FLUGO

Technical Catalogue

G Series

Screw Pump

Overview

G-type single screw pump is a kind of closed screw pump with internal drying, which is a rotor-type positive displacement pump. Due to the strong adaptability of this pump to the medium, the flow is stable and the suction is stable. It has good inlet performance and low pressure pulsation. In addition to conveying various flowable media, it can also transport highly viscous media, containing hard suspended particles or solid particles. The medium and the medium containing fiber have good adjustment performance, wide range and high efficiency. Therefore, they are used in environmental protection, shipbuilding, petroleum, medicine, daily chemicals, and food. Brewing, construction, mining, chemistry, printing, papermaking, power plants, boilers and other industries are widely used.

Working Principle

A single screw pump is a kind of internal drying rotary positive displacement pump. The main working parts are an eccentric screw (rotor) and a fixed bushing (stator). Due to the rotor and stator, the main working parts are an eccentric screw (rotor) and a fixed bushing (stator). The special geometry forms several separate sealed cavities, and the operation of the rotor continuously, evenly, and with constant volume of the medium in each sealed cavity. The suction end is transported to the press-out end.Due to these characteristics, single screw pumps are particularly suitable for the following working conditions:

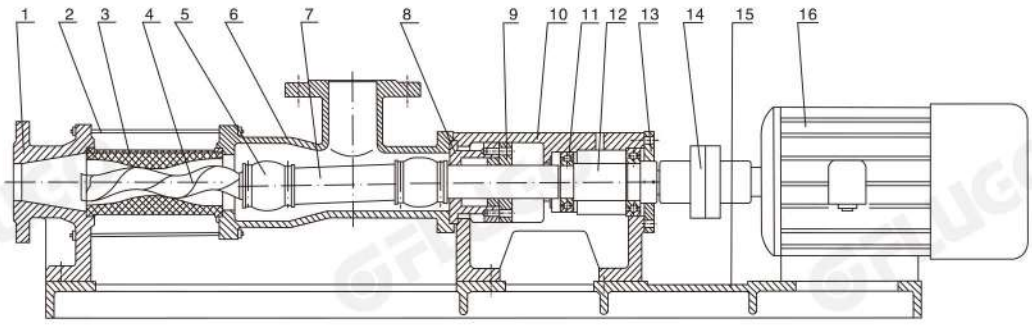
1. Conveying high-viscosity media;
2. Conveying media containing solid particles or fibers;
3. Continuous, stable pressure, and no periodic pressure fluctuations are required.;
4. It is required that the agitation is small and does not destroy the inherent structure of the transported medium;
5. Low noise.

Model description

F G 35 - 1

- 1 — 1. Indicates the primary pump; 2. indicates the secondary pump
- 35 — Nominal screw diameter (mm)
- G — Series single screw pump
- F — F means stainless steel pump (no letters indicate that the overcurrent parts are cast iron, and the internal parts are 2Cr13 stainless steel or wear-resistant steel)

Pump Structure



Serial	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Name	Discharge Body	Tie Rod	Stator	Screw Shaft	Knuckle or Pinned	Free Body	Connecting Shaft	Packing Seat	Packing Gland	Bearing Housing	Bearing Drive	Shaft	Bearing Cap	Coupling	Chassis	Motor

Scope of application

As a general-purpose pump, the single screw pump can change the speed according to the requirements. The operating speed can be high or low, and the outlet pressure can vary with the pump. The series increases with the increase of the series. For each additional level, the pressure increases by 0.6MPa, which is widely used in the following ranges and industries:

1. Environmental protection: the transportation of industrial sewage, domestic sewage, sludge containing solid particles and staple fibers, oil and water, especially suitable for oil-water separators and plates, frame speed press and other equipment;
2. Shipbuilding industry: wheel bottom cleaning, transportation of oil-water, oil residue, oil sewage and other media;
3. Petroleum industry: transportation of crude oil, a mixture of crude oil and water, a mixture of coal field gas and water, infusion of polymer into the formation, etc., thereby reducing. The cost of mechanical oil production and coal field gas production has increased the recovery rate of the oil port.;
4. Medicine, daily chemicals: transportation of various viscous pastes, emulsions, and various soft green cosmetics;
5. Canned food industry: transportation of various viscous starches, cooking oils, honey, syrups, fruit pulp, cream, fish, meat, and other scraps;
6. Brewing industry: various fermented viscous slurries, strong wine tanks, food product residues, various sauces, slurries, and mucus containing bulk solid substances, etc.;
7. Construction industry: spraying and conveying of cement mortar, lime pulp, coatings and other pastes;
8. Mining industry: Groundwater and sewage slurry containing solid particles in the mine are discharged to the ground;
9. Chemical industry: all kinds of suspensions, greases, all kinds of colloidal pastes, all kinds of adhesives;
10. Printing and paper industry: transportation of PVC polymer plastic pastes for high-viscosity inks, wallpaper, and pulp and staple fiber pastes of various concentrations.
11. Industrial boilers, power plants: transportation of coal water slurry.

