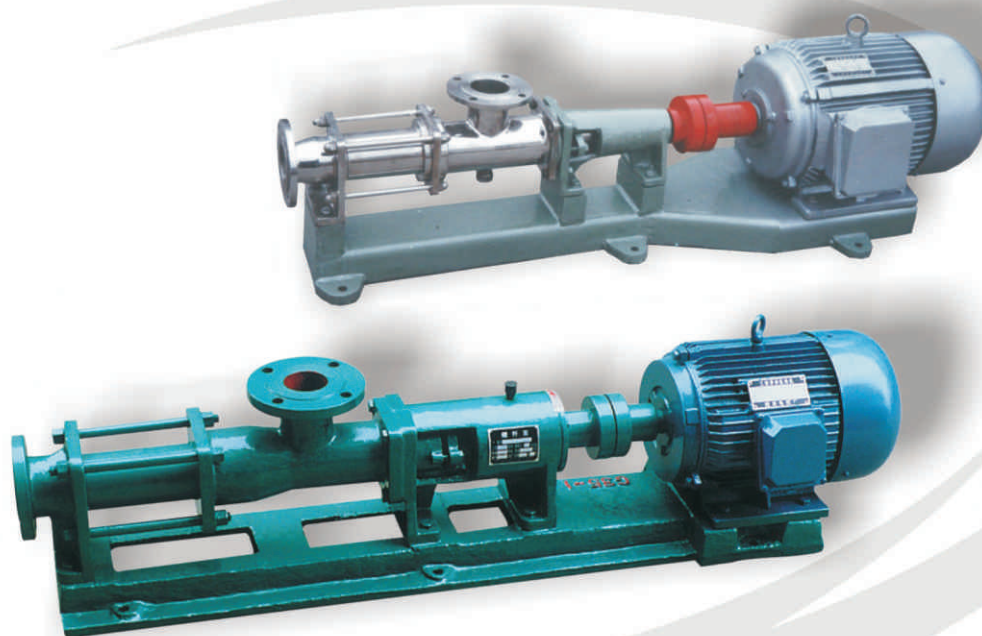


TG & TFG Series Single Screw Pump



THONG FATT JAYA MACHINERY HARDWARE SDN. BHD.

同發機械五金有限公司 (176024-V)

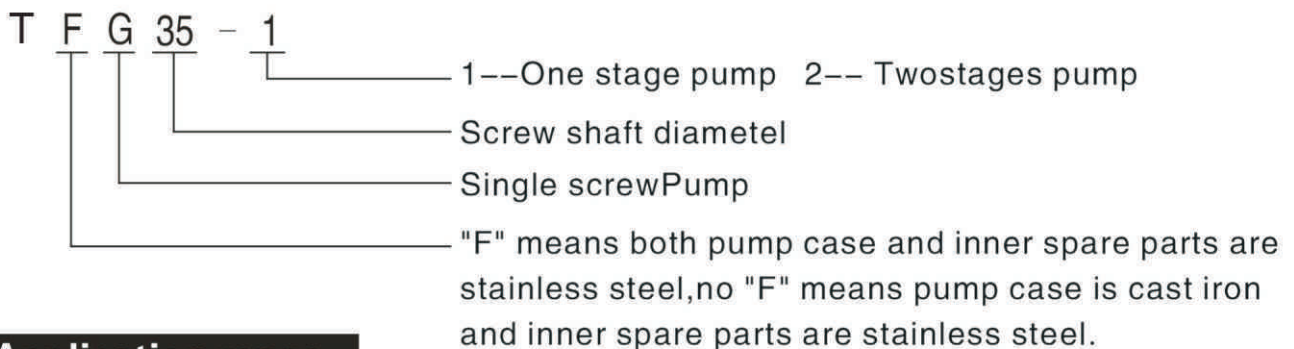
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Summary

The single screw pumps are developed from positive displacement pumps. The main parts are eccentric screw (rotary) and fixed shaft bushing (stator). Because of special geometry of the rotary and stator, there are two independent sealing space. When fluid flows axially and evenly, the speed is low inside, the sealing space remains same and the pressure is stable, so there is no vortex or stir occurred. The output pressure of every stage is 0.6MPa. The discharge head is 60meters (clean water) and suction height is 6meters, so the pump is fit for conveying all kinds of fluids which are under 80 Deg. C..(if special required, the temperature can reach 150 Deg. C). The stators are made of many flexible materials, so the pump has a special advantage which can pump high viscosity fluid or fluid including hard solids and/or fiber. The bigger capacity is, the higher speed is. The pump can be driven by turning coupling directly or connected with adjustable speed motor, triangular belt, gear box or other facilities. The pump has many other advantages, like few spares, compact in structure, small volume, easily repairing and simply assembly/disassembly.

