在使用本产品前请仔细阅读本手册，本将其放在设备附近以备将来参阅。
Before use, please read this manual carefully and be placed nearby to the equipment for future reference

CHENG

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SHANGHAI SHANGCHENG PUMP AND VALVE MANUFACTURING CO.,LTD

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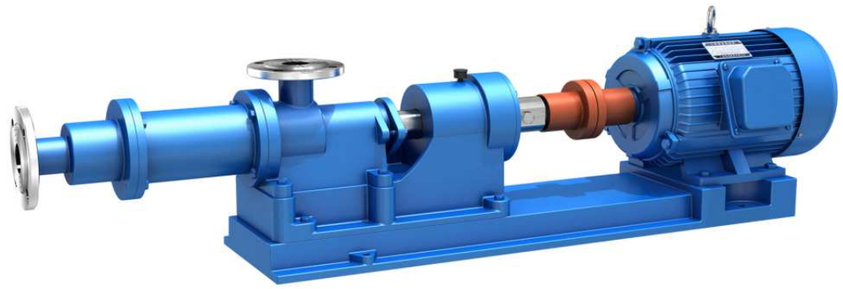
Shangcheng Pump and Valve
Being trustworthy because of its sincerity

SHANGHAI
SHANGCHENG
PUMP AND VALVE MANUFACTURING CO.,LTD

I-1B型浓浆泵（螺杆泵）

I-1B UNDERFLOW PUMPS(SCREW PUMPS)

产品说明书 Product specification



上海上诚泵阀制造有限公司
SHANGHAI SHANGCHENG PUMP AND VALVE MANUFACTURING CO.,LTD

上海上诚泵阀制造有限公司是一家集科研、开发、生产、销售于一体的泵阀企业；公司拥有一支经验丰富、勇于实践、不断创新的高素质开发、科研队伍：其中高级工程师2名，研究、设计技术人员35名，生产技术制造人员68名，现有员工总数达298人；公司拥有国内外先进的电脑微机控制性能水泵测试台，使客户更安全、更有效、更放心地使用上诚产品。

公司全面采用ISO9001：2000《质量管理体系要求》，并有效的实施；自创办以来始终把质量管理作为第一追求目标，发扬拼搏精神，争创一流的精神在泵阀行业中不断发展壮大。

公司主要生产经营各类水泵及配套蝶阀；产品畅销全国各地，广泛应用于石油、化工、电力、造纸、食品、制药、给排水工程等，深受各行业用户的一致好评，上诚秉着“以诚为贵，以质取胜”的经营理念，诚心为您提供优质的品牌产品和完美的服务，竭诚欢迎社会各界惠顾合作。

上海上诚泵阀自创办以来，一直专注于产品创新与开发，为了提高产品的档次,完善产品的售后服务，我们时刻与客户保持紧密的联系。我们本着诚信经营的原则，积极进取，勇于开拓,经过多年的努力拼搏。使上诚水泵的产品深受石油、化工、电力、造纸、环保、冶金、煤矿、食品、制药、给排水工程用户的一致好评。

北京汇源饮料食品集团	大连宜家家具	丝宝 集团	福建闽东电力公司
复旦大学附属中山医院	金红叶纸业集团有限公司	上海交通大学	三井住友银行
玖龙纸业（太仓）有限公司	内蒙古霍煤鸿骏铝公司	巨化集团公司制药厂	上海隧道工程股份有限公司
上海南汇自来水厂	上海理工大学	中粮粮油工业（巢湖）	中国石化集团上海海洋石油局
中国建设银行	浙江大学	浙江嘉化集团股份有限公司	长庆油田装备有限公司
新疆旺旺食品有限公司	太仓阳鸿石化有限公司	无锡华东可可食品有限公司	中国核工业第二三建设公司

