



**易损件 Wearing Parts**



## 产品概述

G型单螺杆泵是一种内啮合的密闭式螺杆泵，属转子式容积泵，由于这种泵对介质的适应性强，流动平稳，吸入性能好，压力脉动小，除可以输送各种可流动的介质外，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、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。G型单螺杆泵零件少、结构紧凑、体积小、维修简便，转子与定子是本泵的易损件，结构简单，便于装拆。

## 工作原理

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、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。

## Product Overview

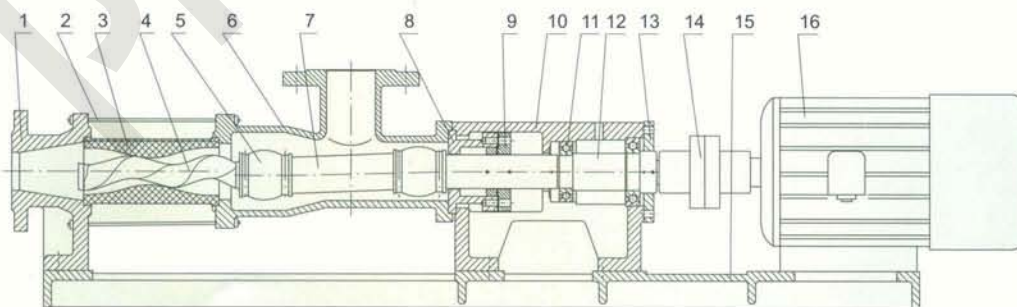
G Single Screw Pumps is an enclosed screw pump with inner gearing, a kind of rotor positive-displacement pump. As this kind of pump is characterized by being adaptable for the medium, stable flow, good suction performance and small pressure pulsation, it can transfer very viscous media or those containing hard suspended or solid grains or fiber apart from various flowing media. Besides, it boasts good adjusting performance, wide range and high efficiency. Therefore, it is widely applied in various industries like environmental protection, shipping, petroleum, pharmacy, household chemical, food, brewage, construction, mining, chemistry, printing, paper making, power plants and boilers. The pump fewer parts, compact structure, small size, maintenance is simple, the rotor and the stator is the pump wearing parts, simple structure, easy assembly and disassembly.

## Working Principle

The single screw pump is a kind of rotary positive-displacement pump with inner gearing. Its main working parts include eccentric screw (rotor) and fixed bush (stator). Due to special geometric shapes of the rotor and the stator, several separate seal cavities come into being respectively. The rotation of the rotor drives the transfer of media in all seal cavities from the suction end to the extrusion end continuously at a constant speed with the same volume. By right of these characteristics, the single screw pump is especially suitable for the following working conditions:

1. Transfer of very viscous media;
2. Transfer of media containing solid grains or fiber;
3. Requiring continuous operation, stable pressure and no regular pressure fluctuation;
4. Requiring small agitation and no damages to the inherent structure of transferred media;
5. Low noise.

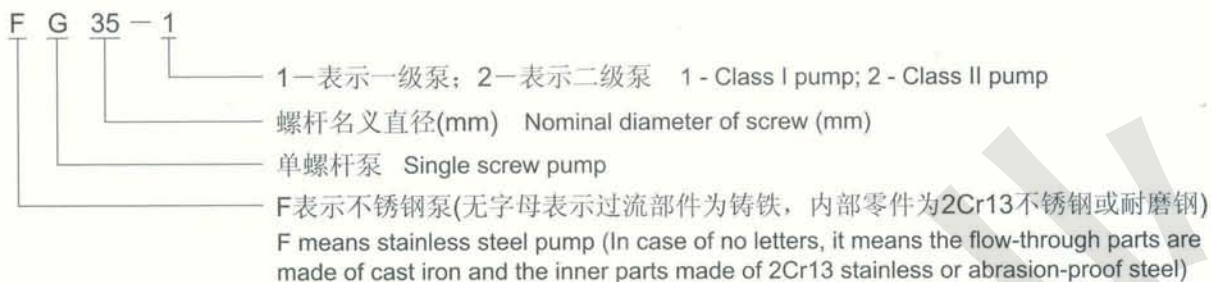
## 结构图 Structural Drawing



1	出料体 Discharger	2	拉杆 Drag rod	3	定子 Stator	4	螺杆轴 Screw shaft	5	万向节 Universal joint	6	进料体 Feeder	7	连接轴 Connecting shaft	8	填料座 Packing bracket
9	填料压盖 Packing gland	10	轴承座 Bearing bracket	11	轴承 Bearing	12	传动轴 Drive shaft	13	轴承盖 Bearing cap	14	联轴器 Coupling	15	底盘 Chassis	16	电机 Motor



