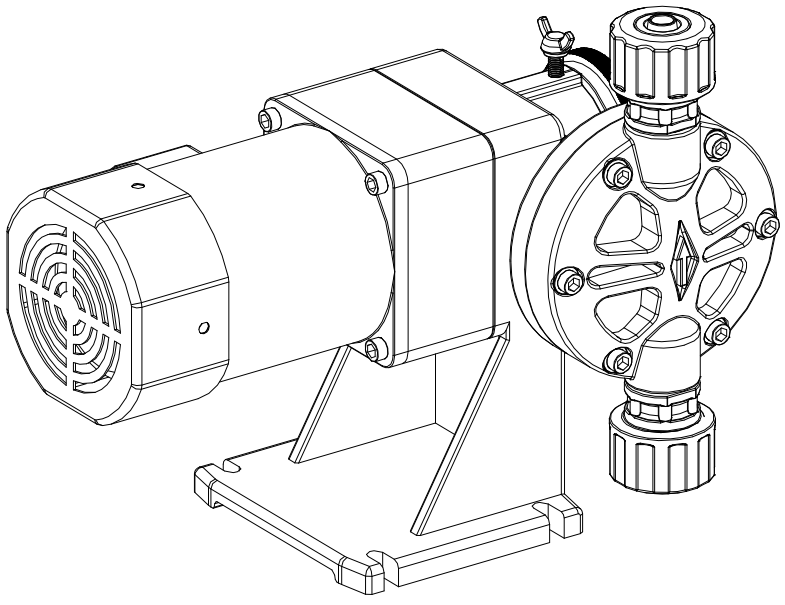
LIGAO METERING PUMP

USER MANUAL

JBB Series Diaphragm Metering Pump



Please read the manual carefully before operations!

ATTENTION

Dear user, thanks for purchasing and using LIGAO series products.

For your safety and the benefit, before using this equipment, please read the manual carefully. If you are not used in accordance with manual, causing any finiancial loss, LIGAO company will not bare any responsibility.

About this user manual:

1. The copyright of manual belongs to LIGAO
2. Inconsistencies between instructions and the actual products, LIGAO Company has the final say.
3. The manual is an integral part of this product, please keep it.

If you have any comment or question about this manual or our products, pls contact the local distributor or LIGAO Company.

