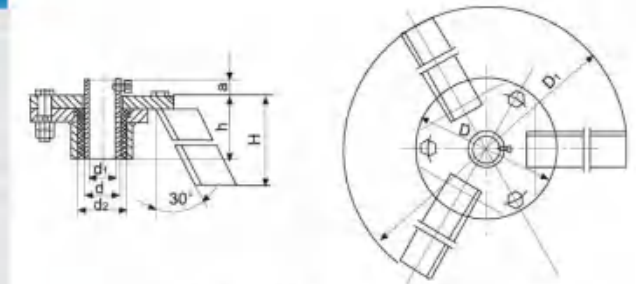
Bottom bearing includes three-foot (SZ), bottom flange (DL), maze three-foot (MSZ), maze flange (MDL) four types, mode of earmark as follows:



主体材料代号 Primary material code
搅拌轴直径 d Diameter of milling shaft d
型号(分 SZ、DL、MSZ、MDL 四种) Type (SZ, DL, MSZ, MDL)

SZ 型主要尺寸 Primary dimension of SZ type

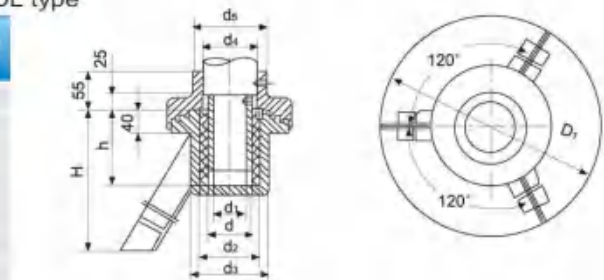
公称轴径 d nominal axes diameter	d ₁	d ₂	D	D ₁	a	h	H	重量(kg) weight
30	22	45	140	363	20	50	160	4.33
40	32	55	160	412	20	60	180	5.49
50	40	65	180	455	20	70	200	6.9
65	50	85	200	498	20	90	230	14
80	65	100	230	563	30	105	250	18
95	75	115	250	617	45	120	280	22
110	90	130	270	683	45	135	300	26.5
125	105	145	310	790	45	155	350	34
140	115	165	360	893	45	165	390	49
165	140	190	400	1040	45	165	430	67
190	165	215	440	1040	50	220	450	90



SZ型底轴承 Bottom bearing SZ

DL、MDL 型主要尺寸 Primary dimension of DL, MDL type

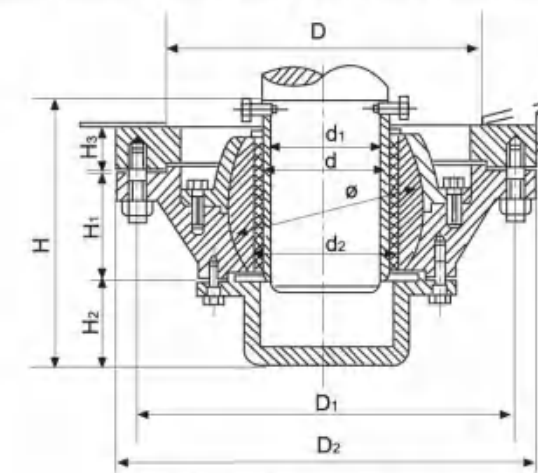
公称轴径 d nominal axes diameter	d ₁	d ₂	D	D ₁	h	H	重量(kg) weight
30	22	45	135	157	35	105	5.1
40	32	55	145	178	45	125	7.1
50	40	65	156	211	55	145	9.6
65	50	85	180	265	70	175	16
80	65	100	195	309	85	195	22
95	75	115	210	359	100	225	30
110	90	130	225	397	115	245	39
125	105	145	245	430	130	260	53
140	115	165	265	500	155	300	69
165	140	190	295	542	165	310	88
190	165	215	320	600	190	340	120



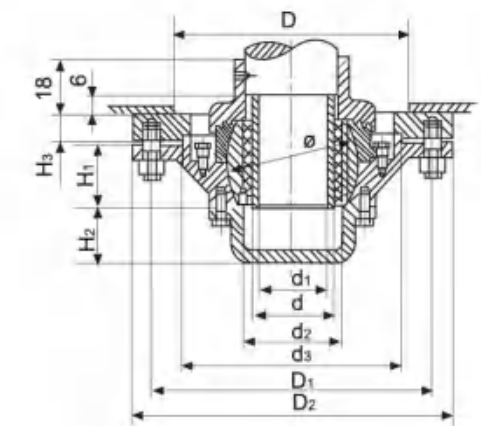
MSZ型底轴承 Bottom bearing MSZ

MSZ 型主要尺寸 Primary dimension of MSZ type

公称轴径 d nominal axes diameter	D	D ₁	D ₂	d ₁	d ₂	d ₃	I	H ₁	H ₂	H ₃	-H	螺栓 8mm No. 直径 x 长度 diameter x length		重量(kg) weight
65	220	265	310	50	80	225	120	50	56	32	174	8	M16 x 50	43.8
80	240	285	330	65	100	245	140	54	66	32	193	8	M16 x 50	53
95	260	330	375	80	115	255	155	72	74	32	224	12	M16 x 65	78
110	295	385	430	95	130	300	188	82	84	40	249	12	M20 x 85	108
125	315	395	440	105	145	363	210	90	90	40	280	12	M20 x 85	155
140	350	445	490	115	165	413	238	100	95	45	300	12	M20 x 95	189
165	385	495	540	140	190	463	270	110	100	45	320	16	M20 x 100	227
190	405	495	540	165	215	463	296	120	105	50	340	16	M20 x 110	270



DL型底轴承 Bottom bearing DL



MDL型底轴承 Bottom bearing MDL

(六) 搅拌器 Agitators

本公司生产近 30 类计 140 多种搅拌器，从最常见的(包括已有的 HB5 标准，SB90 标准各种搅拌器)到各种复杂形状或特殊用途的搅拌器。可按 H / T2123-91 标准的各种规格尺寸系列制造；也可根据用户生产工艺需求，代为设计制造各种特殊要求、特殊规格或特殊用途的搅拌器。

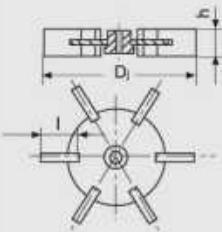
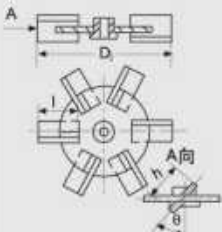
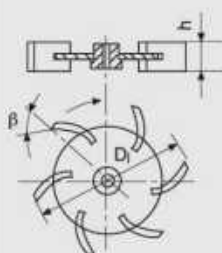
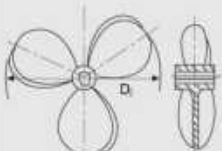
1. 搅拌器的形式、主要尺寸特性参数