## 型号意义 Model Explanation



## 应用范围 Application Scope

单螺杆泵作为一种通用泵，流量可以根据要求，通过改变速度进行调节，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、油污水等介质的输送；
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浆水排送到地面；
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 kind of universal pump, the flow of the single-screw pump can be adjusted by changing the running speed and its outlet pressure can increase along with the rise of pump stage with 0.6Mpa up per stage. It is widely applied in the following scope and industries:

1. Environmental protection: transfer of industrial and domestic sewage and sludge and turbid water containing solid grains and short fiber, esp. Applicable for oil-water separator, plate-and-frame filter press, etc.;
2. Shipping industry: washing of tanker bottom and transfer of such media as oily water, oil residue, and oily sewage;
3. Petroleum industry: transfer of crude oil, mixture of crude oil and water as well as mixture of coal field gas and water, and pouring polymer into the stratum, thus reducing costs of mechanical extraction of oil and coal field gas and increase the recovery ratio of oil field;
4. Pharmacy and household chemical: transfer of various viscous slurry, emulsion and cream cosmetics;
5. Food and can industry: transfer of various viscous amyllum, edible oil, honey, syrup, juice, cream, scrappy fish and meat and leftover bits and pieces;
6. Brewage industry: transfer of various fermented viscous slurry, thick lees, residue of food products, soy sauce products, serum products, slime containing solid blocks, etc.;
7. Construction industry: spray and transfer of grout, lime mortar, dope and other paste materials;
8. Mining industry: draining ground water and sewage containing solid grains in mines up to the ground;
9. Chemical industry: various suspensions, grease, glue slurry and adhesives;
10. Printing and paper making industry: transfer of very viscous printing ink, PVC macromolecule plastic paste of wallpaper, paper pulp with various concentrations and serum materials containing short fibers;
11. Industrial boiler and power plant: transfer of coal water slurry.

## 选型原则 Model Selection Instructions

### 1. 根据介质粘度选择泵的转速 The Rotary Speed of Pump Should be Based on the Viscosity of Medium

介质粘度 Medium Viscosity (cst)	1~1000	1000~10000	10000~100000	100000~1000000
转速 Speed (r/min)	400~1000	200~400	<200	<100

### 2. 根据介质的磨损性选择泵的转速 The Rotary Speed of Pump Should be Based on the Abrasion Property of Medium

介质磨损状况 Abrasion of medium	介质名称 Names of medium	转速 Speed (r/min)
无磨损 Nil	淡水、促凝剂、油、浆汁、肥皂水、血液、甘油等 Fresh water, coagulant, oil, paste, soap water, blood and glycedn etc.	400~1000
一般磨损 Average	工业废水、油漆颜料、粘灰浆、鱼、麦麸、菜籽油过滤后的沉积物等 Sediment of filtered industrial wastewater, paint pigment, mortar, fish, wheat bran and colza oil etc.	200~400
严重磨损 Serious	泥浆、石灰浆、灰泥、陶土、粘土等 Sludge, lime mortar, clay mortar, china clay and clunch etc.	50~200

注：a. 表中给出了所输送的具体介质及其磨损性的特例，请注意介质的特性随其浓度和温度的变化而变化。

b. 当泵的规格越大时，转速应选低一些。

Note: a. In the table is a sample of specific medium delivered and its abrasion property. Note that the characteristics of medium vary according to the change of concentration and temperature.

b. The greater the specifications of pump, the lower the rotary speed.