I-1B型泵的主要故障及排除方法 Main Faults and Removal Methods of I-1B Pumps

I-1B型泵的主要故障及排除方法 Main Faults and Removal Methods of I-1B Pumps

故障 Fault	原因 Cause	排除方法 Removal method
1、启动困难 Difficult to start	1、料液未充满泵腔，摩擦阻力较大； 2、填料压盖压得过紧，轴与填料之间有摩擦力矩过大。 1、Large frictional resistance as the feed liquid doesn't fill with the pump chamber; 2、Excessive friction torque between shaft and packing due to the too tight compression of packing gland.	1、用管子钳搬动联轴器泵主轴3~6转； 2、调整填料压盖。 1、Pull the coupling with the tube spanner and the main shaft of pump rotates 3-6 cycles; 2、Adjust the packing gland properly.
2、启动后不出料液 Feed liquid doesn't come out after starting	1、有大量空气吸入； 2、电动机转向不对； 3、料液粘度过大。 1、Suction of a great deal of air; 2、Improper rotation direction of motor; 3、Excessively viscous feed liquid.	1、检查吸入口液位是否太低，吸入管是否漏气； 2、调接电动机的任意两相进线； 3、稀释料液。 1、Check whether the liquid level of the suction inlet is too low or the suction pipe leaks; 2、Adjust any 2-phase incoming line of motor; 3、Dilute feed liquid.
3、泵有较大的振动或噪音 Large vibration or noise of pump	1、电动机与泵轴不同心； 2、泵内吸入空气或料液混有大量空气。 1、Not concentric for motor and pump shaft; 2、Air suctioned in the pump or feed liquid mixed with a great deal of air.	1、重新调整同轴度； 2、检查料液位，设法排除吸入液中的空气。 1、Readjust the coaxiality; 2、Check the feed liquid level and try to remove the air in the liquid.
4、运行过程中，流量显著下降 Noticeable decrease of flow during the running	1、衬套磨损，间隙增大； 2、转速降低； 3、万向联轴节或绕轴损坏传动失效； 4、吸入管路浸入液体深度不够，有空气进入泵内。 1、Worn-out bush and widening gap; 2、Lower rotation speed; 3、Invalid drive due to damaged universal joint or paper winding shaft; 4、Air into the pump as the immersed depth of liquid in the suction pipeline is not enough.	1、更换衬套，必要时换螺杆； 2、检查电源和电机； 3、停机检修，更换轴联轴节或绕轴； 4、减小吸入高度，增加侵入深度，排除吸入料液中的空气。 1、Change the bush and change the screw if necessary; 2、Check the power supply and motor; 3、Stop the operation to check and replace the shaft coupling or paper winding shaft; 4、Decrease the suction height while increase the immersed depth to remove the air in the feed liquid.
5、电动机超载 Overload of motor	1、扬程超过泵的扬程过多； 2、料液粘度太大； 3、电压太低。 1、Head excessively beyond the pump head; 2、Too viscous feed liquid; 3、Too low voltage;	1、尽量减小管路水头损失，或更换高扬程泵。 2、稀释料液； 3、检查原因，提高电压至规定值。 1、Try to reduce the head loss of the pipeline or replace the pump with high lift head; 2、Dilute feed liquid; 3、Check the reason and increase the voltage to the required value.
6、轴封填料处大量漏液 Serious leakage on the shaft packing	1、压盖过松； 2、填料磨损； 3、进出口位置相反。 1、Too loose gland; 2、Worn-out packing; 3、Reversed inlet and outlet positions.	1、调整压盖； 2、更换填料； 3、以中间法兰口为吸入口。 1、Adjust the gland; 2、Replace the packing; 3、Set the spacer flange port as the suction port.

企业简介 BRIEF INTRODUCTION

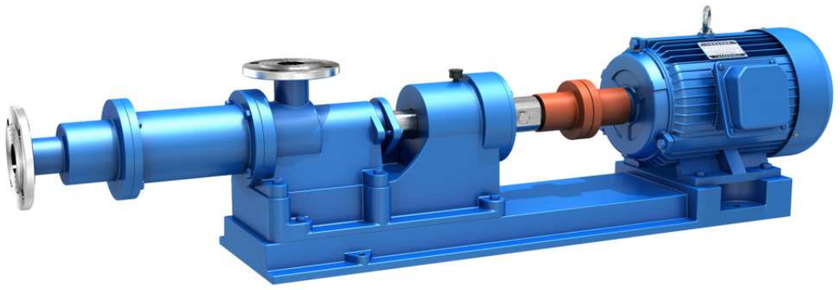
Shanghai Shangcheng Pump and valve manufacturing Co.,Ltd. is an enterprise of Researching, developing, producing and selling; The company has an experienced team to develop high quality products, 2 senior engineers, 35 designing engineers, 68 technicians, which totally amounts to 298; The company has the domestic advanced automatical system to perform water pump test, which can make the customer to use our products safely, effective and easily.

