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QBK-80.100.125







QBY-10 Engeering Plastic

Pneumatic Diaphragm Pump Series





QBY-25/40 QBY-50/65
alloy/ Cast iron/ aluminum alloy/
stainless steel stainless steel









OBY4-25

AIR OPERATED DIAPHRAGM PUMPS SERIES

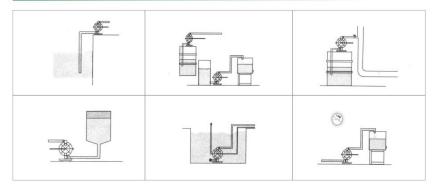
Product Specifications

This series of diaphragm pumps are the lastest model at home. They are functioned to take out and suck in various corrosive liquid containing granules, viscous, volatile, inflammable, explosive or poisonous liquid, porcelain slurry, mashed fruit, flue, the reclamation of residual oil in tanker, temporary reversion of tanker, etc. The performance parameters of this series are close to shat of German WLLDEN PUMS and American MARIO-WPUMPS, the components in contact with flow are made of stainless steel, aluminium alloy, cast iron and engineering plastics, while diaphragm may be NBR, viton, neoprene or PTFE.

Applications

- 1, The pump can suck the peanut, pickles, tomato, slurry, red sausage, chocolate, hops, and syrup, etc.
- 2, The pump can suck the paint, pigment, glue and adhesive etc.;
- 3, The pump can suck various glazed slurries of tile, porcelain, brick and chinaware etc.
- 4, The pump can suck various grinding materials, corrosive agent and clean the oil dirt etc.
- 5, The pump can suck various toxin and flammable or volatility liquid etc.
- 6, The pump can suck various wedge water, cement slurry and mortar etc.
- 7, The pump can suck various strong acid, alkali and corrosive liquid etc.
- 8, It can be used as a front-step transmission device of the solid and liquid separation equipment.

Installation instructions



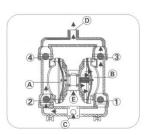
Features

Air operated double diapgragm pumps not only can exhaust the flow liquid, But also convey some uneasy flowed medium with the merits of self-pumping pump, diving pump, shield pump, slurry pump and impurity pump etc.

- 1, It is unnecessary to pour the drawing water, the suction lift reaches 7m height, The delivery lift reaches 50m length and the export pressure 6kgf/cm;
- 2, Wide flow and good performance, The diameter allowed to pass the max grain reaches 10mm, The damage is very less to the pump while exhausting the slurry and impurity;
- 3, The delivery life and flow can pass the pneumatic valve open to realize the stepless adjustment (The pneumatic pressure adjustment is between 2-8kgf/cm²);
- 4, This pump has no rotary parts and no bearing seals. The diaphragm will completely separate the exhausted medium and pollution and human body safety dangerous while while exhausting the toxin or flammable or corrosive medium.
- 5, No electricity. It's safe and reliable while using in the flammable and explore places;
- 6, It can be soaked in medium;
- 7, It's convenient to use and reliable to work. Only open or close the gas valve body while starting or stopping. Even if no medium operation or pausing suddenly for long time because of accident matters, the pump will not be damaged caused by this. Once over-loading, the pump will automatically stop and possesses the self-protection function, when the load recovers normally, it also can start automaticelly;
- 8 Simple structure and less wearing parts. This pump is simple in structure, installation and maintenance. The medium conveyed by the pump will not touch the matched pneumatic valve and coupling lever etc. Not like other kinds pumps, the performance will drop down gradually because of the damages of rotor, gear and vane etc.
- 9, It can transmit the adhesive(the viscosity is below 10000 centipoise)
- 10, This pump needn't the oil lubricant, Even if idling, it has any influence to the pump. This is a characteristic of this pump.