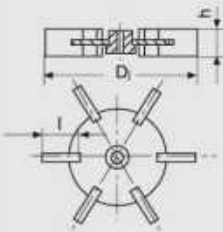
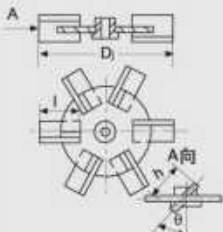
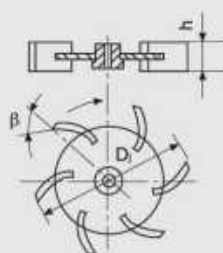
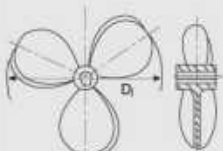
搅拌器类型	搅拌器简图	主要尺寸	特性参数			备注
			常用运转条件	常用介质粘度范围(η)	液体流动状态	
桨叶型	直叶	$D_j/D_i = 0.35 \sim 0.80$ $b/D_j = 0.1 \sim 0.25$ 桨叶数 $Z_j = 2$; 斜叶的斜角 $= 45^\circ$ (标准值), 30°	$n = 1 \sim 100 \text{rpm}$ $v = 1.0 \sim 5.0 \text{ m/s}$	$\eta < 2000 \text{ mPa} \cdot \text{s}$	低速时主要为水平环向流；高速时为径型；有挡板时为上下循环流	当 $D_j/D_i > 0.9$ 并设多层桨式叶轮时，可用予板时为上下循环流
	斜叶	$D_j/D_i = 0.35 \sim 0.80$ $b/D_j = 0.1 \sim 0.25$ 桨叶数 $Z_j = 2$; 斜叶的斜角 $= 45^\circ$ (标准值), 30°	$n = 1 \sim 100 \text{rpm}$ $v = 1.0 \sim 5.0 \text{ m/s}$	$\eta < 2000 \text{ mPa} \cdot \text{s}$	有轴向分流，径向分流和环向分流多在层流，过渡流状态下操作	在层流区操作时，其适用介质粘度可达到 $10^5 \text{mPa} \cdot \text{s}$ ，桨叶端的线速度
开启涡轮式	直叶	$D_j/D_i = 0.2 \sim 0.5$ (标准值为 0.33) $b/D_j = 0.15 \sim 0.3$ (标准值为 0.2); 桨叶数 $Z_j = 3$; 4、6、8 (常用桨叶数 $Z_j = 6$) 斜桨叶的斜角 $= 30^\circ, 45^\circ, 60^\circ$ (标准值 $\eta = 45^\circ$) 后弯桨叶弯角 $\eta = 30^\circ, 50^\circ, 60^\circ, 80^\circ$ (常用 $\eta = 50^\circ, 60^\circ$)	$n = 10 \sim 300 \text{rpm}$ $v = 4 \sim 10 \text{m/s}$; 斜桨叶的 $V = 2 \sim 6 \text{m/s}$	对直桨叶 $\eta < 5 \times 10^4 \text{mPa} \cdot \text{s}$ 对斜桨叶、后弯桨叶 $\eta < 10^4 \text{mPa} \cdot \text{s}$	直叶。弯叶为径向流。有挡板时，自桨叶为界形成上、下两个循环流；斜叶为兼有径向流和轴向流，但近于轴流型	最高转速可达 600rpm；斜叶斜角 66° 的叶轮予 3 叶开启涡轮，其搅拌效果类似 3 叶推进式；用于高粘度的液体时，后弯叶的弯角 η 宜取大值，以降低功率消耗。
	斜叶	$D_j/D_i = 0.2 \sim 0.5$ (标准值为 0.33) $b/D_j = 0.15 \sim 0.3$ (标准值为 0.2); 桨叶数 $Z_j = 3$; 4、6、8 (常用桨叶数 $Z_j = 6$) 斜桨叶的斜角 $= 30^\circ, 45^\circ, 60^\circ$ (标准值 $\eta = 45^\circ$) 后弯桨叶弯角 $\eta = 30^\circ, 50^\circ, 60^\circ, 80^\circ$ (常用 $\eta = 50^\circ, 60^\circ$)	$n = 10 \sim 300 \text{rpm}$ $v = 4 \sim 10 \text{m/s}$; 斜桨叶的 $V = 2 \sim 6 \text{m/s}$	对直桨叶 $\eta < 5 \times 10^4 \text{mPa} \cdot \text{s}$ 对斜桨叶、后弯桨叶 $\eta < 10^4 \text{mPa} \cdot \text{s}$	直叶。弯叶为径向流。有挡板时，自桨叶为界形成上、下两个循环流；斜叶为兼有径向流和轴向流，但近于轴流型	最高转速可达 600rpm；斜叶斜角 66° 的叶轮予 3 叶开启涡轮，其搅拌效果类似 3 叶推进式；用于高粘度的液体时，后弯叶的弯角 η 宜取大值，以降低功率消耗。
	后弯叶	$D_j/D_i = 0.2 \sim 0.5$ (标准值为 0.33) $b/D_j = 0.15 \sim 0.3$ (标准值为 0.2); 桨叶数 $Z_j = 3$; 4、6、8 (常用桨叶数 $Z_j = 6$) 斜桨叶的斜角 $= 30^\circ, 45^\circ, 60^\circ$ (标准值 $\eta = 45^\circ$) 后弯桨叶弯角 $\eta = 30^\circ, 50^\circ, 60^\circ, 80^\circ$ (常用 $\eta = 50^\circ, 60^\circ$)	$n = 10 \sim 300 \text{rpm}$ $v = 4 \sim 10 \text{m/s}$; 斜桨叶的 $V = 2 \sim 6 \text{m/s}$	对直桨叶 $\eta < 5 \times 10^4 \text{mPa} \cdot \text{s}$ 对斜桨叶、后弯桨叶 $\eta < 10^4 \text{mPa} \cdot \text{s}$	直叶。弯叶为径向流。有挡板时，自桨叶为界形成上、下两个循环流；斜叶为兼有径向流和轴向流，但近于轴流型	最高转速可达 600rpm；斜叶斜角 66° 的叶轮予 3 叶开启涡轮，其搅拌效果类似 3 叶推进式；用于高粘度的液体时，后弯叶的弯角 η 宜取大值，以降低功率消耗。
	斜叶	$D_j/D_i = 0.2 \sim 0.5$ (标准值为 0.33) $b/D_j = 0.15 \sim 0.3$ (标准值为 0.2); 桨叶数 $Z_j = 3$; 4、6、8 (常用桨叶数 $Z_j = 6$) 斜桨叶的斜角 $= 30^\circ, 45^\circ, 60^\circ$ (标准值 $\eta = 45^\circ$) 后弯桨叶弯角 $\eta = 30^\circ, 50^\circ, 60^\circ, 80^\circ$ (常用 $\eta = 50^\circ, 60^\circ$)	$n = 10 \sim 300 \text{rpm}$ $v = 4 \sim 10 \text{m/s}$; 斜桨叶的 $V = 2 \sim 6 \text{m/s}$	对直桨叶 $\eta < 5 \times 10^4 \text{mPa} \cdot \text{s}$ 对斜桨叶、后弯桨叶 $\eta < 10^4 \text{mPa} \cdot \text{s}$	直叶。弯叶为径向流。有挡板时，自桨叶为界形成上、下两个循环流；斜叶为兼有径向流和轴向流，但近于轴流型	最高转速可达 600rpm；斜叶斜角 66° 的叶轮予 3 叶开启涡轮，其搅拌效果类似 3 叶推进式；用于高粘度的液体时，后弯叶的弯角 η 宜取大值，以降低功率消耗。

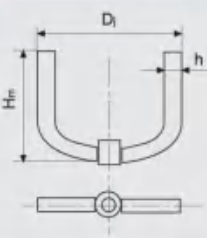
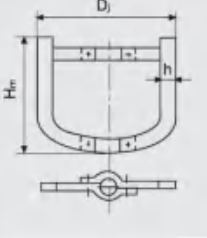
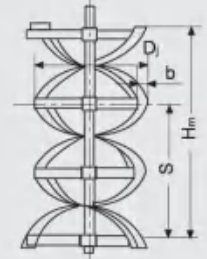
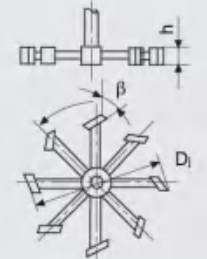
We have made about 30 kinds of agitators, namely 140 categories. We can make according to every size series of H/T2123-91 from familiar furthest (include existing every agitators of HB5, SB90 standard) to every complicated figure or especial use. We can also design and made all kinds of agitators with especial request or especial size or especial use, according to the technics request of user.