The ISO9001:2000"quality control system rpequest" always be implem ented effectively; since our company is opened, the quality control is always our first pursue goal and we are growing strong in the pump and valve industry.

Our main products are pumps and matched valves, which are sold to the strongly all over of China, it can be widely applied to petroleum, chemical industry, electric power, papermaking, food, drugs manufacturing and so on, “honesty oriented, quality comes first” is our management idea, which sincerely provides the high quality brand product and the consummation service for you.

I-1B型浓浆泵(螺杆泵)简介 Brief Introduction of I-1B Underflow Pumps (Screw Pump)

I-1B型浓浆泵(螺杆泵) I-1B Underflow Pumps (Screw Pump)



概述 Overview

- 螺杆泵是一种单螺杆式输运泵，它的主要工作部件是偏心螺旋体的螺杆（称转子）和内表面呈双线螺旋面的螺杆衬套（称定子）。其工作原理是当电动机带动泵轴转动时，螺杆一方面绕本身的轴线旋转，另一方面它又沿衬套内表面滚动，于是形成泵的密封腔室。螺杆每转一周，密封腔中的液体向前推进一个螺距。随着螺杆的连续传动，液体以螺旋形方式从一个密封腔压向另一个密封腔，最后挤出泵体。
- Screw pump is a single-screw transfer pump. Its main working parts include the screw of eccentric helicoid (called rotor) and the screw bush with a double-line helicoid on its inner surface (called stator). Its working principle goes like this: when the electromotor drives the pump shaft to rotate, the screw rotates around its own axes on one hand and rolls along the inner surface of the bush on the other, thus forming a seal cavity in the pump. When the screw rotates a cycle, the liquid in the seal cavity will advance a screw pitch forward. With the continuous drive of the screw, the liquid will press from a seal cavity to another cavity in a spiral manner until it is pressed out of the pump body finally.

- 螺杆泵是一种新型的输送液体的机械，具有结构简单、工作安全可靠、使用维修方便、出液连续均匀、压力稳定等优点。我单位生产的浓浆泵凡接触物料的金属零件均选用优质不锈耐酸钢制作，轴材料2cr13衬筒采用无毒无味的橡胶、工作温度可达100℃，可用于输送食品浆料和粘度10000泊斯卡·秒含有固体颗粒或胶块的溶液浆，悬浮液的腐蚀性介质。广泛于食品、冶金、建筑、制药、化工等工业部门。
- Screw pump is a new type of machinery for the liquid transfer. It boasts such advantages as simple structure, safe and reliable operation, easy operation and maintenance, continuous and uniform liquid discharge and stable pressure. The metal parts contacting materials of our underflow pump all adopt top-grade stainless acid-proof steel; the shaft material is 2cr13; the bush adopts nontoxic rubber with no peculiar smell; its working temperature can reach up to 100℃. It can be used for the transfer of corrosive media like foodstuff slurry, solution or suspension containing solid grains or rubber blocks with a viscosity of 10000 Pa·s. It is widely applied in such industrial sectors as food, metallurgy, construction, pharmacy and chemical industry.

■ 注意：螺杆泵所使用的介质不同应采用不同的橡胶。
Note: Different rubber for screw pumps using different media.