TEL: +86-576-85289780

FAX:+86-576-85668297

Email: sales@ligaopumps.com

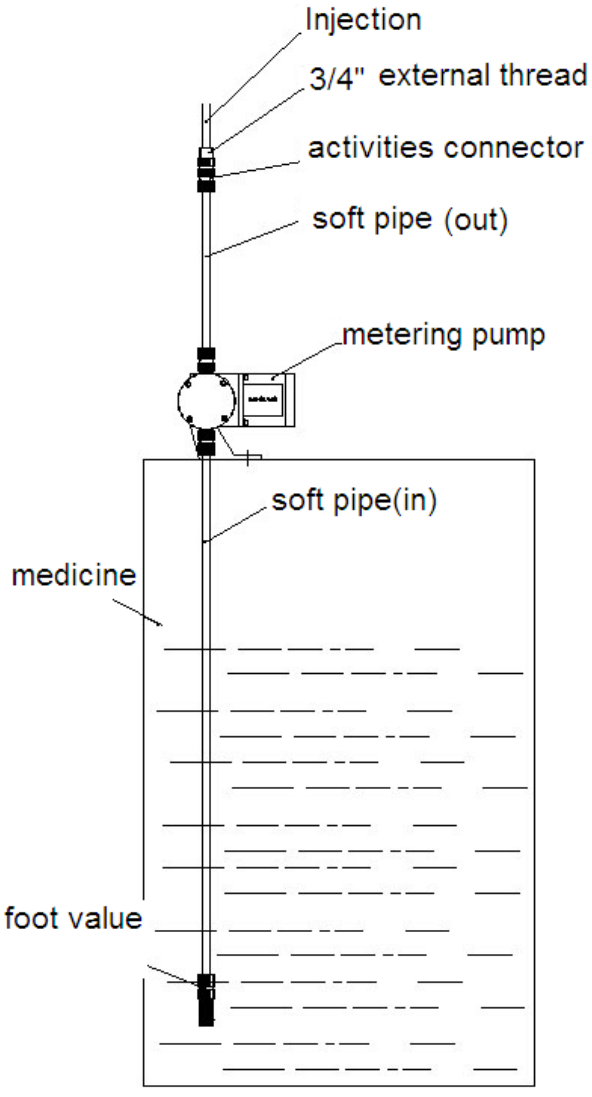
Web: www.ligaopumps.com

ZHEJIANG LIGAO PUMP TECHNOLOGY CO., LTD.

Notice

- The metering pump motor wiring must be in accordance with the motor nameplate voltage wiring (380Vor 220V)
- Make sure all value is open before start the metering pump
- This device uses electrical opportunity accompanied by a fever, because this is a sealed motor, is a normal phenomenon.

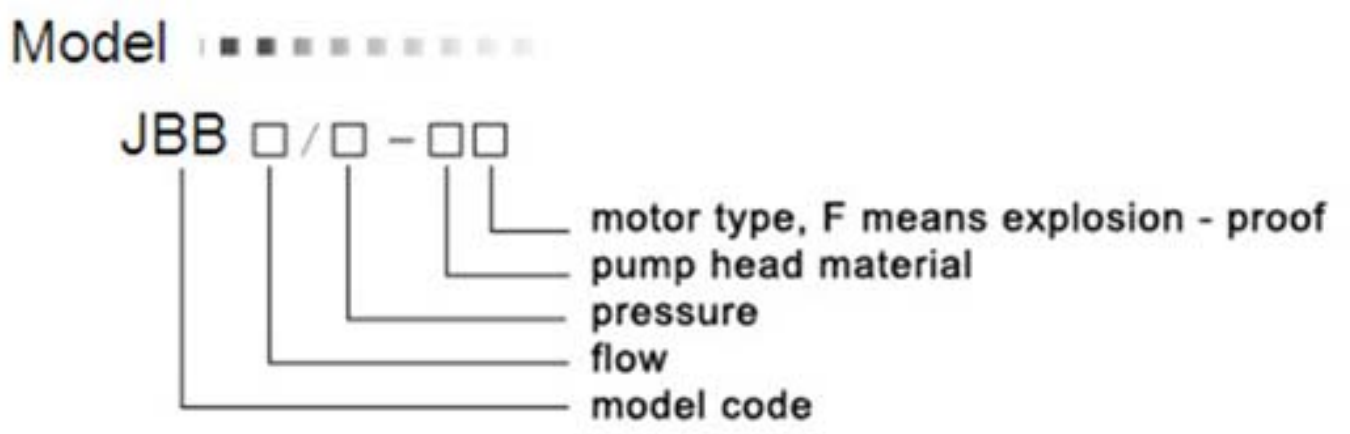
Standard Installation Diagram:



Contents

1. SUMMARIZE

JBB series diaphragm metering pump is a reciprocating type. It has various pump head material as PVC, stainless steel, and PTFE.



The pump can be widely used in petroleum, chemical, textile, food, paper, nuclear technology, power plants, plastics, pharmaceuticals, water plants, environmental protection and other industrial and technological sectors. Pump used in transferring of liquids without solid particles to pressure or constant pressure vessel and piping with precise quantitative. Flow adjustment can be ranged from 0-100 %.(According to the characteristics of the metering pump, minimum stroke length should be more than 10% of the maximum stroke length).

JBB series can pump liquid which doesn't contain solid particles, temperature ranged from -30 ℃ to 60 ℃ and viscosity 0.3-1000mm2 / s.

JBB series pump motor can be customized as 220v or 380v.

More information about model specifications and parameters of the pump, please refer to the catalogue.

2.THE STRUCTURE and FEATURES

STRUCTURE: Pump is made of motor, gearbox, pump head etc.

- Gearbox components are made of cam, stroke adjustment and the speed ratio gear; by rotating the hand wheel to adjust the stroke length to achieve the purpose of changing the flow.
- Cylinder is made of pump head, inhalation values, exhaust values, diaphragm and diaphragm base composition.