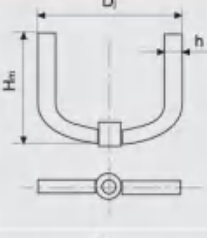
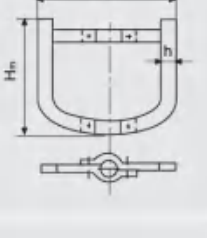
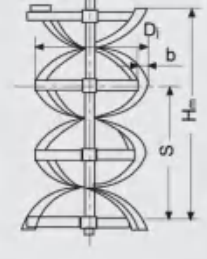
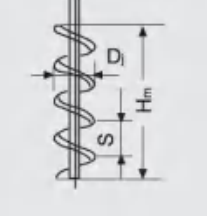
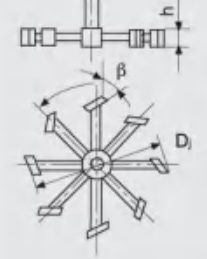
1. Form primary dimension and characteristic parameter of agitators

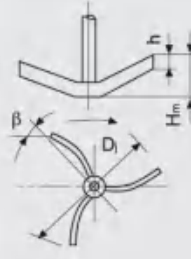
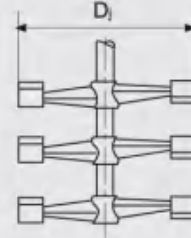
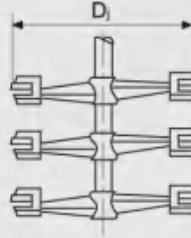
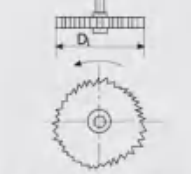
type	simple drawing	primary dimension	characteristic parameter			note
			common work condition	common medium viscosity extension(η)	liquid flow state	
oar	straight leaf	$D_j/D_i = 0.35 \sim 0.80$ $b/D_j = 0.1 \sim 0.25$ number of oar leaf $Z_j = 2$; bevel of skew leaf $= 45^\circ$ (normal value), 30°	$n = 1 \sim 100 \text{rpm}$ $v = 1.0 \sim 5.0 \text{m/s}$	$\eta < 2000 \text{ mPa} \cdot \text{s}$	Level round flow as low speed; radial form as high speed; flow round up and down with baffle. Distributary along axes, radial, round	It can be used to mill high viscosity liquid with low speed when $D_j/D_i > 0.9$, and many floor oar impellers have been used.
	skew leaf	$D_j/D_i = 0.35 \sim 0.80$ $b/D_j = 0.1 \sim 0.25$ number of oar leaf $Z_j = 2$; bevel of skew leaf $= 45^\circ$ (normal value), 30°	$n = 1 \sim 100 \text{rpm}$ $v = 1.0 \sim 5.0 \text{m/s}$	$\eta < 2000 \text{ mPa} \cdot \text{s}$	has been done in the condition of floor flow or transition flow.	Medium viscosity in point has achieved $10^5 \text{mPa} \cdot \text{s}$. When done in floor flow area. Line speed at the end of oar leaf $v = 1.0 \sim 3.0 \text{m/s}$
opening turbine	straight leaf	$D_j/D_i = 0.2 \sim 0.5$ (normal value 0.33); $b/D_j = 0.15 \sim 0.3$ (normal value 0.2); number of oar leaf $Z_j = 3, 4, 6, 8$ (number of normal oar leaf $Z_j = 6$); bevel of skew oar leaf $= 30^\circ, 45^\circ, 60^\circ$ (normal value $\eta = 45^\circ$); degree of retrail curly oar leaf $\eta = 30^\circ, 50^\circ, 60^\circ, 80^\circ$ (normal $\eta = 50^\circ, 60^\circ$)	$n = 10 \sim 300 \text{rpm}$ $v = 4 \sim 10 \text{m/s}$; skew oar leaf $V = 2 \sim 6 \text{m/s}$	to straight oar leaf $\eta < 5 \times 10^4 \text{mPa} \cdot \text{s}$ to skew oar leaf, retrail curly oar leaf $\eta < 10^4 \text{mPa} \cdot \text{s}$	Flow along radial for straight leaf and curly leaf; two flows round up and down with baffle; both flow along axes has been formed for skew leaf, but it seems flow along axes.	Up most rotate speed can achieve 600rpm. Impeller with bevel of skew leaf 66° has been used for three-leaf opening turbine, its effect seems three-leaf advance form. Degree of retrail curly oar leaf should choose big value to reduce power wastage for high viscosity liquid.
	skew leaf	$D_j/D_i = 0.2 \sim 0.5$ (normal value 0.33); $b/D_j = 0.15 \sim 0.3$ (normal value 0.2); number of oar leaf $Z_j = 3, 4, 6, 8$ (number of normal oar leaf $Z_j = 6$); bevel of skew oar leaf $= 30^\circ, 45^\circ, 60^\circ$ (normal value $\eta = 45^\circ$); degree of retrail curly oar leaf $\eta = 30^\circ, 50^\circ, 60^\circ, 80^\circ$ (normal $\eta = 50^\circ, 60^\circ$)	$n = 10 \sim 300 \text{rpm}$ $v = 4 \sim 10 \text{m/s}$; skew oar leaf $V = 2 \sim 6 \text{m/s}$	to straight oar leaf $\eta < 5 \times 10^4 \text{mPa} \cdot \text{s}$ to skew oar leaf, retrail curly oar leaf $\eta < 10^4 \text{mPa} \cdot \text{s}$	Flow along radial for straight leaf and curly leaf; two flows round up and down with baffle; both flow along axes has been formed for skew leaf, but it seems flow along axes.	Up most rotate speed can achieve 600rpm. Impeller with bevel of skew leaf 66° has been used for three-leaf opening turbine, its effect seems three-leaf advance form. Degree of retrail curly oar leaf should choose big value to reduce power wastage for high viscosity liquid.
	retrail curly leaf	$D_j/D_i = 0.2 \sim 0.5$ (normal value 0.33); $b/D_j = 0.15 \sim 0.3$ (normal value 0.2); number of oar leaf $Z_j = 3, 4, 6, 8$ (number of normal oar leaf $Z_j = 6$); bevel of skew oar leaf $= 30^\circ, 45^\circ, 60^\circ$ (normal value $\eta = 45^\circ$); degree of retrail curly oar leaf $\eta = 30^\circ, 50^\circ, 60^\circ, 80^\circ$ (normal $\eta = 50^\circ, 60^\circ$)	$n = 10 \sim 300 \text{rpm}$ $v = 4 \sim 10 \text{m/s}$; skew oar leaf $V = 2 \sim 6 \text{m/s}$	to straight oar leaf $\eta < 5 \times 10^4 \text{mPa} \cdot \text{s}$ to skew oar leaf, retrail curly oar leaf $\eta < 10^4 \text{mPa} \cdot \text{s}$	Flow along radial for straight leaf and curly leaf; two flows round up and down with baffle; both flow along axes has been formed for skew leaf, but it seems flow along axes.	Up most rotate speed can achieve 600rpm. Impeller with bevel of skew leaf 66° has been used for three-leaf opening turbine, its effect seems three-leaf advance form. Degree of retrail curly oar leaf should choose big value to reduce power wastage for high viscosity liquid.
	skew leaf	$D_j/D_i = 0.2 \sim 0.5$ (normal value 0.33); $b/D_j = 0.15 \sim 0.3$ (normal value 0.2); number of oar leaf $Z_j = 3, 4, 6, 8$ (number of normal oar leaf $Z_j = 6$); bevel of skew oar leaf $= 30^\circ, 45^\circ, 60^\circ$ (normal value $\eta = 45^\circ$); degree of retrail curly oar leaf $\eta = 30^\circ, 50^\circ, 60^\circ, 80^\circ$ (normal $\eta = 50^\circ, 60^\circ$)	$n = 10 \sim 300 \text{rpm}$ $v = 4 \sim 10 \text{m/s}$; skew oar leaf $V = 2 \sim 6 \text{m/s}$	to straight oar leaf $\eta < 5 \times 10^4 \text{mPa} \cdot \text{s}$ to skew oar leaf, retrail curly oar leaf $\eta < 10^4 \text{mPa} \cdot \text{s}$	Flow along radial for straight leaf and curly leaf; two flows round up and down with baffle; both flow along axes has been formed for skew leaf, but it seems flow along axes.	Up most rotate speed can achieve 600rpm. Impeller with bevel of skew leaf 66° has been used for three-leaf opening turbine, its effect seems three-leaf advance form. Degree of retrail curly oar leaf should choose big value to reduce power wastage for high viscosity liquid.