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I-1B型浓浆泵（螺杆泵）
I-1B UNDERFLOW PUMPS(SCREW PUMPS)

I-1B型泵应用范围举例 Examples of Application Scope of I-1B Pump

应用范围举例 Examples of Application Scope

本系列浓浆泵接触物的零件均选用优质不锈钢，螺杆衬套用中硬度橡胶制作，因而本泵最适用于食品加工行业和制药、化工等行业使用。例如:

The parts contacting materials of this series of underflow pump all adopt top-grade stainless steel and the screw bush is made of medium-hardness rubber, so it is very suitable for such industries as food processing, pharmacy and chemical industry. For example:

1、制糖厂的糖蜜、糖汁、庶渣、甜菜渣的输送;
Sugarhouses: transfer of molasses, syrup, residue of sugarcane and beet;

2、罐头厂的、食品厂的奶粉、淀粉、蜂蜜、咖啡、牛奶、奶油、食用油、各种维生素液、麦芽糖、蕃茄酱、果酱、蛋黄酱、冰淇淋等的装料和输送;
Can and foodstuff factories: milk powder, starch, honey, coffee, milk, cream, edible oil, various vitamin liquid, maltose, tomato ketchup, jam and mayonnaise;

3、酿造酒厂的酒类饮料、香料、发酵液的投料配料，压滤机装料粮食废渣的输送;
Brewage factories: feeding and proportioning of materials of alcoholic drinks, spices and fermenting liquid, feed of filter press and transfer of food residue;

4、鱼类加工厂的鱼肝油、鱼油、鱼松、鱼渣的输送;
Fish processing factories: transfer of cod-liver oil, fish oil, dried fish floss and pomace;

5、果品加工厂糖汁、果汁的输送、柑桔、水果的捣烂，填料机的加料等;
Fruit processing factories: transfer of syrup and juice, pounding of orange and fruits, feed of filling machine and the like;

6、粮油加工厂的食油、大米及玉米淀粉等的装填料及输送;
Food and oil processing factories: loading, filling and transfer of edible oil, rice, corn starch and so on;

7、肉类加工厂、屠宰物；油脂、肉油撺取、装箱、废液的输送;
Meat processing factories: extraction and encasement of grease and oil of slaughtered animals and transfer of waste liquid;

8、制药厂：各种维生素液、药液、乳剂的加料运输，悬浮液、盐水、盐污泥、药渣等输送;
Pharmacy factories: feed and transport of various vitamin solutions, liquid medicine and emulsion and transfer of suspension, saline water, saline sludge, dregs of a decoction, etc.

9、化学工业：酸、碱液的输送，各种悬浮液、油脂、胶液、各种化学染料、油漆、各种粘合剂、软膏、浆料的投料、配料和输送，尤其是一般离心式泵无法输送的各种高粘度物料、或带固体颗粒和物料本泵都能输送;
Chemical industry: transfer of acid and alkaline solutions, feeding, proportioning and transfer of various suspension, Grease, glue solution, chemical dyestuff, paint, adhesive, ointment and slurry, esp. various highly-viscous materials or Those containing solid grains which can't be transferred by general centrifugal pumps;

10、印刷油墨的配料输送;
Proportioning and transfer of printing ink;

11、造纸厂的纸浆、墨液的输送;
Paper making factories: transfer of paper pulp and ink liquid;

12、石油化工厂的油类产品，油脂、废液污泥的输送;
Petrochemical plants: transfer of oil products, grease and waste liquid and sludge;

13、乙炔站电石污泥的输送;
Ethyne stations: transfer of calcium carbide sludge;

14、建筑行业输送灰浆、石灰乳、砂浆、水泥浆等;
Construction sector: transfer of grout, milk of lime, mortar, etc;

15、可用着并泵抽水、饲料加工过程中的输送及装投类;
For pumping water, transfer, loading and feeding during the feedstuff processing;

16、广泛用于工业和生活的污水、污泥处理，污水中通常含有许多悬浮物有一定腐蚀性和粘度，往往含有固体颗粒，固而使用浓浆泵输送是合适的;
Widely applied for treatment of industrial and domestic sewage and sludge. Generally the sewage contains many Suspended matters which are a bit corrosive and viscous and always contain solid grains, so it is suitable to use the underflow pump for the transfer;