Model meaning



Application range

Generally, the single screw pump can be used as a universal pump. The pumping speed can be high or low. The output power can be increased when stage increases. One stage increases, the pressure increase 0.6MPa. The application range is very wide.

1. Environment protecting: transfer industrial waste water, civilized waste water, water with solids and short fibers. The pump is specially suitable for separating oil and water.
2. Shipping industry: cleaning bottom of vessel and transfer oil water, oil residue or oil stain.
3. Petro industry: transfer crud oil. The pump has successfully pumped mixture of crud oil and water from thousands of meters deep recent years, so reduced the cost of mechanical oil collecting.
4. Medical and daily chemical industry: transfer all kinds of high viscosity jam, emulsion and ointment cosmetics.
5. Canned food industry: transfer all kinds of high viscosity starch, eating oil, honey, sugar jam, cream, fish meat and so on.
6. Brew industry: transfer all kinds of high viscosity fluid, lees, liquor waste and so on.
7. Build industry: transfer and spray mortar and plaster.
8. Metallurgical and mine industry: transfer oxide and waste water, liquid explosive and drain off water from mine.
9. Chemical industry: transfer all kinds of suspension, colloid and binder.



SINGLE SCREW PUMP

Table of performance parameter

Model	Capacity m ³ /h	Pressure Mpa	Head m	Power kw	Speed r/min	Diam mm		Max. Passing rate mm	
						Inlet	Outer	Solid	Fiber length
20-1	0.8	0.6	60	0.75	960	25	25	1.5	25
25-1	2	0.6	60	1.5	960	32	25	2	30
25-2	2	1.2	120	2.2	960	32	25	2	30
30-1	5	0.6	60	2.2	960	50	40	2.5	35
30-2	5	1.2	120	3.0	960	50	40	2.5	35
35-1	8	0.6	60	3.0	960	65	50	3	40
35-2	8	1.2	120	4.0	960	65	50	3	40
40-1	12	0.6	60	4.0	960	80	65	3.8	45
40-2	12	1.2	120	5.5	960	80	65	3.8	45
50-1	20	0.6	60	5.5	960	100	80	5	50
50-2	20	1.2	120	7.5	960	100	80	5	50
60-1	30	0.6	60	11	960	125	100	6	60
60-2	30	1.2	120	15	960	125	100	6	60
70-1	45	0.6	60	15	720	150	125	8	70
70-2	45	1.2	120	18.5	720	150	125	8	70
85-1	60	0.6	60	15	720	150	150	10	80
105-1	100	0.6	60	22	500	200	200	15	110
135-1	150	0.6	60	37	400	250	250	20	150

Notification:

- 1.The above testing data are got from clean water at 20 deg. C and viscosity is 1mm²/s.
- 2.When pump is transferring high viscosity fluids or with solids, the speed can be different.
- 3.When pump transferring different abrasive fluids, the speed can be different.

