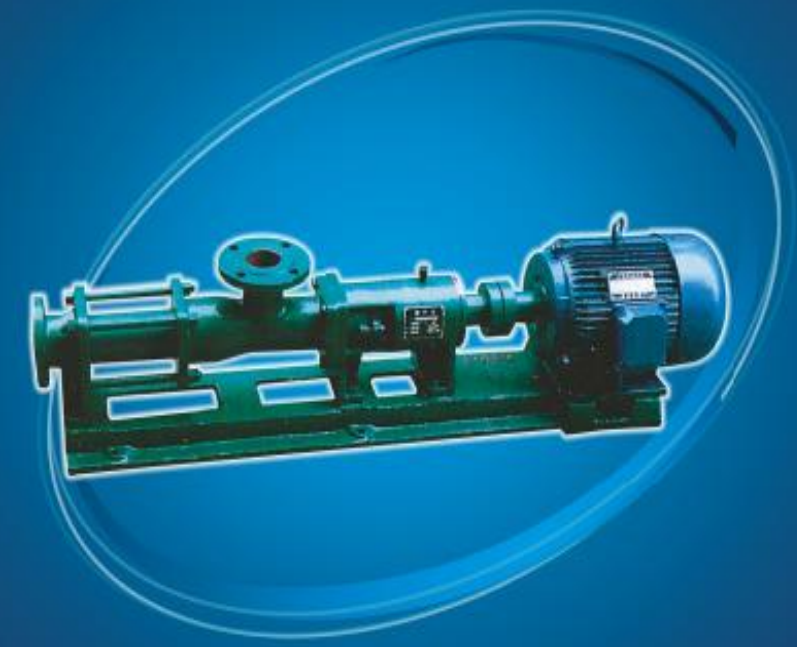


G TYPE SCREW PUMP
G型系列单螺杆泵

Use Specification | 使用说明书



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概述 Summary	3
工作原理 Principle of operation	3
型号说明 Demonstration of the type	3
泵的结构 Pump structure	3
应用范围 Applied range	4
单螺杆泵的性能表 Performance table of single screw pump	4
泵的驱动方式 The drive mode of the pump	7
泵的安装尺寸 Pump installation dimensions	8
使用注意事项 Use precautions	9
故障及其排除方法 Failure and troubleshooting methods	9

概述 Summary

G 型单螺杆泵是一种内啮合的密闭式螺杆泵。具转子式容积泵。由于这种泵对介质的适皮性强，流动平稳，吸入性能好，压力脉动小。不仅可以输送各种可流动的介质，还可以输送高粘稠介质、含有硬质悬浮颗粒或固体颗粒的介质以及含有纤维的介质，调节性能好，范围宽，效率高。因此，在环境保护、船舶、石油、医药、日化、食品、酿造、建筑、采矿、化学、印刷、造纸、电厂、锅炉等各种行业得到广泛应用。

The G-type single-screw pump is a closed internal gear pump. It functions as a rotary positive displacement pump. Due to its strong adaptability to media, smooth flow, excellent suction performance, and minimal pressure pulsation, this pump can handle various flowable media. It can also transport highly viscous media, media containing hard suspended particles or solid particles, and media with fibers. The pump has good adjustability, a wide range, and high efficiency. Therefore, it is widely used in various industries such as environmental protection, shipbuilding, oil, pharmaceuticals, daily chemicals, food, brewing, construction, mining, chemistry, printing, papermaking, power plants, and boilers.

工作原理 Principle of operation

单螺杆泵是一种内啮合回转式容积泵，主要工作部件是偏心螺杆（转子）和固定的衬套（定子），由于转子、定子的特殊几何形状，分别形成数个单独的密封容腔，转子的运转，将各个密封腔内的介质连续地、匀速地、容积不变地从吸入端输送到压出端。由于具有这些特性，单螺杆泵特别适合下列工况的工作：

1、输送高粘度的介质；2、输送含有固体颗粒或纤维的介质；3、要求连续、压力稳定、不出现周期性压力波动；4、要求搅动小、不破坏被输送介质的固有结构；5、低的噪声。

A single-screw pump is an internally meshing rotary positive displacement pump. Its main working components are the eccentric screw (rotor) and the fixed liner (stator). Due to the special geometric shapes of the rotor and stator, they form several separate sealed chambers. The rotation of the rotor continuously, uniformly, and with constant volume transfers the medium from the suction end to the discharge end.

Because of these characteristics, a single-screw pump is particularly suitable for the following applications:

1. Transport high viscosity media; 2. Transport media containing solid particles or fibers; 3. Continuous, stable pressure, no periodic pressure fluctuations; 4. Low agitation, does not destroy the inherent structure of the transported medium; 5. Low noise.