搅拌机 类型	搅拌机简图	主要尺寸	特性参数			备注
			常用运转条件	常用介质粘度 范围(η)	液体流动状态	
圆盘 涡轮式	直 叶	 $D_j/D_i=0.2$ ~ 0.5(标准 值为 0.33); $D_j:l:b=20:5:$ 4 叶片数量 $Z_j = 4、6、$ 8(常用 $Z=6$)	$n=10\sim 300\text{rpm}$ $v=4\sim 10\text{m/s}$ 斜 叶式的 $v=2\sim 6\text{m/s}$	对直叶为: $\square$ $<5\times 10^4\text{mPa}\cdot\text{s}$ 对斜叶、弯叶 为: $\square$ $<10^4\text{mPa}\cdot\text{s}$	直叶、弯叶为径 向流; 有挡板时, 自桨叶为界形上、 下两个循环流; 斜叶为兼有径向 流和轴向流; 圆 盘涡轮叶轮在其 圆盘上下的液体 混合不如开启涡 轮	最高转速 $n=600\text{rpm}$:
	斜 叶	 斜桨叶斜角 $\square=45^\circ、30^\circ$ 后弯叶弯角 $\square=45^\circ$				
	后 弯 叶					
推 进 式	螺 旋 叶	 $D_j/D_i=0.2\sim$ 0.5(标准值 为 0.33); $S/D_j=1、2$ 叶片数量 $Z_j=2、3、4$ (常用 $Z=3$); P_t- 螺距	$n=100\sim 500\text{rpm}$ $v=3\sim 15\text{m/s}$	$\square<2000\text{mpa}\cdot\text{s}$	轴流型, 循环速 率高, 剪切力 小。 装有挡板或导流 筒时, 轴向流更 强	最高转速 $n=1750\text{rpm}$: 叶端高线速 $v=25\text{m/s}$: 在 $n<500\text{rpm}$ 时, 适用介质粘 度 $\square\leq 5\times$ $10^4\text{mPa}\cdot\text{S}$

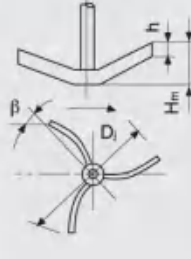
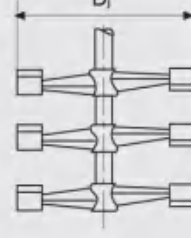
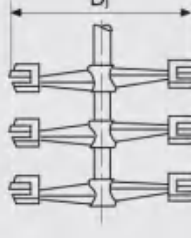
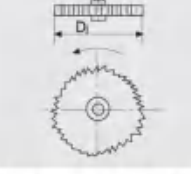
type	simple drawing	primary dimension	characteristic parameter			note	
			common work condition	common medium viscosity extension(η)	liquid flow state		
disk turbine form	straight leaf		$D_j/D_i=0.2 \sim 0.5$ (normal value is 0.33); $D_j:l:b=20:5:4$ number leaf $Z_j=4 \sim 8$ (normal $Z=6$)	$n=10 \sim 300 \text{rpm}$ $v=4 \sim 10 \text{m/s}$ skew leaf $v=2 \sim 6 \text{m/s}$	to straight leaf: $\eta < 5 \times 10^4 \text{mPa} \cdot \text{s}$ to skew leaf, curly leaf: $\eta < 10^4 \text{mPa} \cdot \text{s}$	Flow along radial for straight leaf and curly leaf; two flows round up and down has been formed with baffle; both flow along radial and flow along axes has been formed for skew leaf; liquid is mixed better up and down the disk using opening turbine than using disk turbine.	upmost rotate speed $n=600 \text{rpm}$
	skew leaf		bevel skew oar leaf $\beta = 45^\circ, 30^\circ$ degree of retral curly leaf $\beta = 45^\circ$				
	retral curly leaf						
advance form	helix leaf		$D_j/D_i=0.2 \sim 0.5$ (normal value is 0.33); $S/D_j=1 \sim 2$ number of leaf $Z_j=2 \sim 4$ (normal $Z=3$); Pt-pitch	$n=100 \sim 500 \text{rpm}$ $v=3 \sim 15 \text{m/s}$	$\eta < 2000 \text{mPa} \cdot \text{s}$	Flow along axes, high round speed, little cut power, strong flow along axes for baffle or canister leading flow.	upmost ratate speed $n=1750 \text{rpm}$: high line speed at the end of leaf $v=25 \text{m/s}$: Medium viscosity is point $\eta < 5 \times 10^4 \text{mPa} \cdot \text{s}$ as $n < 500 \text{rpm}$

搅拌器类型	搅拌器简图	主要尺寸	特性参数			备注
			常用运转条件	常用介质粘度范围($\square$)	液体流动状态	
锚式		$D1/Di=0.9\sim 0.98$; $b/D1=0.1$; $Hm/Di=0.48\sim 1.0$	$n=1\sim 100\text{rpm}$ $v=1\sim 5\text{m/s}$	$\square < 10^5 \text{mPa} \cdot \text{s}$	在桨叶不同高度上均为水平环向流; 采用斜叶或角钢型叶时,可增加桨叶附近的涡流;	为了增大搅拌范围,可根据需要在桨叶上增设立叶和横梁
框式					锚式,框式叶轮均在层流状态下操作	
螺旋带式		$Di/Di=0.9\sim 0.98$; $S/Di=0.5, 1, 1.5$; $b/Di=0.1$ $Hm/Dj=1\sim 3$ (可根据液层高度增大) 螺带条数: 1、2	$n=0.5\sim 50\text{rpm}$ $v=2\text{m/s}$	$\square < 10^5 \text{mPa} \cdot \text{s}$	轴流型: 一般是液体沿容器内壁螺旋上升后再沿轴下降; 桨叶在层流状态下操作	
螺旋杆式		$Dj/Di=0.4\sim 0.5$; $S/Dj=1, 1.5$; $Hm/Dj=1\sim 3$	$n=0.5\sim 50\text{rpm}$ $v=2\text{m/s}$	$\square < 10^5 \text{mPa} \cdot \text{s}$	轴向流。带导流筒时,一般液体在导流筒内向下流,在导流筒外的环形空间向上流;桨叶在层流状态下操作	螺杆叶轮可偏心放入搅拌容器内,这时桨叶与容器内壁的间距 $< \frac{1}{20} Dj$,容器壁能起到挡板的作用
布马金式		$Dj/Di=0.2\sim 0.5$; $b/Di=0.1$ $b=70$ 桨叶数量 $Zj=6, 8$	$n=10\sim 300\text{rpm}$	$\square < 5 \times 10^4 \text{mPa} \cdot \text{s}$	径流型	桨叶端部加宽并有后弯角;排出液体性能好,动力消耗小,剪切力小