### 3. 按输出压力定级数 The Number of Stages Depends on Output Pressure

磨损性 Abrasion	一级 1 Stage	二级 2 Stage	磨损性 Abrasion	一级 1 Stage	二级 2 Stage	磨损性 Abrasion	一级 1 Stage	二级 2 Stage
无 Nil	0.6MPa	1.2MPa	一般 Average	0.4MPa	0.8MPa	严重 Serious	0.2MPa	0.4MPa

注：在选择转速时也要根据经验，因为一些其它因素也影响着转速的选择，在最后确定了上述数值的同时最好与本公司协商而定。

Note: The selection of rotary speed should be based on experience, as some other factors may have influence on the selection of rotary speed. After being sure of the above numerical value, you'd better consult with our company for final decision.

### 4. 单螺杆泵用的橡胶基本特性 Basic Characteristics of Rubber Used in Single Screw Pump

橡胶特性 Rubber Characteristic	丁腈橡胶 NBR	氟橡胶 FPM	乙丙橡胶 EPDM	天然橡胶 NR	食品橡胶 W-NBR
耐最高温度 Maximum temperature	+100℃	+150℃	+120℃	+60℃	+180℃
耐磨性 Wear resistance	○	○	●	○	○
耐老化性 Aging resistance	●	○	○	×	○
耐臭氧 Ozone resistance	×	○	○	×	×
耐蒸汽 Steam resistance	●	○	○	×	●
耐燃性 Flame resistance	●	○	○	×	○

注 Note : ● 很好 Very Good ○ 优 Excellent × 不行 No



## 5. 单螺杆泵根据介质选择定子橡胶 Stator Rubber is Chosen for Single Screw Pump According to Medium

介质 Medium	橡胶 Rubber	丁腈橡胶 NBR	氟橡胶 FPM	食品橡胶 W-NBR	乙丙橡胶 EPDM	天然橡胶 NR
水(含污水) Water (including sewage)		●	●	●	●	△
植物油 Vegetable oil		●	●	●	△	×
矿物油 Mineral oil		●	●	●	×	×
氨水 Ammonia		●	×	●	△	●
芳香族溶剂 Aromatic solvent		×	●	×	×	×
浓碱 Concentrated base		●	×	●	●	×
浓硝酸 Concentrated nitric acid		×	△	×	×	×
冰醋酸 Glacial acetic acid		●	●	●	×	△
稀硫酸 Dilute sulfuric acid		●	●	●	●	●
浓硫酸 Concentrated sulfuric acid		×	●	×	△	×
稀盐酸 Dilute hydrochloric acid		●	●	×	●	●
浓盐酸 Concentrated hydrochloric acid		●	●	●	●	●
热水 Hot water		△	×	△	●	×
汽油 Gasoline		●	●	●	×	×
甲苯 Toluol		×	●	×	×	×
二甲苯 Xylene		×	●	×	×	×
乙醇 Ethanol		●	●	●	△	●
煤油 Kerosene		●	●	●	×	×
柴油 Diesel oil		●	●	●	×	×
氯化氨 Ammonium chloride		×	△	×	×	×
含酮类物料 Material containing ketone		×	×	×	●	×
含醇类物料 Material containing alcohols		●	●	●	●	●
含脂类物料 Material containing lipid		×	×	×	●	×
含醚类物料 Material containing aether		×	×	×	●	×
泥浆 Slurry		●	△	●	●	●
磷酸 Phosphoric acid		△	△	△	●	●
碳酸钠 Sodium carbonate		●	×	●	●	●
糖醛 Furfural		△	△	△	●	×
苯 100 Benzene 100		×	●	×	×	×
丙酮 Acetone		×	×	×	●	×
亚麻子油 Linseed oil		●	●	●	●	×
二硫化碳 Carbon disulfide		×	●	×	×	×

注: 1. 表中介质是一些常用介质的适应性情况, 如有特殊介质情况或特殊要求可与本公司联系。

2. ● 很好 △ 一般 × 不行

Notes: 1. In the table is the applicability of some common mediums. Contact us in case of special medium or any special requirements.