型号说明 Demonstration of the type

F G 35-1

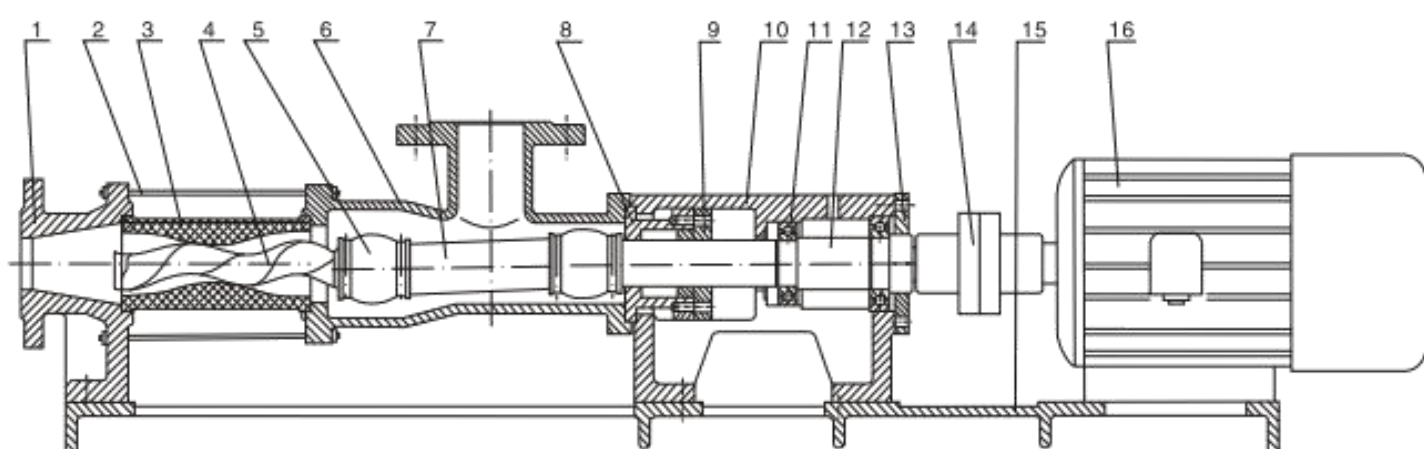
F: Indicates stainless steel pump (no letter indicates that the overcurrent parts are cast iron, and the internal parts are 2Cr13 stainless steel or wear-resistant steel)

G: Series single screw pump

35: Screw name diameter (mm)

1-Indicates a primary pump; 2-Indicates a secondary pump

泵的结构 Pump structure



1	2	3	4	5	6	7	8
Output body	Straining beam	Determiner	Screw shaft	Universal joint or pin joint	Feed body	Coupling shaft	Packing pedestal
9	10	11	12	13	14	15	16
Stuffing box gland	Bearing pedestal	Bearing	Ransmission shaft	Bearing cap	Coupler	Batholith	Electrical machinery

应用范围 Applied range

单螺杆泵作为一种通用泵，流量可以根据要求，通过改变速度进行，运行速度可高可低，出口压力可随泵的级数增加而增加，每增加一级，压力增加 0.6MPa，在以下范围和行业广泛应用：

1. 环境保护：工业污水、生活污水、含有固体颗粒及短纤维的污泥浊水的输送，特别适用于油水分离器、板框压滤机等设备；
2. 船舶工业：轮底清洗、油水、油渣、抽污水等介质的输送；
3. 石油工业：输送原油、原油与水的混合物、煤田气和水的混合物、往地层内灌注聚合物等等，从而降低了机械采油、采煤田气的成本，增加了油口采收率；
4. 医药、日化：各种粘稠浆、乳化液、各种软膏化妆品的输送；
5. 食品罐头工业：各种粘稠淀粉、食油、蜂蜜、糖浆、果浆、奶油、鱼糜肉糜以及其下脚料的输送；
6. 酿造工业：各种发酵粘稠浆液、浓酒糟、粮食制品渣、各种酱类、浆类和含有块状固态物的粘液等；
7. 建筑行业：水泥砂浆、石灰浆、涂料及其它糊状体的喷涂与输送；
8. 采矿工业：矿井内的含固体颗粒的地下水和污水水排送到地面；
9. 化学工业：各种悬浮液、油脂、各种胶体浆、各种粘合剂；
10. 印刷、造纸工业：高粘度油墨、墙纸的 PVC 高分子塑料糊和各种浓度的纸浆、短纤维浆料的输送；
11. 工业锅炉、电厂：水煤浆的输送。