type	simple drawing	primary dimension	characteristic parameter			note
			common work condition	common medium viscosity extension($\square$)	liquid flow state	
anchor form		$D1/Di=0.9\sim 0.98$; $b/D1=0.1$; $Hm/Di=0.48\sim 1.0$	$n=1\sim 100\text{rpm}$ $v=1\sim 5\text{m/s}$	$\square < 10^5 \text{mPa} \cdot \text{s}$	It all is level round flow on the different height of oar leaf. It can add whirlpool near leaf when using skew leaf or angle iron leaf; impeller of anchor and frame forms has been worked in the condition of floor flow.	Horrent leaf and beam can be added as needed for extending milling area.
frame form						
helix cincture form agitator		$Di/Di=0.9\sim 0.98$; $S/Di=0.5, 1, 1.5$; $b/Di=0.1$ $Hm/Dj=1\sim 3$ (augment according to liquid height); number of helix cincture 1、2	$n=0.5\sim 50\text{rpm}$ $v=2\text{m/s}$	$\square < 10^5 \text{mPa} \cdot \text{s}$	Flow along axes Liquid raises helix along inner case wall, then drops along shaft; oar leaf is worked in the condition of floor flow.	
helix pole form agitator		$Dj/Di=0.4\sim 0.5$; $S/Dj=1, 1.5$; $Hm/Dj=1\sim 3$	$n=0.5\sim 50\text{rpm}$ $v=2\text{m/s}$	$\square < 10^5 \text{mPa} \cdot \text{s}$	Flow along axes Normal liquid has flowed down within canister leading flow, flowed up in round room outside canister leading flow. Oar leaf has been worked in the condition of floor flow.	Impeller of helix pole can be putted into milling case, distance of oar leaf and inner case wall less than $\frac{1}{20} Dj$, case wall can exert action as baffle.
buemajin form agitator		$Dj/Di=0.2\sim 0.5$; $b/Di=0.1$ $b=70$ number of oar leaf $Zj=6, 8$	$n=10\sim 300\text{rpm}$	$\square < 5 \times 10^4 \text{mPa} \cdot \text{s}$	Flow along radial	The end of oar leaf is widened and retral curly degree exist. It has good capability of venting liquid, small power wastage, little cut power.

搅拌机类型	搅拌机简图	主要尺寸	特性参数			备注
			常用运转条件	常用介质粘度范围(η)	液体流动状态	
三叶后掠式		$D_j/D_i=0.5$; $b/H_m=2/5$; $h/D_i=0.05$; $\beta=30^\circ, 50^\circ$; 叶片上翘角: $15^\circ\sim 20^\circ$; 叶片数 $Z_j=3$	$n=80\sim 150\text{rpm}$ $v \leq 10\text{m/s}$	$\eta < 10^4\text{mPa} \cdot \text{s}$	径流型: 搅拌容器内装配指形挡板时可获得上下循环流, 循环量大 在挡板的配合下, 剪切作用也大	最高叶端线速度 $v=15\text{m/s}$
MIG式(多层双倾斜桨叶)		$D_j/D_i=0.5\sim 0.95$ (标准值为 0.7); 每个叶轮的桨叶数 $Z_j=2$ 搅拌器容量 $Z=2\sim 3$ 个(标准为 3 个); 叶轮间距 $S_p=0.28D_i$ (标准值); 搅拌容器内设挡板的条件: $D_j/D_i < 0.7$, 2~4 挡板; $D_j/D_i > 0.7$: 无挡板	$v=1\sim 12\text{m/s}$	$\eta < 10^4\text{mPa} \cdot \text{s}$	低速时水平环向流和轴向流: 高速时为径向流轴向流: 每个斜桨叶外端增设一个与主桨叶前端有较强的涡流。可在层流区和湍流区操作	MIG 式叶轮属于斜桨叶的改型, 在每个斜桨叶外端增设一个与主桨叶反向倾斜的小桨叶; 每个搅拌器为二个桨叶; 搅拌轴上一般装 2~3 个搅拌器(互成 90°)
INTERMIG式(多层桨叶搅拌机)		$D_j/D_i < 0.7$, 2~4 挡板; $D_j/D_i > 0.7$: 无挡板			流体的流动状态同 MIG 式搅拌机, 桨叶外端的涡流更强, 混合效果更好	INTERMIG 式搅拌机属于 MIG 式搅拌器的改型, 在斜主桨叶外端的小桨叶改为双斜叶小桨叶; 搅拌轴上的搅拌器数一般为 2~3 个(互成 90°)
锯式圆盘式		$D_j/D_i=0.2\sim 0.5$;	$v=5\sim 20\text{m/s}$	$\eta < 2000\text{mPa} \cdot \text{s}$	径流型。 在湍流状态下操作	

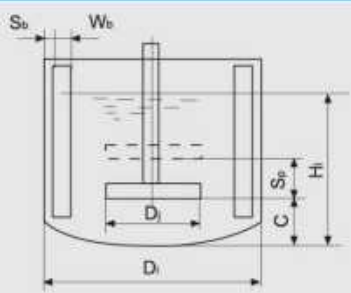
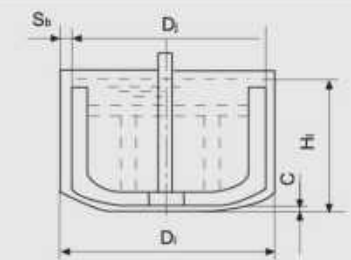
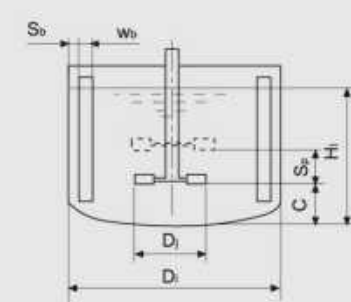
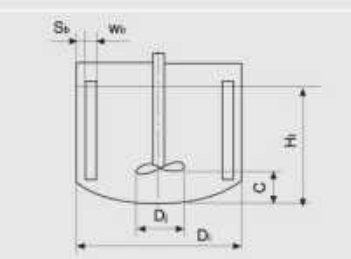
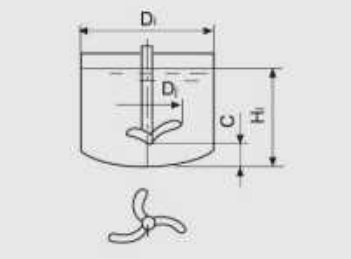
注: 表中通用符号的命名: n - 搅拌机转速 rpm ; v - 搅拌机桨叶部的线速 m/s ; D_i - 搅拌容器内径; D_j - 搅拌机直径; S - 螺旋形桨叶的螺距; β - 后弯桨叶的后弯角($^\circ$)。

type	simple drawing	primary dimension	characteristic parameter			note
			common work condition	common medium viscosity extension(η)	liquid flow state	
three-leaves retrai curly form agitator		$D_j/D_i=0.5$; $b/H_m=2/5$; $h/D_i=0.05$; $\beta=30^\circ, 50^\circ$; uphill turnup angle of leaf; $15^\circ\sim 20^\circ$; number of leaf $Z_j=3$	$n=80\sim 150\text{rpm}$ $v \leq 10\text{m/s}$	$\eta < 10^4\text{mPa} \cdot \text{s}$	Radial flow form Flow round up and down can be formed when baffle as finger form is assembled within agitator, large circulation capacity, cut action is also large with baffle.	Upmost line speed at the end of leaf $v=15\text{m/s}$
Many floor double slantwise oar MIG agitator leaves		$D_j/D_i=0.5\sim 0.95$ (normal value is 0.7); number of oar leaf in every impeller $Z_j=2$ capability of agitator $Z=2\sim 3$ (normal value is 3); distance of impeller $S_p=0.28D_i$ (normal value); condition of setting up baffle within agitator; $D_j/D_i < 0.7$, 2~4 baffles; $D_j/D_i > 0.7$; without baffle	$v=1\sim 12\text{m/s}$	$\eta < 10^4\text{mPa} \cdot \text{s}$	Level round flow and axes flow as low speed; radial flow and axes flow as high speed. It has strong whirlpool in oar leaf front, it can work in floor flow area and onflow area.	MIG impeller belongs to skew oar leaf remodel, little oar leaf, contrary major oar leaf incline orientation, is settled up. There is two oar leaves in every agitator; there is usual 2-3 agitators on milling axes. (become 90° each other)
INTERMIG form MIG remodelled					Flow state of liquid is same to MIG agitator. Whirlpool outside oar leaf is still strong, mixing effect is still good.	INTERMIG agitator belongs to MIG agitator remodel. Little oar leaf outside skew major oar leaf is changed into double skew little oar leaf. There is usual 2-3 agitators on milling axes. (become 90° each other)
Toothed disk agitator		$D_j/D_i=0.2\sim 0.5$;	$v=5\sim 20\text{m/s}$	$\eta < 2000\text{mPa} \cdot \text{s}$	Radial flow form It is worked in the condition of onflow	

Note: Call of universal symbol in list: n — rotate speed of agitator, rpm ; v — line speed of agitator leaf, m/s ; D_i — inside diameter of agitator; D_j — diameter of agitator; S — pitch of helix oar leaf; β — degree of retrai curly oar leaf ($^\circ$).