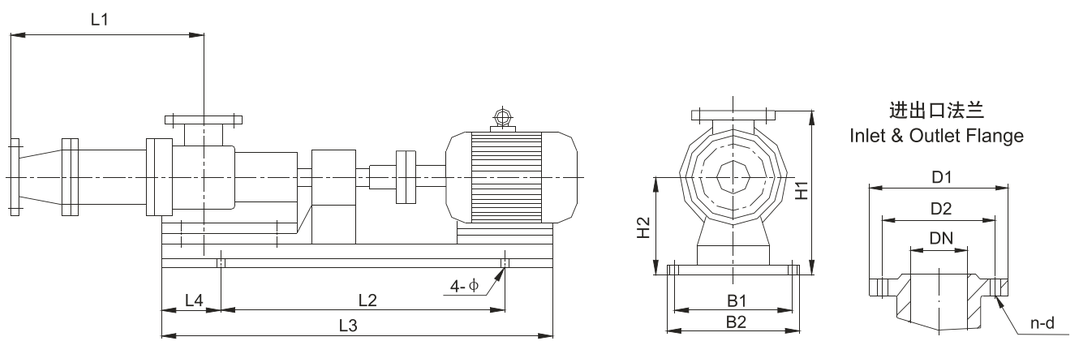
17、用于原子能发射站的污染水、污染液和其它物料的输送;
Atomic energy injection stations: transfer of polluted water and solutions and other materials;

18、矿井排污水、污泥。
Mines: drainage of sewage and sludge.

此外在钢铁工业、造船工业、陶瓷工业、制革工业水厂都能使用。
Besides, it can be applied in industries of steel, ship making, ceramics and tan as well as water plant.

I-1B型泵安装尺寸图及安装尺寸表 Installation Dimensions Drawing and Table of I-1B Pumps

安装尺寸图 Installation Dimensions Drawing



安装尺寸表 Installation Dimensions

Type 型号	外形及安装尺寸(mm) Outline and Installation Dimensions									进出口法兰尺寸(mm) Inlet & Outlet Flange Dimensions			
	L1	L2	L3	L4	H1	H2	B1	B2	ϕ	D1	D2	DN	n-d
I-1B25	250	455	620	85	225	140	160	190	14	115	85	25	4-14
I-1B(老型)25	350	495	680	90	250	160	150	190	14	115	85	25	4-14
I-1B40	275	515	830	215	282	160	220	250	14	145	110	40	4-18
I-1B(老型)40	410	720	950	120	330	200	265	300	14	145	110	40	4-18
I-1B50	370	720	950	120	330	200	265	300	14	160	125	50	4-18
I-1B(老型)50	410	720	950	120	330	200	265	300	14	160	125	50	4-18
I-1B65	410	720	950	120	330	200	265	300	14	180	145	65	4-18
I-1B75	450	820	1100	155	385	220	285	320	16	195	160	75	4-18
I-1B(老型)75	500	820	1200	230	410	230	295	330	16	195	160	75	4-18
I-1B100	500	820	1200	230	410	230	295	330	16	215	180	100	8-18
I-1B125	500	820	1200	230	410	230	295	330	16	245	210	125	8-18

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I-1B型浓浆泵（螺杆泵）
I-1B UNDERFLOW PUMPS(SCREW PUMPS)

I-1B型浓浆泵(螺杆泵)简介 Brief Introduction of I-1B Underflow Pumps (Screw Pump)

泵的安装 Installation of Pump

根据泵的总图和说明书所提供的安装尺寸浇注基础和确定地脚螺栓的位置，一般情况下不宜改变进口方向。
The casting foundation and the positioning of the anchor bolt should conform to the installation dimensions included in the assembly drawing and the instruction manual of the pump. Generally the inlet direction should not be changed.

基础面应使用水平仪校平，待基础的水泥凝固后将泵装在基础上。电机轴和泵轴的同轴度。两轴线偏移不超过±0.2毫米。倘 若其轴线不重合，就会产生振动使轴承发热，甚至损坏泵。
The base surface should be adjusted flatly with the gradienter. The pump should not mounted on the base until the cement becomes solid. The motor and pump shafts should have a coaxiality. The deviation of the two axes should not be beyond ± 0.2mm. If the axes don't coincide, the vibrancy will occur so that the bearing heats and the pump is even damaged.