Performance table of single screw pump

Performance parameters at fixed speed

Type	Flow (m^3/h)	Pressure (MPa)	Allowable Maximum Rotation (r/min)	Motor Power (kW)	Necessary NPSH (m)	Inlet Flange (mm)	Outlet Flange (mm)	Allowable Particle Diameter (mm)	Allowable Fiber 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					

Table 1

Single-stage, the performance parameters of the gear variable speed, electromagnetic adjustment motor plus gear variable speed or stepless variable speed motor plus gear variable speed

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

Table 2

Two-stage, the performance parameters of the gear variable speed, electromagnetic adjustment motor plus gear variable speed or stepless variable speed motor plus gear variable speed

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

Table 3

Performance parameters of single and two-stage coal water slurry working pumps Table 3

Type	Flow (m^3/h)	Working Pressure (MPa)	Revolution (r/min)	Wheel deceleration matching adjustment 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

Description:

1. The above performance parameters are the test data during the water test at room temperature;
2. For different media and different speeds, the performance parameters will change, and the flow value is inversely proportional to the concentration and viscosity, and proportional to the speed.;
3. The user must choose the type of pump according to the requirements of use, the condition of the conveying medium, and the selection principle, or negotiate with the company's technical department to decide the type of pump.
4. For the water slurry pump, the transmission form is gear adjustment, supporting electromagnetic speed regulating motor or mechanical stepless variable speed motor, and the flow rate is stepless and adjustable with the change of speed.

Selection principle

1. Select the speed of the pump according to the viscosity of the medium.

Medium Viscosity (Cst)	1~1000	1000~10000	10000~100000	100000~1000000
Rotation Speed (r/min)	400~1000	200~400	< 200	< 100

2. Select the speed of the pump according to the abrasion of the medium

Media wear condition	Media name	Rotation speed (r/min)
No wear	Fresh water, coagulants, oils, juices, fertilizers, water, blood, glycerin, etc	400~1000
General wear and tear	Industrial waste water, paint pigments, sticky mortar, fish, wheat skin, rapessed oil, filtered deposits, etc.	200~400
Severe wear and tear	Mud, lime pulp, stucco, clay, etc.	50~200

Note: a.The table gives special cases of the specific media transported and its abrasion properties. Please note that the characteristics of the media vary with the change of its concentration and temperature.;
b.When the specifications of the pump are larger, the speed should be selected to be lower.

3. Set the series according to the output pressure

Abrasion Resistance	Level 1	Level 2	Abrasion Resistance	Level 1	Level 2	Abrasion Resistance	Level 1	Level 2
None	0.6MPa	1.2MPa	General	0.4MPa	0.8MPa	Serious	0.2MPa	0.4MPa

Note: When choosing the speed, it should also be based on experience, because some other factors also affect the choice of speed. It is best to negotiate with the company while finalizing the above values.

4.Basic characteristics of rubber for single screw pumps

Adaptability / rubber / medium	Butyl rubber NBR	Rubber FPM	EPDM rubber EPDM	Natural rubber NR
Resistant to maximum temperature	+100℃	+150℃	+120℃	+60℃
Wear resistance	○	○	●	○
Aging resistance	●	○	○	×
Ozone resistance	×	○	○	×
Steam resistance	●	○	○	×
Flame resistance	●	○	○	×

Note : ● Very good ○ Excellent × No way

5.Single screw pump selects stator rubber according to the medium

Rubber / Adaptive / Medium	Dingyong Rubber NBR	Oxygen rubber FPM	Food rubber W-NBR	EPDM rubber EPDM	Natural rubber NR
Water (including sewage)	●	●	●	●	△
Vegetable oil	●	●	●	△	×
Mineral oil	●	●	●	×	×
Ammonia	●	×	●	△	●
Aromatic solvent	×	●	×	×	×
Concentrated alkali	●	×	●	●	×
Concentrated nitric acid	×	△	×	×	×
Glacial acetic acid	●	●	●	×	△
Dilute sulfuric acid	●	●	●	●	●
Concentrated sulfuric acid	×	●	×	△	×
Dilute hydrochloric acid	●	●	×	●	●
Concentrated hydrochloric acid	●	●	●	●	●
Hot water	△	●	△	●	×
Gasoline	●	●	●	×	×
Toluene	×	●	×	×	×
Xylene	×	●	×	×	×