Working Principle

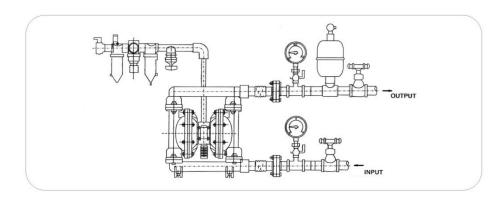
There installs each diaphragm in both aligned working cavities(A)&(B), which can be connected together with a central coupling lever. The compression air enters the air distribution valve from the air entrance of the pump, the compression air into one cavity through the air distribution mechanism, pushing the diagragm movement in the cavity. The gas in another cavity will be drained. Once reaching the



stroke terminal, the air distribution mechanism will automatically draw the compression air into another working cavity, push out the diaphragm to move towards the opposite direction, so as to let the both diaphragms continuously reciprocate motion in synchronism.

The compression air enters the air distribute valve from(E) shown as the diagram, let the diaphragm piece move towards the right direction. And the suction force in (A) chamber lets the medium flow into from(C) entrance, push out the ball valve(2) to enter(A) chamber, the ball valve(4) will be locked due to the suction force; The medium in (B)chamber will be pressed out the ball valve(3) to flow out from the exit(D). Meanwhile, let the ball valve(I) close, prevent back flow. Such movement in circles will let the medium uninterruptedly suck from(C) entrance and drain from(D) exit.

Connection Schematic Diagram

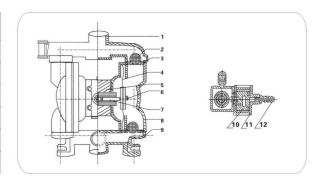


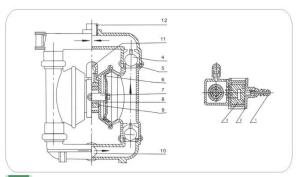
Performance Parameter

Model	Discharge	Head	Exit	Sucked	Max grain Dia	Max pressure	consumption Max air	Diaphragm diameter	Weight	Pu	mp
Woder	(m³/h)	(m)	(kgf/cm²)	(m)	(mm)	(kgf/cm²)	(m³/min)	(m³/min)	(kg)	Inlet	Outlet
QBY-10	0-0.8	0-50	6	5	1	7	0.3	140	7	Threaded	3/8"
QBY-15	0-1	0-50	6	5	1	7	0.3	140	7	Threaded	1 /2"
QBY-25	0-5	0-50	6	7	2.5	7	0.6	230	20	Threaded	1"
QBY-40	8-0	0-50	6	7	4.5	7	0.6	230	24	Threaded	112"
QBY-50	0-15	0-50	6	7	8	7	0.9	340	50	50Flange	50Flange
QBY-65	0-16	0-50	6	7	8	7	0.9	340	56	65Flange	65Flange
QBY-80	0-28	0-50	6	7	10	7	1.5	450	70	80Flange	80Flange
QBY-100	0-30	0-50	6	7	10	7	1.5	450	78	100Flange	100Flange

Note: ★ -have /-without Note: the weight on the basis of aluminum alloy, cast iron/stainless steel is about 1.7 times of aluminum alloy. texture:aluminium alloy、stainless steel、cast iron、plastic、Fluid lining fluoride

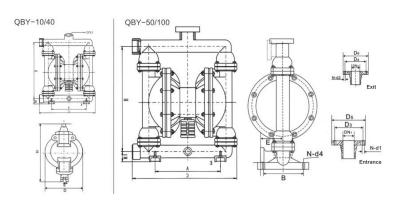
QBY - ¹⁰ / ₄₀ Struc	ctural drawing
01.Outlet pipe	02.Ball sealer
03.Seal seat	04.Diaphragm vane
05.Intermediate	06.Connecting components
07.Copperroads	08.Pump body
09.Inlet pipe	10. Valve pluy
12.Admi ion piece	13.Air distrbution valve





	aphragm Pump ructural drawing
01.Admi ion piece	02.Air distrbution valve
03.Air distrbution valve	04Ball sealor
05.Seal seat	06.Diaphragm vane
07.Connecting components	08.Copper roads
09.Intermediate	10.Inlt pipe
11.Air outlet	12.Outlet pipe