泵的吸入和排出管道应有自己和支架，一般不允许泵体承受管路的重量，在泵处于倒罐工作时可以不装底阀，但应在吸入管路上装控制阀和过滤装置，以防杂物吸入泵内。泵安装在高于液面位置时，应在吸入管端装底阀，底阀喉口面积应大于吸入管截面积的百分之五十。
The suction and discharge pipelines of the pump should have their own brackets. Generally the pump body should not undertake the weight of the pipeline. It doesn't matter not to mount the foot valve during the reladling of the pump, however, the control valve and the filter should be mounted on the suction pipeline to prevent the impurities from being sucked into the pump. When the pump is installed on the position higher than the liquid level, it is necessary to mount a foot valve on the end of the suction pipe and its throat area should be 50% larger than the sectional area of the suction pipe.

泵安装前一定要彻底清除管路内的杂物，如：焊渣、金属屑等，以免泵起动时被吸入造成事故。
Before the pump installation, it is necessary to remove the impurities in the pipeline throughly like welding slag and metal scraps lest they are sucked into the pump causing accidents when the pump starts.

泵的使用 Usage of Pump

起动: 1、准备必要的扳手和工具。
Start: Prepare required spanner and other tools.
2、检查机座，轴承和油腔无润滑油。
Check that there is no lubricating oil in the machine base, bearing and oil chamber.
3、检查空心轴和轴密封程度是否适当，填料压盖不可将盘根压得过紧，允许呈滴状渗出。
Check that the hollow shaft and its seal are proper and that the packing gland should not compress too tightly on the packing set and the drip leakage is allowed.
4、用手或管子钳转动联轴器，注意泵体内有无异物碰撞杂声和卡死现象，如有应清除后方可开车。
Turn the coupling with hand or tube spanner and check that there is no clashes of foreign matters and jamming in the pump body. If any, remove them before starting.
5、将料液注满泵腔，切勿干摩擦运转，以免损坏衬套。
Fill the feed into the pump chamber and the frictional operation is not allowed to avoid the damages to the bush.
6、全开出液管的闸阀。
Open the gate valve of the liquid discharge pipe fully.
7、开电动机。
Start the electromotor.

停机: 1、关闭吸入管阀门。
Stop: Shut off the valve for the suction pipe.
2、关闭排出管阀门。
Shut off the valve for the discharge pipe.
3、停止电机。
Stop the motor.
4、当泵处于长期停止工作时，应将泵腔内料液放净，并用水或蒸汽冲洗。
In case of disuse for a long time, it is necessary to discharge the feed in the pump chamber completely and wash it with water or steam.

运转: 1、经常检查泵和电机轴承温升情况，最高温度不应超过75℃。
Running: Check the temperature rise of the pump and motor bearings often whose max. temperature should not exceed 75℃.
2、及时补充润滑油，保证轴承润滑良好。
Fill in the lubricating oil in time to ensure good lubrication performance of the bearing.
3、运转过程中，如发现异常噪声或过大振动应立即停机检查，排除故障。
In case of abnormal noise or excessive vibrancy during the running, it is necessary to stop the machine immediately to check and remove the faults.
4、当流量显著减少，说明橡胶衬套已磨损，应更换新衬套后再运转。
The noticeable decrease of flow shows the rubber bush is worn-out, so a new bush should be replaced for the operation.

I-1B型泵性能参数表 Performance Parameters of I-1B Pumps

I-1B型性能参数表 Performance Parameters of I-1B Pumps

Type 型号	Inlet & Outlet Flange 进出口径	Head (m) 扬程	Pressure (kg) 压力	Power (kw) 电机功率	Theory flow 0MPa (m^3/h) 理论流量	Q (0.6MPa、1.2MPa) (m^3/h) 流量	Suction lift (m) 吸程	r/min speed 转速
1-1B1寸	25	50	5	1.1	2.39	1.5	2	960
		100	10	2.2				
1-1B1.5寸	40	80	8	2.2	5.2	3.2	3	960
		120	12	4				
1-1B2寸	50	80	8	3	8.85	5.6	3	960
		120	12	5.5				
1-1B2.5寸	65	60	6	3	10.6	6.5	3	960
		120	12	7.5				
1-1B3寸	75	60	6	5.5	18.1	12	3	960
		120	12	11				
1-1B4寸	100	60	6	7.5	24	16	3	960
1-1B5寸	125	60	6	11	27	19	3	960
1-1B6寸	150	60	6	15	35	24	3	960