As a general-purpose pump, the flow rate of a single screw pump can be changed according to requirements by changing the speed. The operating speed can be high or low, and the outlet pressure can increase with the increase of the pump grade. The pressure increases by 0.6MPa for each increase of one grade. It is widely used in the following ranges and industries:

1. Environmental protection: industrial sewage, domestic sewage, sludge turbid water containing solid particles and short fibers are transported, especially suitable for oil-water separator, plate and frame filter press and other equipment;
2. Shipbuilding industry: bottom cleaning, oil and water, oil making, sewage pumping and other media transportation;
3. Petroleum industry: the transportation of crude oil, crude oil and water mixture, coalbed methane and water mixture, injection of polymer into the formation, etc., thus reducing the cost of mechanical oil recovery, coalbed methane recovery and increasing oil recovery;
4. Medicine, daily chemicals: various viscous pulp, emulsion, various ointment cosmetics transportation;
5. Food canning industry: the transportation of various viscous starch, edible oil, honey, syrup, fruit pulp, cream, fish paste and meat paste and their by-products;
6. Brewing industry: various fermented viscous slurry, concentrated distillery waste, grain products residue, various sauces, pastes and viscous liquids containing solid lumps;
7. Construction industry: spraying and conveying of cement mortar, lime paste, coatings and other pastes;
8. Mining industry: underground water and slurry containing solid particles in mines are discharged to the ground;
9. Chemical industry: various suspensions, oils, colloidal pulp, various adhesives;
10. Printing and paper industry: high viscosity ink, wallpaper PVC polymer plastic paste and various concentrations of pulp, short fiber paste transportation ;
11. Industrial boilers and power plants: water-coal slurry transportation.

单螺杆泵的性能表 Performance table of single screw pump

model	Flow (m ³ /h)	Pressure (Mpa)	revolution (r/min)	power of motor (kw)	Required turbidity margin (m)	Imported flange diameter (mm)	Exit flange diameter (mm)	Allow particle diameter (mm)	Allow particle length (mm)
G20-1	0.8	0.6	960	0.75	4	25	25	1.5	25
G20-2		1.2		1.5					
G25-1	2	0.6	960	1.5		40	32	2	30
G25-2		1.2		2.2					
G30-1	5	0.6	960	2.2		50	40	2.5	35
G30-2		1.2		3					
G35-1	8	0.6	960	3		65	50	3	40
G35-2		1.2		4					
G40-1	12	0.6	960	4		80	65	3.8	45
G40-2		1.2		5.5					
G50-1	14	0.6	720	5.5	4.5	100	80	5	50
G50-2		1.2		7.5					
G60-1	22	0.6	720	11	5	125	100	6	60
G60-2		1.2		15					
G70-1	38	0.6	720	11		150	125	8	70
G70-2		1.2		18.5					
G85-1	56	0.6	630	15		150	150	10	80
G85-2		1.2		30					
G105-1	100	0.6	500	30		200	200	15	110
G105-2		1.2		55					
G135-1	150	0.6	400	45		250	250	20	150
G135-2		1.2		90					

单级，由齿轮变速、电磁调整电机加齿轮变速或无极变速电机加齿轮变速时的性能参数，如下图表：

Single stage, the performance parameters of gear shifting, electromagnetic adjusting motor with gear shifting or infinitely variable speed motor with gear shifting are shown in the following chart:

model	Pressure 0.3Mpa			Pressure 0.6Mpa			Variable speed		
	revolution (r/min)	Flow (m3/h)	power of motor (kw)	revolution (r/min)	Flow (m3/h)	power of motor (kw)	revolution (r/min)	Flow (m3/h)	Power of motor (kw)
G20-1	960	0.96	0.75-6级	960	0.8	0.75-6级	125-1250	0.1-1.5	1.1
	720	0.8	0.55-8级	720	0.5	0.75-8级			
	510	0.4	0.55-4级/齿轮箱	510	0.3	0.75-4级/齿轮箱			
G25-1	960	2.4	0.75-6级	960	2	1.5-6级	125-1250	0.1-3	1.5
	720	1.5	0.55-8级	720	1.27	1.1-8级			
	510	1.08	0.55-4级/齿轮箱	510	0.9	1.1-4级/齿轮箱			
G30-1	960	3.6	1.5-6级	960	3	2.2-6级	125-1250	0.2-4	2.2
	720	2.28	1.1-8级	720	1.9	1.5-8级			
	510	1.63	1.1-4级/齿轮箱	510	1.35	1.5-4级/齿轮箱			
G35-1	720	4.8	2.2-8级	720	4.04	3-8级	125-890	0.3-5	3
	510	3.36	1.5-4级/齿轮箱	510	2.8	2.2-4级/齿轮箱			
	380	1.92	1.1-4级/齿轮箱	380	1.60	1.5-4级/齿轮箱			
G40-1	510	6.8	2.2-4级/齿轮箱	510	5.6	3-4级/齿轮箱	125-890	0.3-10	4
	380	5.1	1.5-4级/齿轮箱	380	4	2.2-4级/齿轮箱			
	252	2.65	1.1-6级/齿轮箱	252	2.2	1.5-6级/齿轮箱			
G50-1	510	13.8	4-4级/齿轮箱	510	11.5	5.5-4级/齿轮箱	80-750	1-18	5.5
	380	10.2	4-4级/齿轮箱	380	7.5	5.5-4级/齿轮箱			
	252	5.6	3-6级/齿轮箱	252	4.4	5.5-6级/齿轮箱			
G60-1	510	20.8	7.5-4级/齿轮箱	510	16	11-4级/齿轮箱	63-630	1-20	11
	380	15.6	7.5-4级/齿轮箱	380	12	11-4级/齿轮箱			
	252	7.8	5.5-6级/齿轮箱	252	6	7.5-6级/齿轮箱			
G70-1	510	26	11-4级/齿轮箱	510	20	11-4级/齿轮箱	56-560	1-22	11
	380	17	7.5-4级/齿轮箱	380	13	11-4级/齿轮箱			
	252	9.1	7.5-6级/齿轮箱	252	7	7.5-6级/齿轮箱			
G85-1	380	32	11-4级/齿轮箱	380	25	15-4级/齿轮箱	37-370	2-24	15
	252	21	7.5-6级/齿轮箱	252	16	11-6级/齿轮箱			
	189	11	5.5-8级/齿轮箱	189	8	11-8级/齿轮箱			
G105-1	380	80	15-4级/齿轮箱	380	65	22-4级/齿轮箱	29-290	3-50	22
	252	44	15-6级/齿轮箱	252	34	22-6级/齿轮箱			
	189	29	11-8级/齿轮箱	189	22	15-8级/齿轮箱			
G135-1	380	132	37-4级/齿轮箱	380	120	45-4级/齿轮箱	18-180	3-56	45
	252	95	30-6级/齿轮箱	252	80	37-6级/齿轮箱			
	189	65	18.5-8级/齿轮箱	189	53	30-8级/齿轮箱			

双级，由齿轮变速、电磁调整电机加齿轮变速或无极变速电机加齿轮变速时的性能参数，如下图表：

Two levels, the performance parameters of gear shifting, electromagnetic adjusting motor plus gear shifting or infinitely variable speed motor plus gear shifting are shown in the following chart:

model	Pressure 0.3Mpa			Pressure 0.6Mpa			Variable speed		
	revolution (r/min)	Flow (m3/h)	power of motor (kw)	revolution (r/min)	Flow (m3/h)	power of motor (kw)	revolution (r/min)	Flow (m3/h)	Power of motor (kw)
G20-2	960	0.96	1.5-6级	960	0.8	1.5-6级	125-1250	0.1-1.5	1.5
	720	0.8	1.1-8级	720	0.5	1.5-8级			
	510	0.4	1.1-4级/齿轮箱	510	0.3	1.1-4级/齿轮箱			
G25-2	960	2.4	1.5-6级	960	2	2.2-6级	125-1250	0.1-3	2.2
	720	1.5	1.1-8级	720	1.27	1.5-8级			
	510	1.08	1.1-4级/齿轮箱	510	0.9	1.5-4级/齿轮箱			
G30-2	960	3.6	3-6级	960	3	3-6级	125-1250	0.2-4	3
	720	2.28	1.5-8级	720	1.9	2.2-8级			
	510	1.63	1.5-4级/齿轮箱	510	1.35	2.2-4级/齿轮箱			
G35-2	720	4.8	3-8级	720	4.04	4-8级	125-890	0.3-5	4
	510	3.36	2.2-4级/齿轮箱	510	2.8	3-4级/齿轮箱			
	380	1.92	1.5-4级/齿轮箱	380	1.60	2.2-4级/齿轮箱			
G40-2	510	6.8	4-4级/齿轮箱	510	5.6	5.5-4级/齿轮箱	125-890	0.3-10	5.5
	380	5.1	3-4级/齿轮箱	380	4	4-4级/齿轮箱			
	252	2.65	2.2-6级/齿轮箱	252	2.2	3-6级/齿轮箱			
G50-2	510	13.8	5.5-4级/齿轮箱	510	11.5	7.5-4级/齿轮箱	80-750	1-18	7.5
	380	10.2	4-4级/齿轮箱	380	7.5	5.5-4级/齿轮箱			
	252	5.6	3-6级/齿轮箱	252	4.4	5.5-6级/齿轮箱			
G60-2	510	20.8	15-4级/齿轮箱	510	16	15-4级/齿轮箱	63-630	1-20	15
	380	15.6	11-4级/齿轮箱	380	12	15-4级/齿轮箱			
	252	7.8	7.5-6级/齿轮箱	252	6	11-6级/齿轮箱			
G70-2	510	26	15-4级/齿轮箱	510	20	18.5-4级/齿轮箱	56-560	1-22	18.5
	380	17	11-4级/齿轮箱	380	13	15-4级/齿轮箱			
	252	9.1	11-6级/齿轮箱	252	7	11-6级/齿轮箱			
G85-2	380	32	18.5-4级/齿轮箱	380	25	22-4级/齿轮箱	37-370	2-24	22
	252	21	15-6级/齿轮箱	252	16	18.5-6级/齿轮箱			
	189	11	15-8级/齿轮箱	189	8	15-8级/齿轮箱			
G105-2	380	80	30-4级/齿轮箱	380	65	37-4级/齿轮箱	29-290	3-50	37
	252	44	30-6级/齿轮箱	252	34	30-6级/齿轮箱			
	189	29	22-8级/齿轮箱	189	22	22-8级/齿轮箱			
G135-2	380	132	55-4级/齿轮箱	380	120	75-4级/齿轮箱	18-180	3-56	75
	252	95	55-6级/齿轮箱	252	80	75-6级/齿轮箱			
	189	65	37-8级/齿轮箱	189	53	45-8级/齿轮箱			

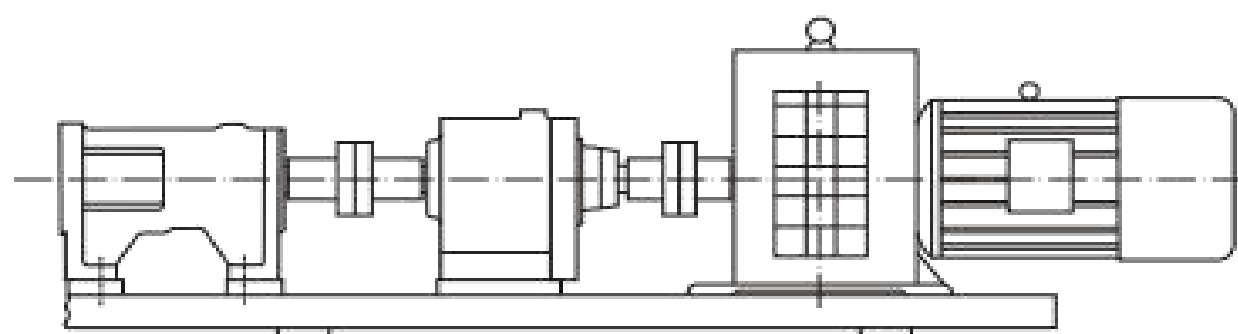
单、双级水煤浆工作泵的性能参数表如下：

The performance parameters of single and double stage water-coal slurry working pump are as follows:

model	Flow (m ³ /h)	Pressure (Mpa)	revolution (r/min)	Gear reduction is adjusted to match the motor (KW)
G30-2	~1	1.2	30~300	YCT160/4A-2.2
G35-2	~2	1.2	30~300	YCT160/4A-2.2
G40-2	~3	1.2	30~280	YCT160/4A-3
G50-1	~4.5	0.6	28~280	YCT180/4A-4
G50-2	~4.5	1.2	28~280	YCT200/4A-5.5
G60-1	~6.5	0.6	25~250	YCT200/4A-5.5
G60-2	~6.5	1.2	25~250	YCT200/4B-7.5
G70-1	~8	0.6	25~220	YCT200/4B-7.5
G85-1	~12.5	0.6	18~180	YCT225/4A-11
G105-1	~20	0.6	14~140	YCT225/4B-15
G135-1	~35	0.6	10~100	YCT250/4B-22