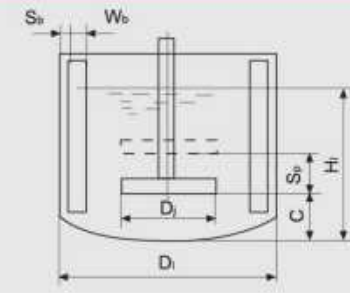
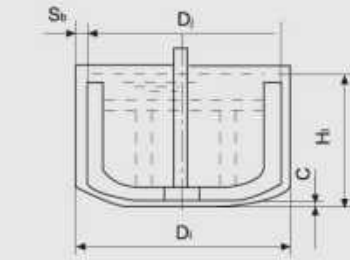
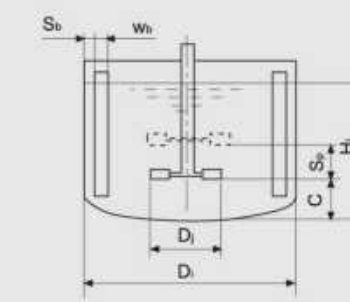
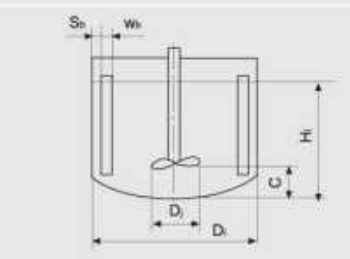
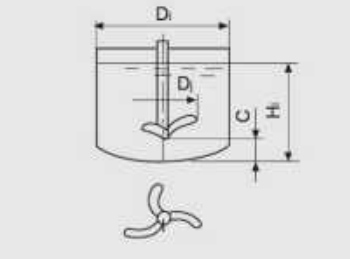
2、搅拌器在搅拌容器中的位置尺寸关系

搅拌器在搅拌容器中的位置尺寸关系

搅拌器类型	搅拌容器和搅拌器简图	位置尺寸比例
桨式		$C=(0.15\sim0.25)D_i$ $S_p=(0.3\sim0.4)D_i$ $W_b=(\frac{1}{12}\sim\frac{1}{10})D_i$ (标准值: $\frac{1}{12}D_i$) $S_b=(0.2\sim0.5)W_b$ (标准值: $0.2W_b$) $H_1=D_i$ (标准值) 当 H_1 远大于 D_i 时, 应采用多层搅拌器
锚式 框式		$C=(0.03\sim0.06)D_i$ $S_b=0.0275D_i$ (用于平底桨叶的锚式、框式搅拌器) $S_b=0.06D_i$ (用于圆弧形底桨叶的锚式、框式搅拌器) $H_1=D_i$ (标准值)
开启式 圆盘涡轮式		$C=(0.5\sim1)D_i$ (用于开启涡轮式搅拌器) $C \approx D_i$ (用于圆盘涡轮式搅拌器) $S_p=(1\sim1.5)D_j$ $W_b=(\frac{1}{12}\sim\frac{1}{10})D_i$ (标准值: $1/12D_i$) $S_b=(0.2\sim0.5)W_b$ (标准值: $0.2W_b$) $H_1=D_i$ (标准值) 当 H_1 远大于 D_i 时, 应采用多层搅拌器
推进式		$C=(1\sim1.5)D_i$ (标准值: $C=D_i$) $W_b=0.1D_i$ $S_b=0$ (无间隙) $H_1=D_i$ (标准值)
三叶后掠式		$C=(0.1\sim0.3)D_i$ $H_1=D_i$ (标准值)

2. Relation of place dimension for agitator within case

Relation of place dimension

Type	Simple drawing of case and agitator	Scale of place dimension
oar form		$C=(0.15\sim0.25)D_i$ $S_p=(0.3\sim0.4)D_i$ $W_b=(\frac{1}{12}\sim\frac{1}{10})D_i$ (normal value: $\frac{1}{12}D_i$) $S_b=(0.2\sim0.5)W_b$ (normal value: $0.2W_b$) $H_1=D_i$ (normal value) Many floor agitator should be used when H_1 bigger than D_i
anchor and frame form		$C=(0.03\sim0.06)D_i$ $S_b=0.0275D_i$ (for auchor and frame form agitator with level bottom oar leaf) $S_b=0.06D_i$ (for auchor and frame form agitator with fox bottom oar leaf) $H_1=D_i$ (normal value)
opening turbine form disk turbine form		$C=(0.5\sim1)D_i$ (for opening turbine form agitator) $C \approx D_i$ (for disk turbine form agitator) $S_p=(1\sim1.5)D_j$ $W_b=(\frac{1}{12}\sim\frac{1}{10})D_i$ (normal value: $1/12D_i$) $S_b=(0.2\sim0.5)W_b$ (normal value: $0.2W_b$) $H_1=D_i$ (normal value) Many floor agitator should be used when H_1 bigger than D_i
advance form		$C=(1\sim1.5)D_i$ (normal value: $C=D_i$) $W_b=0.1D_i$ $S_b=0$ $H_1=D_i$ (normal value)
three-leaves retral curly form		$C=(0.1\sim0.3)D_i$ $H_1=D_i$ (normal value)

搅拌器类型 Type	搅拌容器和搅拌器简图 Simple drawing of case and agitator	位置尺寸比例 Scale of place dimension
螺旋带式 helix cincture form agitator		$C=(0.01\sim0.05)Dj$

3、搅拌器选形 Form selection of agitator

(1)最适宜的搅拌器端部的圆周速度 Optimum circle speed at the end of agitator

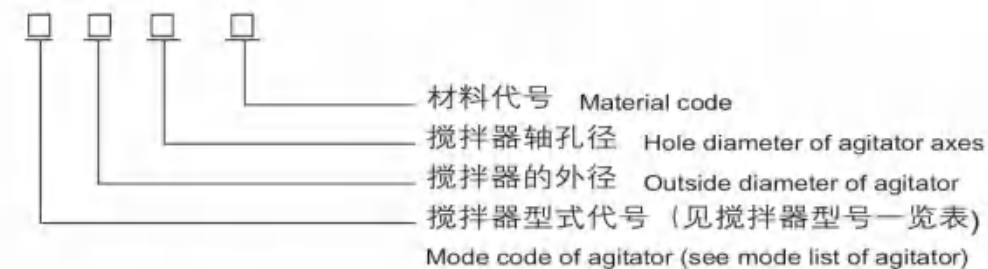
搅拌器类型 type	被搅拌介质的粘度 medium viscosity mPa·s	适宜的搅拌器端部 圆周速度, m/s circle speed	最高转速 rpm upmost rotate speed
桨式、框式、锚式 oar, frame and anchor form	1~4000	3.0~2.0	< 80
	4000~8000	2.5~1.5	
	8000~15000	1.5~1.0	
涡轮式 turbine form	1~5000	7~4.2	< 540
	5000~15000	4.2~3.4	
	15000~25000	3.4~2.3	
推进式 advance form	1~2000	4.8~16	< 800