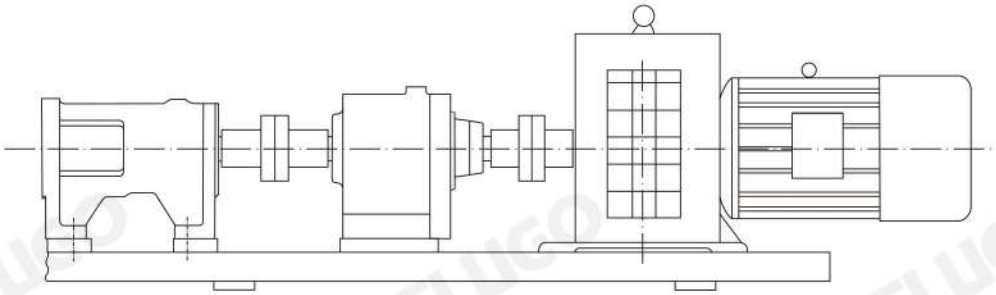
Rubber / Adaptive / Medium	Nitrile Rubber NBR	Oxygen rubber FPM	Food rubber W-NBR	ethylene propylene rubber EPDM	Natural rubber NR
Ethanol	●	●	●	△	●
Kerosene	●	●	●	×	×
Diesel fuel	●	●	●	×	×
Hydrogen chloride	×	△	×	×	×
Ketone-containing materials	×	×	×	●	×
Alcohol-containing materials	●	●	●	●	●
Fatty material	×	×	×	●	×
Ether-containing material	×	×	×	●	×
Mud	●	△	●	●	●
Phosphoric acid	△	△	△	●	●
Sodium carbonate	●	×	●	●	●
Furfural	△	△	△	●	×
Benzene 100	×	●	×	×	×
Acetone	×	×	×	●	×
Linseed oil	●	●	●	●	×
Carbon disulfide	×	●	×	×	×

Note: 1.The substances in the table are the adaptability of some commonly used media. If you have special media conditions or special requirements, you can contact the company.:

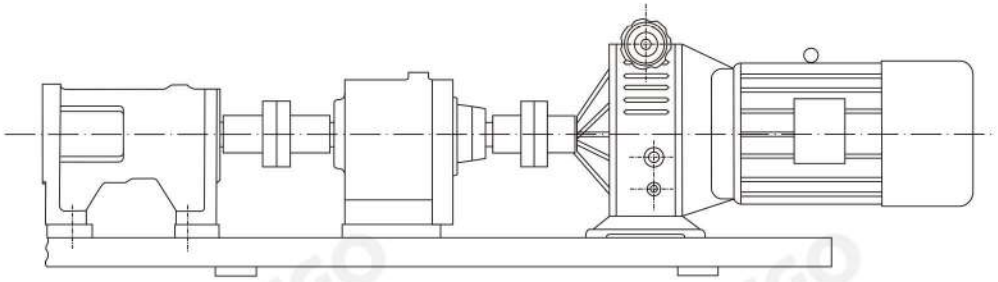
2. ● Very good ○ Excellent × No way

Pump drive method

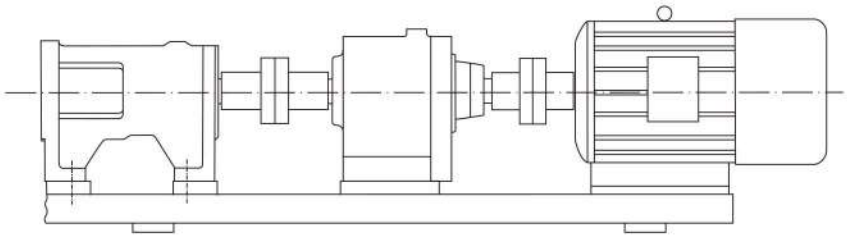
The wheel is driven by an electromagnetic speed regulating motor



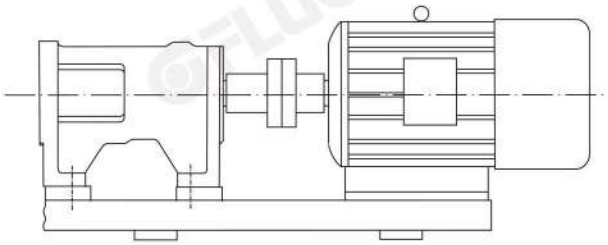
The wheel is driven by a stepless variable speed motor