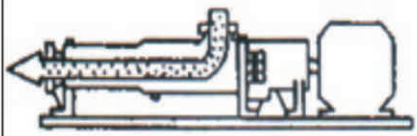
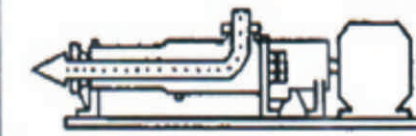
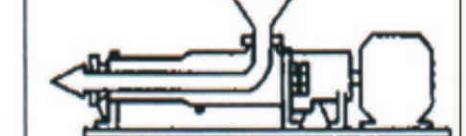
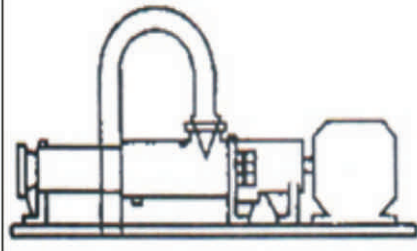
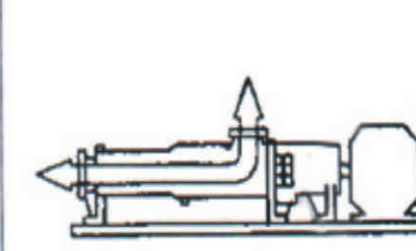
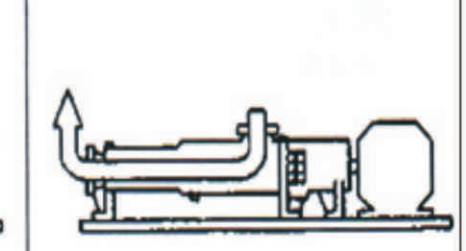
Please select speed according to below fluid viscosity

Viscosity	1-1000 (cst)	1000-10000 (cst)	10000-100000 (cst)	100000-1000000 (cst)
Speed	600-1000	300-600	200-400	20-100

Please select speed according to below different abrasive fluids

No abrasive	Fresh water, accelerator, oil, jam, minced meat, blood, soap-suds, glycerin and so on.	600-1000
Common]Abrasive	Sediment after filter from slurry, industrial waste water, painting, mortar, fish, colza oil and so on.	300-600
Heavy abrasive	Grey pulp, clay, plaster, pottery clay and so on.	50-200

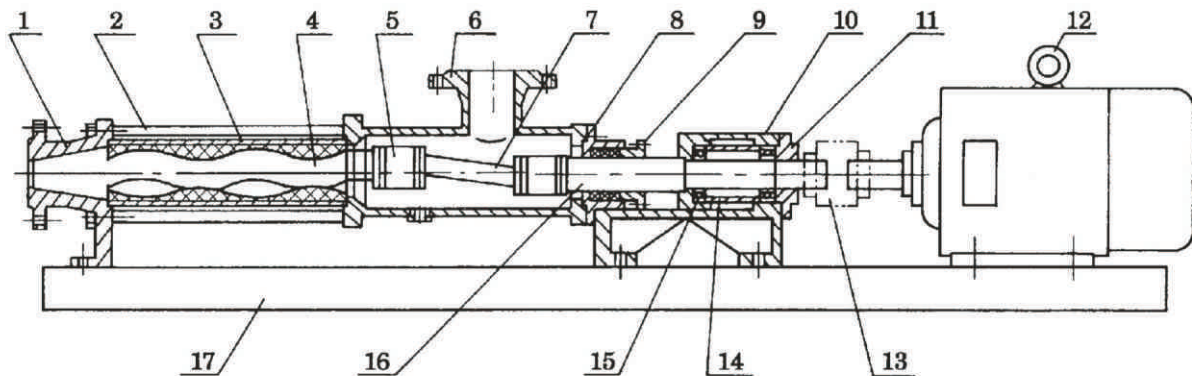
Advantages

<p>Can convey fluids with air when under.</p> 	<p>Can convey liquids with fiber and solids.</p> 	<p>The suction port is with feeding hopper, so the pump.</p> 
<p>High self suction.</p> 	<p>Opposite direction conveying.</p> 	<p>Convey very high viscosity fluids with water..</p> 

Possible drive arrangements

Possible drive arrangements	Explanation		
	G With flexible coupling and electric motor with electronic variable speed drive		G With flexible coupling and geared motor.
	G With flexible coupling and infinitely variable speed drive		G With V-belt drive, adjustable motor platform and motor situated above pump.

Structure drawing



1. discharge port 2. drawbar 3. stator 4. screw shaft 5. universal joint
 6. suction port 7. coupling shaft 8. packing housing 9. packing gland
 10. bearing housing 11. bearing cover 12. motor 13. coupling
 14. shaft sleeve 15. bearing 16. drive shaft 17. base plate