I-1B老型泵性能参数表 Performance Parameters of the Old I-1B Pumps

Type 型号	Q 流量 (m^3/h)	Head (m) 扬程	Suction lift (m) 吸程	Inlet & Outlet Flange (mm) 进出口径	r/min speed 转速	Power (kw) 配用电机	Pressure (kg) 压力
1-1B1寸	1.1	30	2	25	960	2.2	3
1-1B1.5寸	3	80	3	40	960	3	8
1-1B2寸	5.4	80	3	50	960	3	8
1-1B3寸	10	60	3	75	960	7.5	6
1-1B4寸	13	50	2	100	960	11	5
1-1B5寸	15	40	2	125	960	15	4

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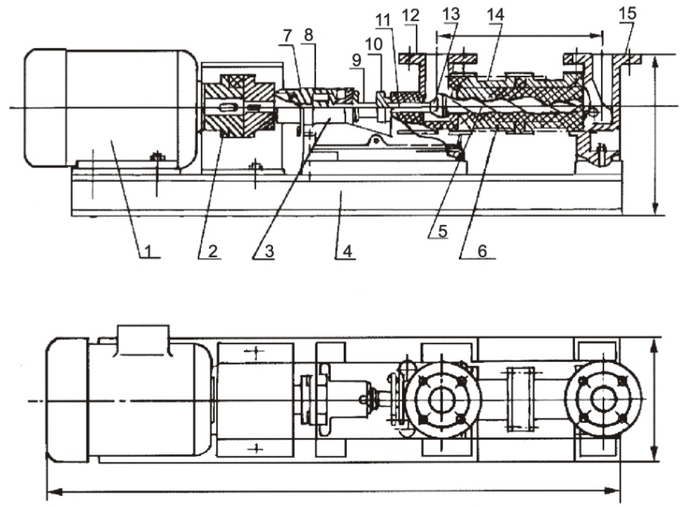
I-1B型浓浆泵（螺杆泵）
I-1B UNDERFLOW PUMPS(SCREW PUMPS)

I-1B型泵结构图 Structural Drawing of I-1B Pumps

结构图 Structural Drawing



序号 No.	名称 Name	序号 No.	名称 Name	序号 No.	名称 Name
1	电机 Power	6	橡胶套 Rubber bush	11	绕轴 Paper winding shaft
2	连轴器 Coupling	7	销帽 Pin cap	12	三通 Tee
3	泵体 Pump body	8	轴承 Bearing	13	销帽 Pin cap
4	泵电机座 Pump motor cabinet	9	空心轴 Hollow shaft	14	长筒 Boot
5	螺杆轴 Screw shaft	10	填料压盖 Packing gland	15	进口 Inlet

结构简介 Brief Introduction of Structure

- I-1B系列单螺杆浓浆泵由电动机、联轴器、泵和底座四个部分组成。
- 配用的动力采用Y系列三相异步电动机（六极）。
- 联轴器采用水泵用爪型弹性联轴器。
- 泵由泵壳、空心轴、万向铰接头、绕轴、螺杆、衬套、轴封装置和出料口等组成，螺杆的断面为圆形、衬套断面为椭圆形，其内表面为双螺旋面。
- I-1B Series single-screw underflow pump consists of four parts: electromotor, coupling, pump and base.
- It is powered by Y series 3-phase asynchronous motor (6-stage).
- It adopts a jaw elastic coupling for water pump.
- The pump consists of pump case, hollow shaft, universal joint, paper winding shaft, screw, bush, shaft gland, discharge port, etc. The section of the screw is round; that of the bush is oval and its inner surface is double-helicoid.