(2)搅拌器形式选择 Form selection of agitator

搅拌器形式选用表 selection list

工艺过程类别 type of technics process	控制因素 control factor	适用搅拌器形式 form in point	D_i/D_j	H_i/D_i
调和 congruity (低粘度均相液体混合) low viscosity symmetrical phasic liquid mixed	容积循环速率 cubage round speed	推进式 advance form 涡轮式 turbine form	推进式 advance form: 4:1~3:1 涡轮式 turbine form: 6:1~3:1	不限
分散 decentralization (非均相液体混合) asymmetrical phasic liquid mixed	液滴大小 (分散度)、 liquid drib bulk decentraliza- tion degree	涡轮式 turbine form	3.5:1~3:1	1:1~1:2
固体悬浮 solid suspended	容积循环速率 cubage round speed 容积循环速率, 湍流强度 cubage round speed onflow strong	按固体粘度, 含量及比 重选用下列三种: 桨 式、推进式或涡轮式 select next three types ac- cording to solid viscosity	推进式 advance form: 2.5:1~3.5:1 桨式或涡轮式 oar or turbine form: 2.0:1~3.2:1	1:2~1:1
气体吸收 gas absorbed	剪切作用, 容积循环速 率, 高速度 cut action, cubage round speed, high speed	涡轮式 turbine form	2.5:1~4.0:1	4:1~1:1
传热 transmit heat energy	容积循环速率, 流经传 热面的湍流速度 cubage round speed, onflow speed of flowing across trans- mit heat energy surface	桨式 oar form 推进式 advance form 涡轮式 turbine form	桨式 oar form: 1.25:1~2:1 推进式 advance form: 3:1~4:1 涡轮式 turbine form: 3:1~4:1	1:2~2:1

4、搅拌器型号标注方法 Earmark procedure of agitator mode



5、搅拌器型号一览表 Mode list of agitator

序号 No.	搅拌器型式名称 mode name	代号 code	序号 No.	搅拌器型式名称 mode name	代号 code
001	平直叶整体桨式 (HG5-220-65) even straight leaf holistic oar form	PJ	020	六直叶可拆开启涡轮式 SB90-283 six straight leaves knock-down opening turbine form	PCK
002	平直叶可拆桨式 (HG5-220-65) even straight leaf knock-down oar form	PCJ	021	六直叶稳定环开启涡轮式 six straight leaves steady ring opening turbine form	PKW
003	斜叶整体桨式 SB90-278 skew leaf holistic oar form	XJ	022	六窄叶整体开启涡轮式 SB90-286 six confined leaves holistic opening turbine form	PZK
004	斜叶可拆桨式 SB90-279 skew leaf knock-down oar form	ZJ	023	六窄叶可拆开启涡轮式 SB90-287 six confined leaves knock-down opening turbine form	PKZ
005	E 型折叶桨式 E type two-double leaf oar form	EJ	024	六窄叶稳定环开启涡轮式 six confined leaves steady ring opening turbine form	PZW
006	E 型折叶可拆桨式 E type two-double leaf knock-down oar form	ECJ	025	六弯叶开启涡轮式 six curly leaves opening turbine form	WK
007	G 型折叶桨式 G type two-double leaf oar form	GJ	026	六弯窄叶开启涡轮式 six curly confined leaves opening turbine form	WZK
008	G 型折叶可拆桨式 G type two-double leaf knock-down oar form	GCJ	027	六弯叶稳定环开启涡轮式 six curly leaves steady ring opening turbine form	WKW
009	S 型双折叶桨式 S type bidirectional two-double leaf oar form	SJ	028	六斜窄叶稳定环开启涡轮式 six skew confined leaves steady ring opening turbine form	WWK
010	S 型双折叶可拆桨式 S type bidirectional two-double leaf knock-down oar form	SCJ	029	六斜叶整体开启涡轮式 SB90-284 six skew leaves holistic opening turbine form	XK
011	C 型双折叶桨式 C type bidirectional two-double oar form	CJ	030	六斜叶可拆开启涡轮式 SB90-285 six skew leaves knock-down opening turbine form	XKK
012	C 型双折叶可拆桨式 C type bidirectional two-double knock-down oar form	CCJ	031	六斜叶稳定环开启涡轮式 six skew leaves steady ring opening turbine form	XKW
013	曲边斜叶整体桨式 curly edge skew leaf holistic oar form	QJ	032	六斜窄叶整体开启涡轮式 six skew confined holistic opening turbine form	XZK
014	曲边斜叶可拆桨式 curly edge skew leaf knock-down oar form	QCJ	033	六斜窄叶可拆开启涡轮式 six skew confined knock-down opening turbine form	XKZ
015	菱臂弧叶整体桨式 rhombic arm fox leaf holistic oar form	BJ	034	六斜窄叶稳定环开启涡轮式 six skew confined steady ring opening turbine form	XZW
016	菱臂弧叶可拆桨式 rhombic arm fox leaf knock-down oar form	BCJ	035	四斜叶整体开启涡轮式 four skew leaves holistic opening turbine form	MK
017	花板孔整体桨式 motley board-hole holistic oar form	FJ	036	四斜叶可拆开启涡轮式 four skew leaves knock-down opening turbine form	XCK
018	花板孔可拆桨式 motley board-hole knock-down oar form	FCJ	037	四斜叶整体稳定器开启涡轮式 four skew leaves holistic stabilizator opening turbine form	MKW
019	六直叶整体开启涡轮式 SB90-282 six straight leaves holistic opening turbine form	PK	038	四斜叶可拆稳定器开启涡轮式 four skew leaves knock-down stabilizator opening turbine form	XCW