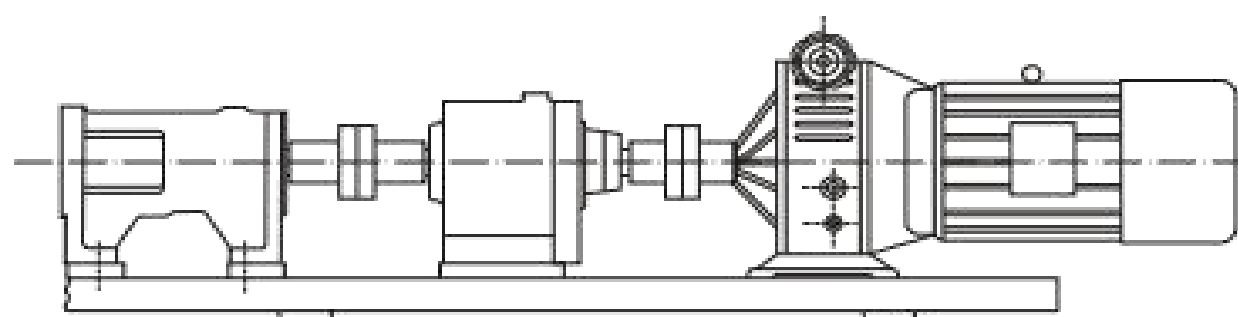
泵的驱动方式 The drive mode of the pump

齿轮配合电磁调速电机驱动



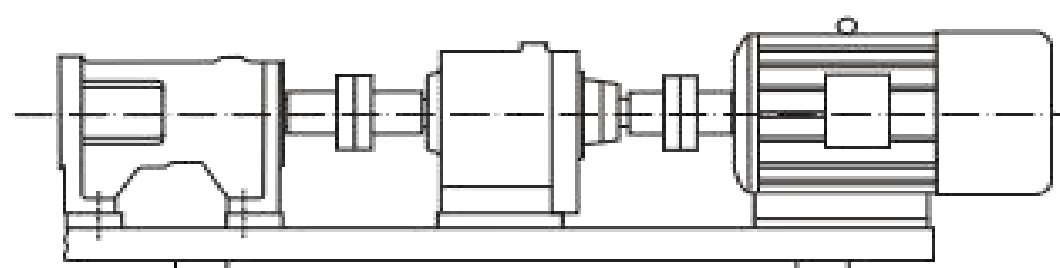
→ Gear coupling electromagnetic speed control motor drive

齿轮配合无级变速电机驱动



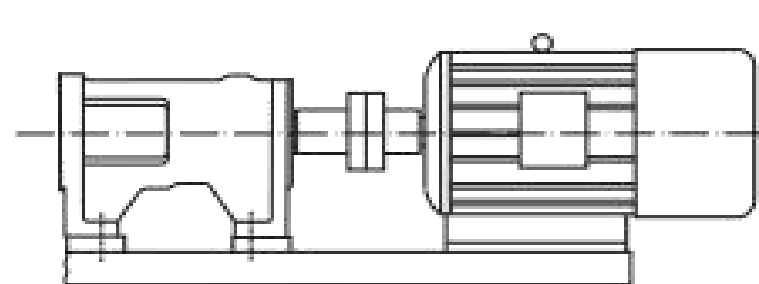
→ Gear set with infinitely variable speed motor drive