WORKING PRINCIPAL: The motor drives the spindle and eccentric rotation of the rotary motion through the gear reducer. Driven by the eccentric wheel, mandrel makes reciprocating movement, together with the diaphragm. The pump chamber through the check valve of the role gradually formed a vacuum, the suction valve is open, inhaling liquid; when the diaphragm is dead to move forward, the suction valve is closed, the discharge valve is opened, the liquid in the diaphragm driven by the discharge. Pump by regulating certain travel back and forth along the work of the formation of continuous pressure, quantitative liquid effluent.

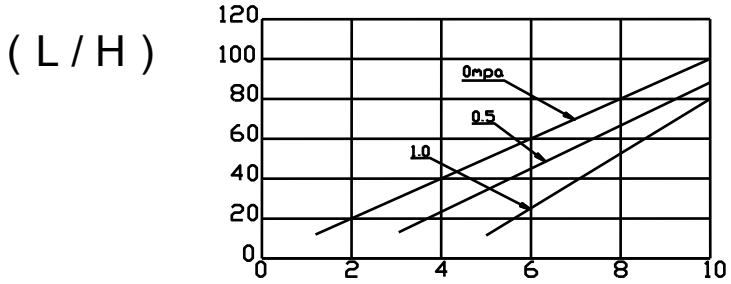
FLOW ADJUSTMENT CHARACTERISTIC The pump flow is adjusted rotating the hand wheel, thereby changing position of the mandrel, so as to change the stroke length to determine the flow. Adjust the scale of the hand wheel to determine the diaphragm stroke, 95% accurate. Flow repeatability is up to 1%.

3. TECHNICAL DATA

Diaphragm Metering Pump Parameter Table (refer to product catalogue for detail)

Comments: Table data is only for reference, the actual data is on the nameplate.

Graph of Flow Adjusting Characteristic



4. OPERATION

Pump Operation Checks and Preparations

- Check all connections; tighten the bolts,
- Adjusting the hand wheel to zero position if it is not in zero position,
- Check the wiring. Make sure the wiring way and the voltage meets corresponding with the requirement on the data plate

Start

- Open all the valves before starting the motor.
- Let the pump running for a few minutes without loading before put it to use
- Refer to the provided flow curve; calibrate the flow curve again based on your

pump liquid. Adjusting the flow a according to the calibration curve. Adjusting the hand wheel slowly from low flow to high flow direction. Tighten the hand wheel lock after adjustment.

- The pump stroke length can be adjusted during stopping or working. It takes 1-2 minutes to make the flow stable. The longer the stroke length change, the more time will be
- Inspects the temperature of the regulator and other movement parts. It should not exceeds 55 ℃
- When the pump is on, there should not be any unusual noise; otherwise, should stop the pump and check it.

Engines off

- Cut the power to stop the pump
- Close the input pipe-line valves. But open the valves before start the pump

5. PUMPS MAINTEINCE

Pump Daily Maintenance

Always check the valve. , If there is any foreign matter in the check valves, it will make the flow and pressure unstable.

If the pump is not in using for a long time, the pump head should be cleaned. Running the pump with clean water for 5 minutes, if it is for corrosive liquid,

Part Disassembling and Assembling

- Disconnecting all the pipes that connect with the check valve

- Remove the pump head, twist out the diaphragm.
- According to the following procedures disassembly other parts: A). Remove the spring pin; Take out the spring seat, spring, and mandril; if Composite bearing wears, change it with the same type. B). Remove the suction valve cover, valve ball and valve seat.;

Gearbox Disassemble

- Remove the motor screw
- Remove the motor, pull out gear box
- Loose the hand wheel lock and pull out the adjustment hand wheel.
- Tapping the eccentric component from the hole of adjustment, the eccentric spindle can be taken out.
- Assemblies all the parts in the reverse procedures above. But must pay attention to the connection of each part. There should not be any blocking when rotating them

6. INSTALLMENT

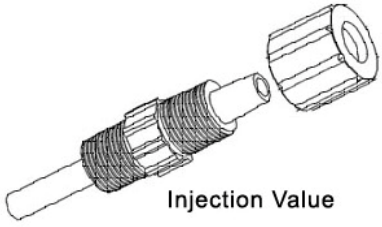
- Pumps should be installed on a concrete base 30-50cm above the ground or other solid base. Make sure the pump is level
- There should no sudden bends on the pipes. It should be less than 90°. Reduce the bends and other resistant parts as far as possible
- Dot installs the pump and the medicine tank under the direct sunlight.
- If the pump is installed on the top of the tank, the height should less than 1.5M,

The suction may be fail if exceed this height.