序号 No.	摆杆器型式名称 mode name	代号 code	序号 No.	摆杆器型式名称 mode name	代号 code
039	四斜窄叶整体开启涡轮式 four skew confined leaves holistic opening turbine form	NK	070	箭叶对开圆盘涡轮式 arrow folio disk turbine form	JDY
040	四斜窄叶可拆开启涡轮式 four skew confined leaves knock-down opening turbine form	NCK	071	箭叶可拆对开圆盘涡轮式 arrow knock-down disk turbine form	JKY
041	四斜窄叶整体稳定器开启涡轮式 four skew confined leaves holistic stabilizer opening turbine form	NKW	072	平齿形圆盘涡轮式 even tooth disk turbine form	CY
042	四斜窄叶可拆稳定器开启涡轮式 four skew confined leaves knock-down stabilizer opening turbine form	NCW	073	翻齿形圆盘涡轮式 turnover tooth disk turbine form	FY
043	四叶T型开启涡轮式 four leaves T type opening turbine form	TCK	074	贴齿形圆盘涡轮式 adnate tooth disk turbine form	TY
044	三斜窄叶整体开启涡轮式 three skew confined leaves holistic opening turbine form	YK	075	三叶左旋推进式 SB90-290 SB90-291 three revolved left leaves advance form	TXL
045	三斜窄叶可拆开启涡轮式 three skew confined leaves knock-down opening turbine form	YCK	076	三叶右旋推进式 HG-222-65 three revolved right leaves advance form	TXR
046	三斜叶整体稳定器开启涡轮式 three skew leaves holistic stabilizer opening turbine form	YKW	077	三叶左旋稳定环推进式 three revolved left leaves steady ring advance form	TWL
047	三斜叶可拆稳定器开启涡轮式 three skew leaves knock-down stabilizer opening turbine form	YCW	078	三叶右旋稳定环推进式 three revolved right leaves steady ring advance form	TWR
048	三斜窄叶整体开启涡轮式 three skew confined leaves holistic opening turbine form	ZK	079	三叶左旋导流筒推进式 three revolved left leaves leading flow canister advance form	TVL
049	三斜窄叶可拆开启涡轮式 three skew confined leaves knock-down opening turbine form	ZCK	080	三叶右旋导流筒推进式 three revolved right leaves leading flow canister advance form	TVR
050	三斜窄叶整体稳定器开启涡轮式 three skew confined leaves holistic stabilizer opening turbine form	ZKW	081	三叶焊接左旋推进式 three welding revolved left leaves advance form	HXL
051	三斜窄叶可拆稳定器开启涡轮式 three skew confined leaves knock-down stabilizer opening turbine form	ZCW	082	三叶焊接右旋推进式 three welding revolved right leaves advance form	HXR
052	平直叶圆盘涡轮式 HG5-221-65 even straight leaf disk turbine form	PY	083	三叶焊接左旋稳定环推进式 three welding revolved left leaves steady ring advance form	HWL
053	平直叶对开圆盘涡轮式 SB90-280 even straight leaf folio disk turbine form	PDY	084	三叶焊接右旋稳定环推进式 three welding revolved right leaves steady ring advance form	HWR
054	斜叶圆盘涡轮式 SB90-281 skew leaf disk turbine form	ZY	085	三叶焊接左旋导流筒推进式 three welding revolved left leaves leading flow canister advance form	HVL
055	斜叶对开圆盘涡轮式 skew leaf folio disk turbine form	ZDY	086	三叶焊接右旋导流筒推进式 three welding revolved right leaves leading flow canister advance form	HVR
056	弯叶圆盘涡轮式 curly leaf disk turbine form	WY	087	三叶可调左旋推进式 three adjustable revolved left leaves advance form	TTL
057	弯叶可拆圆盘涡轮式 curly leaf knock-down disk turbine form	WCY	088	三叶可调右旋推进式 three adjustable revolved right leaves advance form	TTR
058	弯叶对开圆盘涡轮式 curly leaf folio disk turbine form	XDY	089	三叶可拆左旋推进式 three knock-down revolved left leaves advance form	TCL
059	弯叶可拆对开圆盘涡轮式 curly leaf knock-down folio disk turbine form	WKY	090	三叶可拆右旋推进式 three knock-down revolved right leaves advance form	TCR
060	螺距叶圆盘涡轮式 pitch leaf disk turbine form	LY	091	高效轴流旋桨左旋式 high efficiency flow revolving oar revolved left	GXL
061	螺距叶可拆圆盘涡轮式 pitch leaf knock-down disk turbine form	LCY	092	高效轴流旋桨右旋式 high efficiency flow revolving oar revolved right	GXR
062	螺距叶对开圆盘涡轮式 pitch leaf folio disk turbine form	LDY	093	四叶左旋推进式 four revolved left advance form	SXL
063	螺距叶可拆对开圆盘涡轮式 pitch leaf knock-down folio disk turbine form	LKY	094	四叶右旋推进式 four revolved right advance form	SXR
064	半圆弧圆盘涡轮式 half fox disk turbine form	HY	095	四叶左旋稳定环推进式 four revolved left leaves steady ring advance form	SWL
065	半圆弧可拆圆盘涡轮式 half fox knock-down disk turbine form	HCY	096	四叶右旋稳定环推进式 four revolved right leaves steady ring advance form	SWR
066	半圆弧对开圆盘涡轮式 half fox folio disk turbine form	HDY	097	四叶左旋导流筒推进式 four revolved left leaves leading flow canister	SVL
067	半圆弧可拆对开圆盘涡轮式 half fox knock-down folio disk turbine form	HKY	098	四叶右旋导流筒推进式 four revolved right leaves leading flow canister	SVR
068	箭叶圆盘涡轮式 arrow leaf disk turbine form	JY	099	三宽叶整体旋桨式 three wide leaves holistic revolving oar form	KHX
069	箭叶可拆圆盘涡轮式 arrow leaf knock-down disk turbine form	JCY	100	三宽叶可拆旋桨式 three wide leaves knock-down revolving oar form	KCX

序号 No.	摆杆器型式名称 mode name	代号 code	序号 No.	摆杆器型式名称 mode name	代号 code
101	三宽叶稳定环旋桨式 three wide leaves steady ring revolving oar form	KWY	123	带导流筒螺杆式 helix pole with leading flow canister	LGH
102	三窄叶整体旋桨式 three confined holistic revolving oar form	ZHX	124	螺带式 helix cincture form	LD
103	三窄叶可拆旋桨式 three confined knock-down revolving oar form	ZCX	125	螺带螺杆式 helix cincture and helix pole form	LDG
104	三窄叶稳定环旋桨式 three confined steady ring revolving oar form	ZWX	126	锥底螺带式 fastigate bottom helix	ZLD
105	四宽叶可拆旋桨式 four wide leaves knock-down revolving oar form	KSX	127	锥底螺带螺杆式 fastigate bottom helix cincture and helix pole form	ZLG
106	四窄叶可拆旋桨式 four confined leaves knock-down revolving oar form	ZSX	128	椭圆底框 HG5-757-78 elliptical bottom pane form	KS
107	三叶后齿左旋式 three back tooth leaves revolved left form	CL	129	直角锥底框式 square fastigate bottom pane form	KSA
108	三叶后齿右旋式 three back tooth leaves revolved right form	CR	130	钝角锥底框式 an obtuse angle fastigate bottom pane form	KSB
109	三叶后齿可拆左旋式 three back tooth leaves knock-down revolved left form	CCL	131	锚式 anchor form	MS
110	三叶后齿可拆右旋式 three back tooth leaves knock-down revolved right form	CCR	132	搪玻璃专用锚式 anchor for spreading over glass	TS
111	三叶翘曲左旋式 three warp leaves revolved left form	QL	133	锚框式 anchor pane form	MKS
112	三叶翘曲右旋式 three warp leaves revolved right form	QR	134	锚带式 anchor cincture form	MDS
113	三叶翘曲可折左旋式 three warp leaves knock-down revolved left form	QCL	135	方框式 pane form	FKS
114	三叶翘曲可拆右旋式 three warp leaves knock-down revolved right form	QCR	136	方栅式 quadrate pale form	FSS
115	三框叶刮板式 three frame leaves scraping board	KG	137	板框式 board pane form	BKS
116	三叶后掠整体式 three retral curly leaves holistic form	HQ	138	消泡叶轮 banish froth impeller	XPJ
117	三叶后掠可拆式 three retral curly leaves knock-down form	HCO	139	消泡桨 banish froth oar	XPJ
118	四叶后掠整体式 four retral curly leaves holistic form	SQ	140	泵型曝气机 pump leak gas machine	BAY
119	四叶后掠可拆式 four retral curly leaves knock-down form	SCQ	141	伞型曝气机 umbrella leak gas machine	BDY
120	三叶锥底平桨式 three leaves fastigate bottom even oar form	SZP	142	翼盘型曝气机 aerofoil leak gas machine	BQY
121	布耳马金式 buermajin form	BM	143	整体式稳定环 holistic steady ring	WH
122	螺杆式 helix pole form	LG	144	对开式稳定环 folio steady ring	WF



双级摆线针轮减速器
double stage cycloidal pin wheel decelerator



单级立式摆线针轮减速器(带 JA 支架)
single stage vertical cycloidal pin wheel decelerator (with JA frame)



JXLD 型新型机架
JXLD type new frame



JA 型机架
JA type frame



FZ 型双支点方底板机架
FZ type double-support quadrate frame



JXLD 型机架
JXLD type frame



SJ130 双支点机架
带 150mm 搅拌轴
SJ130 double-support frame
with 150mm mixer axle



XDJ 型机架 (HG21566)
XDJ type frame



DJ 型机架
DJ type frame



螺带式搅拌器
Helix cincture type beater



SZ 型底轴承
SZ type bottom bearing



非标搅拌器
Nonstandard beater



移动可调高速搅拌机
Floating adjustable high-speed blender



高速搅拌机
high-speed blender



KJ 系列可移式搅拌机
KJ series floating blender



高速搅拌机
High-speed blender



底入式搅拌机
bottom-entrance blender



搅拌器
Beater