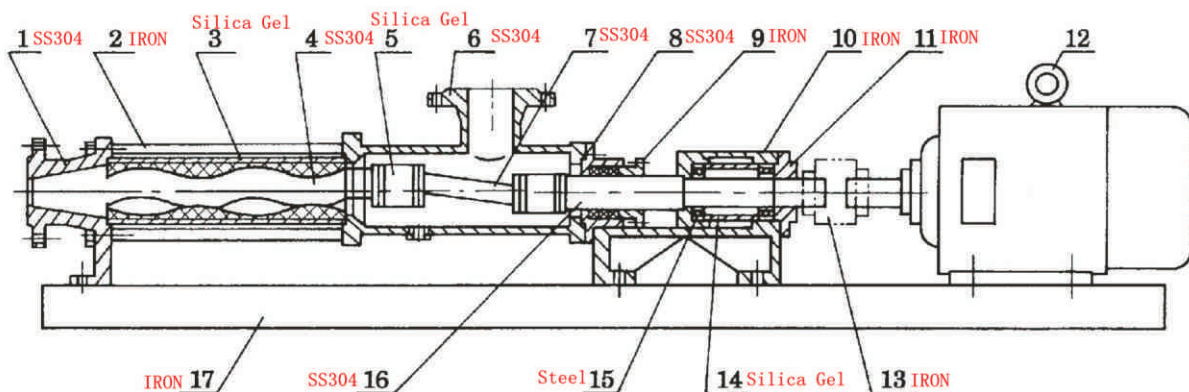
Notice

1. Please confirm the rotating direction before start. Rotate reversedly is not allowed.
2. Rotate without fluid because the stator will be damaged, is not allowed.
3. Please do not start immediately just after installation or a few days of relax. Please inject an amount of mechanical oil into the pump and turn a few turns with pipe wrench, then start the pump.
4. Wash the pump with water or solvent after transferring high viscosity fluid or fluid with solids and corrosion. Otherwise the pump might be blocked, and cause difficulty when next operation.
5. Please bleed out hydrops from pump in winter to avoid frost crack.

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6. Please add lubricants into bearing housing regularly during operation. In case there is leaking from shaft end, please remove the leaking or exchange oil sealing.

7. Stop immediately when there is abnormal condition and check problems.

Malfunctions and methods to exclude

Malfunctions	Reasons	Methods
Can't start the new pump	<ol style="list-style-type: none"> 1.The new rotor and stator are too tight. 2.Either the power or voltage is too low. 3.The viscosity of fluid is too high. 	<ol style="list-style-type: none"> 1.Turn a few of turns by hand with tools. 2.Check and adjust. 3.Dilute the fluid.
Can't transfer the fluid out.	<ol style="list-style-type: none"> 1.The rotating direction is wrong. 2.Inlet pipe is wrong. 3.The viscosity of fluid is over high. 4.The rotor or stator or other part is damaged. 5.Something blocked the inner pump. 	<ol style="list-style-type: none"> 1.Change the direction. 2.Check the leaking and open inlet and outlet valves. 3.Dilute the fluid. 4.Check and exchange the damaged parts. 5.Bleed out and exchange.
The capacity can't meet requirement.	<ol style="list-style-type: none"> 1.Leaking on pipeline. 2.The valve is not completely opened or partly blocked. 3.The speed is too low. 4.Abrasion on rotor or stator. 	<ol style="list-style-type: none"> 1.Check and repair pipeline. 2.Open the valve completely and bleed out the block. 3.Adjust the speed. 4.Exchange the damaged parts.
The pressure can't meet requirement.	Abrasion on rotor or stator.	Exchange rotor or stator.
The motor is too hot.	<ol style="list-style-type: none"> 1.The motor itself has problem. 2.The pressure of outlet is too high, so caused motor overload. 3.Stator is burnt or sticks on rotor. 	<ol style="list-style-type: none"> 1.Check motor, electric power, voltage and frequency. 2.Check discharge head , open valve completely and bleed out the block. 3.Exchanged damaged parts.
Capacity and pressure descend rapidly.	<ol style="list-style-type: none"> 1.Pipeline is blocked or leaking suddenly. 2.Stator wears and tears seriously. 3.Viscosity of fluid changes suddenly. 4.Electric voltage descends rapidly. 	Check and adjust one by one.
Big leaking on shaft sealing.	<ol style="list-style-type: none"> 1.Packing wears and tears. 2.Mechanical sealing is damaged. 	<ol style="list-style-type: none"> 1.Tight or exchange packing. 2.Repair or exchange.