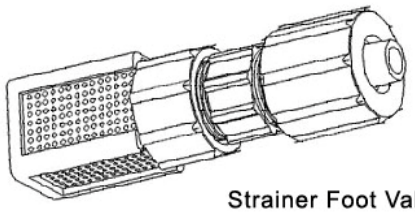
- The ambient temperature should be -20 ℃ ~+40 ℃ where the pump is installed.

  The altitude should be less than1000M.

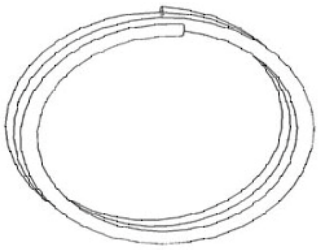
7. JBB ACCESSORIES AND CONSTRUCTION



Injection Value

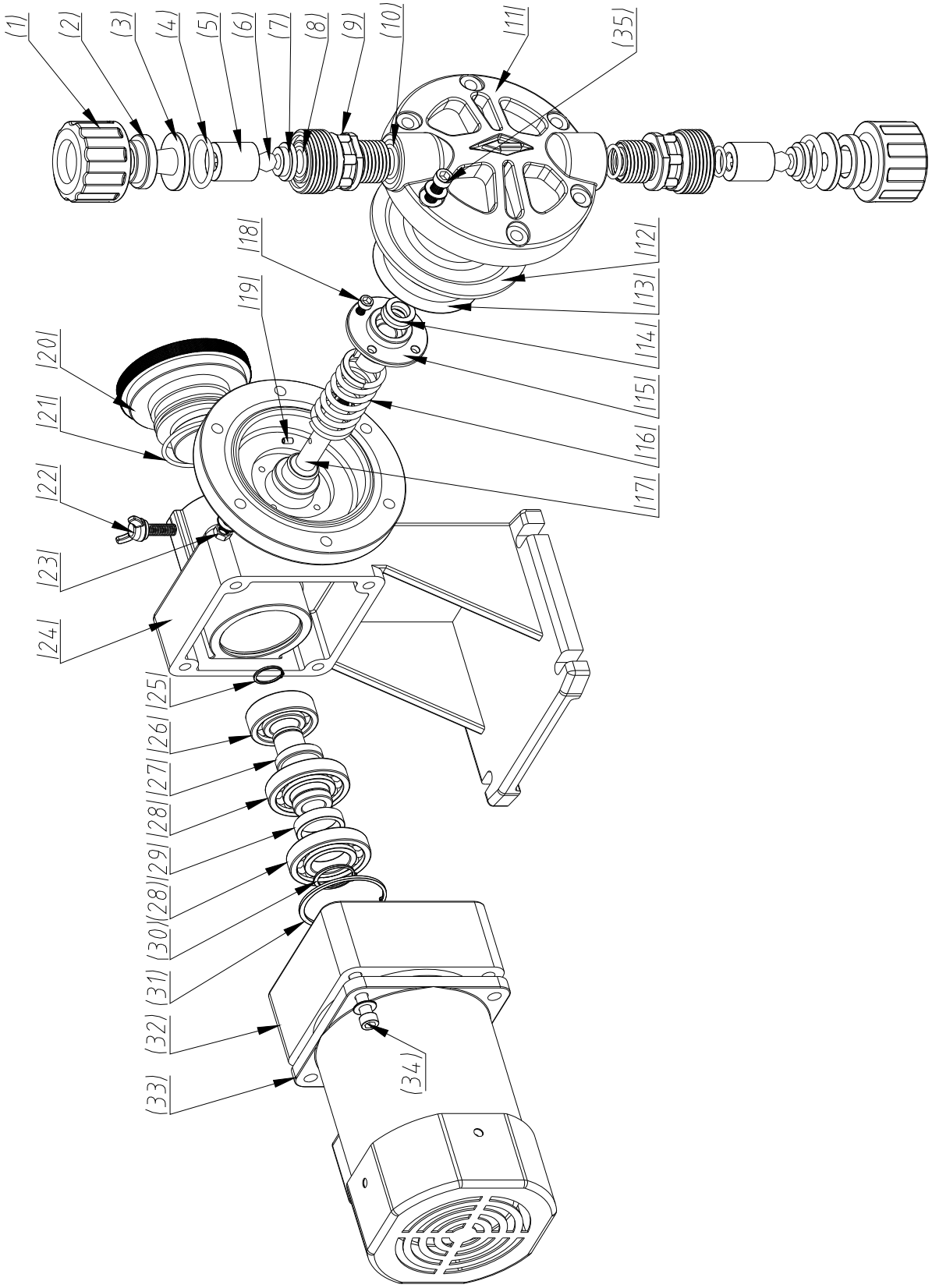


Strainer Foot Value



Soft Pipe

PUMP CONSTRUCTION



No	Name	QTY		No	Name	QTY
1	Union nut	2		19	Spring pin	1
2	Clamping ring	2		20	Hand wheel	1
3	Nipple	2		21	O ring (4)	1
4	O ring (1)	2		22	Screw	1
5	Valve seat	2		23	Nut and wahser	6
6	Valve ball	2		24	Pump body	1
7	Rubber washer	2		25	Shaft gasket (1)	1
8	O ring (2)	2		26	Bearing 6202	1
9	Check valve	2		27	Eccentric shaft	1
10	O ring (3)	2		28	Bearing 16004	2
11	Pump head	1		29	Spacing collar	1
12	Diaphragm	1		30	Shaft gasket (2)	1
13	Reinforced plate	1		31	Ring (4)	1
14	Shaft oil seal	1		32	Gear box	1
15	Spring seat	1		33	Motor	1
16	Spring	1		34	Screw (M6) with washer	4
17	Mandril	1		35	Screw (M6*35) with washer	6
18	Screw (M5)	4				

8.TROUBLE SHOOTING

NO.	FAILURE	REASONS	SOLUTION
1	Do not drain	Suction height too high; Obstruction in the suction;The suction pipe leakage	Low installation height; Clean dredge suction pipe; Press or replace sealing gasket