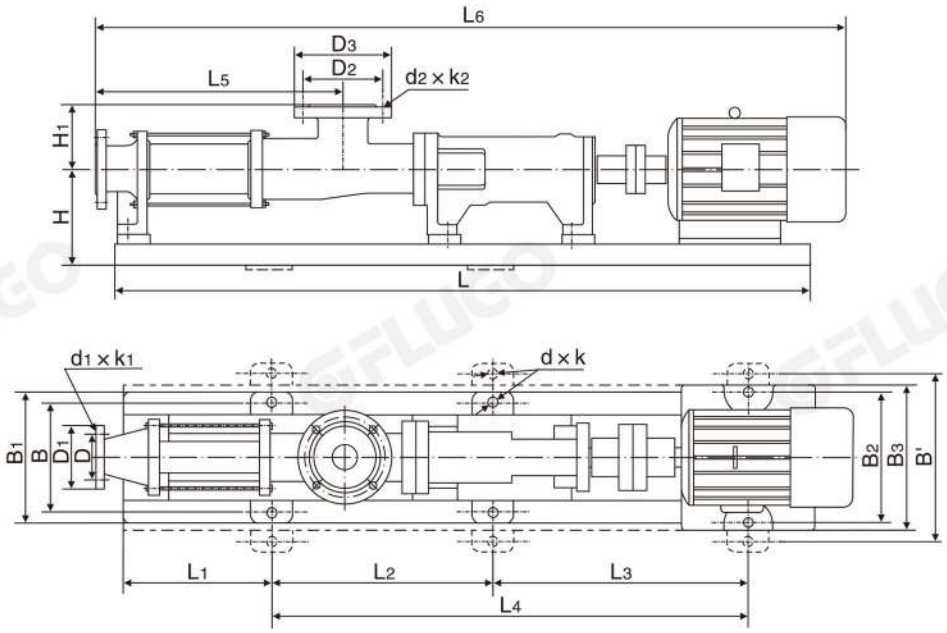
The wheel is driven by an ordinary motor



Direct drive by ordinary motor



The installation size of the pump (the size at a fixed speed, the installation size at a specific speed is attached when ordering)



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

Description: The chassis is divided into cast iron chassis and channel steel chassis. The installation dimensions of the channel steel chassis are shown in the dotted line, and the installation dimensions of the cast iron chassis are shown in the solid line.

Precautions for Use

1. The direction must be determined before starting the machine, and it must not be reversed;
2. It is strictly forbidden to transfer by air without media to avoid damage to the stator.;
3. If the pump is newly installed or shut down for a few days, it cannot be started immediately. An appropriate amount of oil or soapy water should be injected into the pump body first, and then the pipe wrench should be used to vibrate for a few revolutions, bootable;
4. After conveying high-viscosity or granular and corrosive media, rinse with water or solvent to prevent blocking and avoid difficulties in starting next time.;
5. Effusion should be eliminated in winter to prevent freezing and cracking;
6. Lubricating oil should be added to the bearing seat regularly during use. When seepage is found at the shaft end, the oil seal should be dealt with or replaced in time.;
7. If an abnormal situation is found during operation, it should be stopped immediately to check the cause and troubleshooting.

Fault and its troubleshooting method

Therefore Barrier	Original Because	Row Remove Method
The pump cannot be started	The new pump rotor and stator fit too tightly Voltage too low Medium viscosity is too high	Use tools and manpower to help rotate a few times to check and adjust to dilute the feed solution
Pump out of fluid	Wrong direction of rotation There is a problem with the suction lone the viscosity of the medium is too high The rotor and stator are damaged or the transmission parts are damaged Foreign matter in the pump is blocked	Adjust the direction. check for leaks, open the inlet and outlet valves dilute feed Check and replace exclude replacement
Traffic can't reach	Pipeline leak The valves is not fully opened or partially blocked The speed is too low The rotor and stator are worn	Check and repair pipeline Open all valves, remove blockages, adjust speed Replace damaged parts
Pressure can not reach	Rotor and stator wear	Replace the rotor and stator
Motor overheating	Motor failure Excessive outlet pressure, motor overload Stator burnt out or sticking to rotor	Check the motor, voltage, current, frequency check the head, fully open the outlet valve, remove the blockage Replace damaged parts
Flow and pressure drop sharply	Sudden blockage or leak in the pipe Bad sector wear sudden Changes in fluid viscosity sudden drop in voltage	Check exclude Replace fluid out the cause and rule out find out the cause and get rid of it
Large amount of fluid leaking form the shaft seal	Soft packing wear Mechanical seal damaged	Compress or replace packing Repair or replace

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G Series - Screw Pump

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