2. ● Very Good △ General × No

**常规配套的性能参数 Performance parameters of conventional configuration**

型号 Model	流量 Flow Q (m <sup>3</sup> /h)	工作压力 Working Pressure (MPa)	最高转数 Max Speed n (r/min)	电机功率 Motor Power P (kW)	必需汽蚀余量 (NPSH)r (m)	进口法兰 口径 Inlet Flange Diameter (mm)	出口法兰 口径 Outlet Flange Diameter (mm)	允许颗粒 直径 Allow Particle Diameter (mm)	允许纤维 长度 Allow Fiber Length (mm)	
G15-1	0.4	0.6	960	0.55	4	25	25	0.8	15	
G15-2		1.2		0.75						
G20-1	0.8	0.6	960	0.75		25	25	1.5	25	
G20-2		1.2		1.5						
G25-1	2	0.6	960	1.5		32	25	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	20	0.6	720	5.5	4.5	100	80	5	50	
G50-2		1.2		7.5						
G60-1	30	0.6	720	11		125	100	6	60	
G60-2		1.2		15						
G70-1	45	0.6	720	11		150	125	8	70	
G70-2		1.2		15						
G85-1	65	0.6	630	15		5	150	150	10	80
G85-2		1.2		30						
G105-1	100	0.6	500	22			200	200	15	110
G105-2		1.2		37						
G135-1	150	0.6	400	45			250	250	20	150
G135-2		1.2		75						

**水煤浆工作泵的性能参数 Performance Parameters of Coal Water Slurry Working Pumps**

型号 Model	流量 Flow Q (m <sup>3</sup> /h)	工作压力 Working Pressure (MPa)	转数 Speed n (r/min)	齿轮减速配套调速电机 Gear Reduction with Adjustable Speed Motor (kW)
G30-2	~1	1.2	30~300	160/4A-2.2
G35-2	~2	1.2	30~300	160/4A-2.2
G40-2	~3	1.2	30~280	160/4A-3
G50-1	~4.5	0.6	28~280	180/4A-4
G50-2	~4.5	1.2	28~280	200/4A-5.5
G60-1	~6.5	0.6	25~250	200/4A-5.5
G60-2	~6.5	1.2	25~250	200/4B-7.5
G70-1	~8	0.6	25~220	200/4B-7.5
G85-1	~12.5	0.6	18~180	225/4A-11
G105-1	~20	0.6	14~140	225/4B-15
G135-1	~35	0.6	10~100	250/4B-22

说明：对于水煤浆泵传动形式为齿轮调速配套电磁调速电机或机械无级变速电机，流量随转速变化无级可调。

Note: The driving mode of coal water slurry pump may be gear speed regulation with electromagnetic adjustable speed motor or mechanical infinitely variable speed motor, flow rate infinitely adjustable with the variation of rotary speed.



**一级单螺杆泵齿轮减速的性能参数 Gear Reduction Performance Parameters I Class Pump**

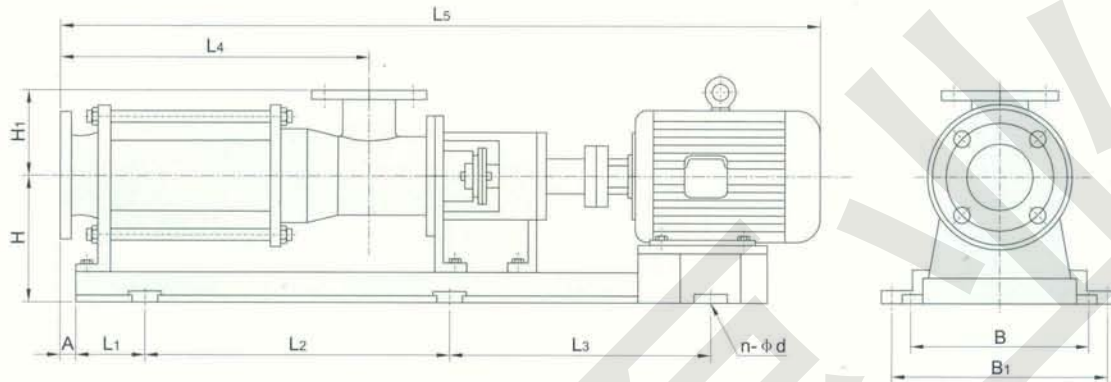
型号 Model	压力 Pressure 0.3MPa			压力 Pressure 0.6MPa			可调转数 Adjustable Speed		
	转数 Speed (r/min)	流量 Flow (m <sup>3</sup> /h)	电机功率 Motor Power (kW)	转数 Speed (r/min)	流量 Flow (m <sup>3</sup> /h)	电机功率 Motor Power (kW)	转数 Speed (r/min)	流量 Flow (m <sup>3</sup> /h)	电机功率 Motor Power (kW)
G20-1	960	0.96	0.75-6级	960	0.8	0.75-6级	125~1250	0.1~1.5	0.75
	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			