2.	Drainage amount not enough	Suction pipeline obstructed; Suction or discharge valve blocked; Valve ball or ball seat wear; Low rev.	1.Dredge suction pipe; 2.Cleaning the suction valve;3.Repair or replace valve; 4.Check motor voltage, current
3.	The discharge pressure is not stable	1.Suction or discharge valve with debris jam or leak 2.The pipeline is not set back pressure valve	1.Clear up the impurities, Tighten the screws to eliminate leakage 2. Add back pressure valve
4.	Metering accuracy is not enough	1. seal packing leakage 2. Suction, discharge valve wear 3 Motor speed instability 4.Regulating hand wheel shift	Adjusting or replacing sealing filler; Replacing the suction valve; Stable power supply voltage and frequency; Calibration and fixed
5	Have the impact sound in the running	1 .Rotating parts loosening or serious wear 2. Suction height too high 3. Suction pipeline leakage 4 Have the air in the medium 5.Suction pipe diameter is too small 6.Discharge pressure	1.Tighten the screws or replacement parts 2.Low installation height 3.Pressure suction flange or nut 4.Exclusion of medium in the air 5.Increased the diameter of suction pipe 6.Reduce the pressure

ZHEJIANG LIGAO PUMP TECHNOLOGY CO.,LTD.

Add: Huishu Road, Liangshui Village, Linhai City,
Zhejiang Pro., China.
Website: www.ligaopumps.com
Tel: +86-576-85289780
Fax: +86-576-85668297
E-mail: sales@ligaopumps.com