齿轮配合普通电机驱动



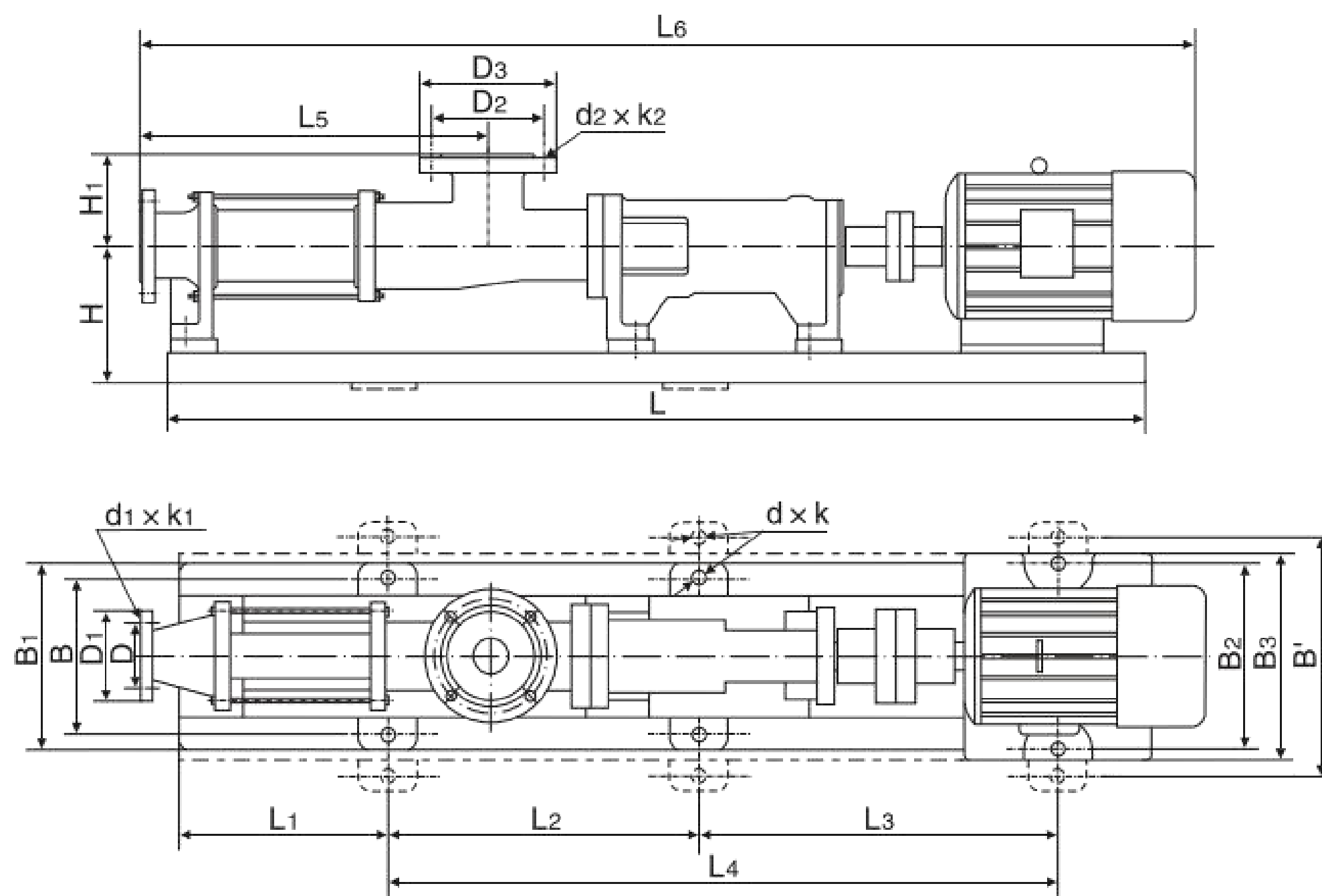
→ Gear coupling is driven by ordinary motor

普通电机直接驱动



→ Direct drive of ordinary motor

泵的安裝尺寸 Pump installation dimensions



型号	L	L1	L2	L3	L4	L5	L6	H	H1	B	B1	B2	B3	B'	D	D1	D2	D3	d x k	d1 x k1	d2 x k2
G20-1	1010	225			690	360	1150	150	95	160	190	185	215		85	115	85	115	4 x 12	4 x 14	4 x 14
G25-1	1010	225			690	360	1150	150	95	160	190	185	215		85	115	100	135	4 x 12	4 x 14	4 x 14
G25-2	1140	185			850	470	1280	150	95	160	200	220	250		85	115	100	135	4 x 12	4 x 14	4 x 14
G30-1	1150	200			850	420	1300	170	130	195	225	220	250		110	145	125	160	4 x 12	4 x 18	4 x 18
G30-2	1360	250			1000	575	1540	190	130	220	250	250	290		110	145	125	160	4 x 12	4 x 18	4 x 18
G35-1	1230	225			890	450	1410	190	135	220	250	260	285		125	160	145	180	4 x 14	4 x 18	4 x 18
G35-2	1450	125	600	600		615	1610	190	135	220	250	260	290		125	160	145	180	6 x 14	4 x 18	4 x 18
G40-1	1350	225			990	470	1510	200	130	220	250	260	285		145	180	160	195	4 x 14	4 x 18	4 x 18
G40-2	1540	120	650	650		665	1700	200	130	220	260	260	290		145	180	160	195	6 x 14	4 x 18	4 x 18
G50-1	1480	135	580	630		550	1620	225	150	250	280	250	290		160	195	180	215	6 x 16	8 x 18	8 x 18
G50-2	1800	140	760	760		790	1960	225	150	250	280	300	330		160	195	180	215	6 x 16	8 x 18	8 x 18
G60-1	1720	175	680	690		570	1810	225	160	260	300	300	330		180	215	210	245	6 x 16	8 x 18	8 x 18
G60-2	2040	200	800	800		820	2140	225	160				350	400	180	215	210	245	6 x 16	8 x 18	8 x 18
G70-1	1950	175	800	800		680	2120	245	150				350		210	245	240	280	6 x 18	8 x 18	8 x 18
G85-1	2620	210	1100	1100		945	2810	275	170				350	400	240	280	225	265	6 x 18	8 x 18	8 x 18
G105-1						1193		300	195						295	340	280	320	6 x 18	12 x 22	8 x 18
G135-1																					