**二级单螺杆泵齿轮减速的性能参数 Gear Reduction Performance Parameters II Class Pump**

型号 Model	压力 Pressure 0.8MPa			压力 Pressure 1.2MPa			可调转数 Adjustable Speed		
	转数 Speed (r/min)	流量 Flow (m³/h)	电机功率 Motor Power (kW)	转数 Speed (r/min)	流量 Flow (m³/h)	电机功率 Motor Power (kW)	转数 Speed (r/min)	流量 Flow (m³/h)	电机功率 Motor Power (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			

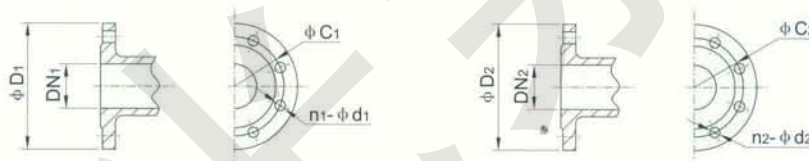


## 外形及安装尺寸 Overall and Installation Dimensions



进口法兰尺寸  
Inlet Flange Dimensions

出口法兰尺寸  
Outlet Flange Dimensions



型号 Model	外形尺寸 Overall Dimensions										法兰尺寸 Flange Dimensions								
	A	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L <sub>5</sub>	H	H <sub>1</sub>	B	B <sub>1</sub>	n-φd	DN <sub>1</sub>	φD <sub>1</sub>	φC <sub>1</sub>	n <sub>1</sub> -φd <sub>1</sub>	DN <sub>2</sub>	φD <sub>2</sub>	φC <sub>2</sub>	n <sub>2</sub> -φd <sub>2</sub>
G20-1	25	60	585	-	216	818	148	74	140	140	4-φ14	25	115	85	4-φ14	25	115	85	4-φ14
G25-1	25	245	680	-	342	1160	150	97	185	245	4-φ14	32	135	100	4-φ18	25	115	85	4-φ14
G25-2	25	245	840	-	482	1324	162	97	185	275	4-φ18	32	135	100	4-φ18	25	115	85	4-φ14
G30-1	28	200	810	-	389	1235	172	102	220	280	4-φ18	50	165	125	4-φ18	40	150	110	4-φ18
G30-2	28	240	930	-	540	1460	292	102	230	330	4-φ18	50	165	125	4-φ18	40	150	110	4-φ18
G35-1	20	240	890	-	455	1420	194	112	235	335	4-φ18	65	185	145	4-φ18	50	165	125	4-φ18
G35-2	20	270	1030	-	596	1596	194	112	235	335	4-φ18	65	185	145	4-φ18	50	165	125	4-φ18
G40-1	20	230	945	-	457	1480	204	120	270	340	4-φ18	80	200	160	8-φ18	65	185	145	4-φ18
G40-2	20	230	1090	-	597	1620	204	120	270	340	4-φ18	80	200	160	8-φ18	65	185	145	4-φ18
G50-1	17	275	1100	-	536	1663	215	135	300	345	4-φ18	100	220	180	8-φ18	80	200	160	8-φ18
G50-2	17	150	715	715	710	1910	243	135	300	395	6-φ18	100	220	180	8-φ18	80	200	160	8-φ18
G60-1	40	100	705	705	548	1790	234	145	250	250	6-φ18	125	250	210	8-φ18	100	220	180	8-φ18
G60-2	-	200	800	800	820	2140	225	160	-	400	6-φ18	100	220	180	8-φ18	125	245	210	8-φ18
G70-1	40	100	750	750	880	2230	255	140	200	250	6-φ18	150	285	240	8-φ18	125	245	210	8-φ18
G85-1	-	210	1100	1100	965	2810	275	170	-	400	6-φ18	150	285	240	8-φ18	150	265	225	8-φ18