说明：底盘分铸铁底盘和槽钢底盘，槽钢底盘安装尺寸按虚线所示，铸铁底盘安装尺寸按实线所示。

◇使用注意事项 Use precautions

1. 开机前必先确定方向，不得反转;
2. 严禁在无介质的情况下空运转，以免损坏定子;
3. 新安装或停机数天后的泵，不能立即启动，应先向泵体内注入适量机油或肥皂水，再用管子钳扳动几转后才可启动;
4. 输送高粘度或含颗粒及腐蚀性的介质后，应用水或溶剂进行冲洗，防止阻塞，以免下次启动困难;
5. 冬季应排除积液，防止冻裂;
6. 使用过程中轴承座内应定期加润滑油，发现轴端有渗流时，要及时处理或更换油封;
7. 在运行中如发现异常情况，应立即停车检查原因，排除故障。

1. Before starting up, the direction must be determined first, and it shall not be reversed;
2. It is forbidden to run in the absence of medium to avoid damage to the stator;
3. The newly installed pump or the pump that has been shut down for several days cannot be started immediately. First, a proper amount of oil or soap water should be injected into the pump body, and then the pump can be started after a few turns with pipe wrench;
4. After conveying high viscosity or particle-containing and corrosive media, water or solvent should be used for flushing to prevent blockage and avoid difficulty in starting next time;
5. In winter, the accumulated liquid should be removed to prevent freezing and cracking;
6. During use, lubricating oil should be added regularly in the bearing housing. When seepage is found at the shaft end, the oil seal should be handled or replaced in time;
7. If any abnormal situation is found during operation, stop immediately to check the cause and eliminate the fault.

◇故障及其排除方法 Failure and troubleshooting methods

故障 Failure	原因 Cause	排除方法 Elimination method
泵不能启动 The pump will not start	新泵转子、定子配合过紧 The new pump rotor and stator are too tight 电压太低 The voltage is too low 介质粘度过高 The viscosity of the medium is too high	用工具人力帮助转动几圈 Use human power to help turn a few times 检查、调整 Check and adjust 稀释料液 Dilute the solution
泵不出液 The pump does not deliver fluid	旋转方向不对 The direction of rotation is incorrect 吸入管路有问题 There is a problem with the suction line 介质粘度过高 The viscosity of the medium is too high 转子、定子损坏或传动部件损坏 Rotor, stator damage or transmission parts damage 泵内异物堵塞 Foreign matter blocked in the pump	调整方向 Adjust direction 检查泄漏，打开进出口阀门 Check the leak and open the inlet and outlet valves 稀释料液 Dilute the solution 检查更换 Check and replace 排除更换 Replace and remove
流量达不到 Traffic is not reaching	管路泄漏 Pipeline leakage 阀门未全部打开或局部堵塞 The valve is not fully open or partially blocked 转速太低 The speed is too low 转子、定子磨损 Rotor and stator wear	检查修理管路 Check and repair the pipeline 打开全部阀门、排除堵塞物 Open all valves and remove blockages 调整转速 Adjust the speed 更换损坏零件 Replace the damaged parts
压力达不到 Pressure is not up to par	转子、定子磨损 Rotor and stator wear	换转子、定子 Change rotor and stator
电机过热 Motor overheating	电机故障 Motor fault 出口压力过高，电机超载 The output pressure is too high and the motor is overloaded 定子烧坏或粘在转子上 The stator is burnt out or stuck to the rotor	检查电机、电压、电流、频率 Check the motor, voltage, current and frequency 检查扬程，开足出口阀门，排除阻塞 Check the head, open the outlet valve fully, and remove the blockage 更换损坏零件 Replace the damaged parts
流量、压力急剧下降 Flow and pressure drop sharply	管道突然堵塞或泄漏 The pipe suddenly clogs or leaks 定子磨损恶劣 The stator is badly worn 液体粘度突然改变 The viscosity of the liquid changes suddenly 电压突然下降 The voltage drops suddenly	检查排除 Check for exclusion renewal 更换 Replace 找出原因排除 Find the cause and eliminate it 找出原因排除 Find the cause and eliminate it
轴密封处大量泄露液体 A large amount of liquid leaks from the shaft seal	软填料磨损 Soft packing wear 机械密封损坏 The mechanical seal is damaged	压紧或更换填料 Press or replace the packing 修复或更换 Repair or replace