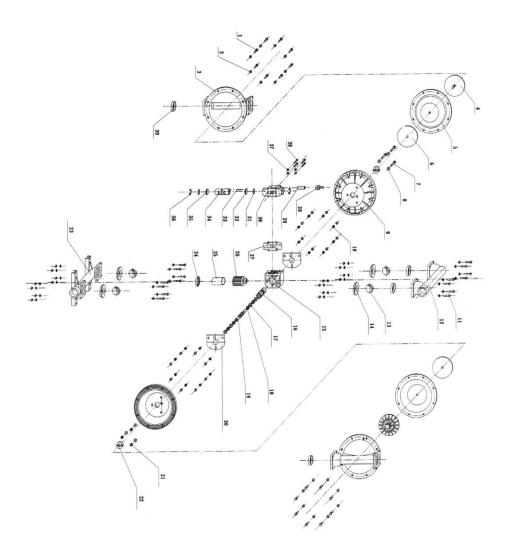
Diaphragm Dimensions



Materials	Inlet Dia.	N-d4	Е	D4	D3	N-d2	N-d1	DH1 Threaded	DH1 Threaded	H2	Н1	Н	С	D6	D5	В	А	Model
Cast Iron (HT200) Aluminum Alloy (ZL104)	8	1	12	1	1	1	1	1	3/8"	220	35	235	190	1	/	53	135	QBY-10
Stainless steel (1Cr18Ni9Ti) Engineering Plasti (PP)	8	1	12	1	1	I	1	1	1/2"	220	35	235	190	/	1	53	135	QBY-15
Engineering Plastic	10	4-Ф10	55	75	75	4-Φ11	4-Φ11	1"	1"		70	530	380	100	100	150	255	QBY-25
Outlet& inlet opens to side	10	4-Ф10	55	90	100	4-Φ13.5	4-Φ13.5	11/2"	11/2"		70	530	380	120	130	150	255	QBY-40
Cast Iron	10	4-Φ12	80	75	75	4-Φ11	4-Φ11	1"	1"	410	50	460	370	100	100	160	220	QBY-25
(HT200)	10	4-Ф12	80	90	100	4-Φ13.5	4-Φ13.5	11/4"	11/2"	410	50	460	370	120	130	160	220	QBY-40
Stainless Steel (1Cr18Ni9Ti)	11	4-Φ17.5	145	110	110	4-Φ13.5	4-Φ13.5	2"	2"		95	715	550	140	140	215	340	QBY-50
	11	4-Φ17.5	145	130	130	4-Φ13.5	4-Φ13.5	2 1	21/2"		95	715	550	140	160	215	340	QBY-65
Aluminum Alloy (ZL 104)	11	4-Φ17.5	130	150	150	4-Φ17.5	4-Φ17.5	3"	3"		100	950	580	190	190	260	360	QBY-80
	11	4-Φ17.5	130	170	170	4-Φ17.5	4-Φ17.5	3"	4"		100	950	580	190	210	260	360	QBY-100

Note: QBY-10 AND 15 cast iron/ aluminum/ stainless steel/ plastic material import and export are threaded connection, not blue. QBY-25 and 40 stainless steel/ plastic material import and export are threaded connection, not blue, cast iron/ aluminum alloy and export are flanged, threaded connection dual-use. QBY-50/60/80/100 are flanged, no threaded.(Please refer to actual sample product catalog pictures)

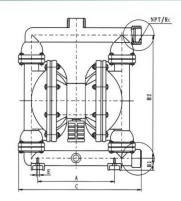
Explosive View

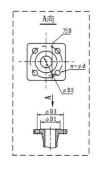


Parts list

Serial No.	Name	Amount			Ma	aterial						
1	Bolt	16			Q2	235-A						
2	Gasket 10	64			Q2	235-A						
3	Stand column	2	1Cr18Ni9Ti		HT200	ZL104	Enhanced polypropylene					
4	Outside Platen	2			Q	235-A						
5	Dissepiments	2	Nitrile Rubbers Fluorine Rubber Chloronorgutta									
6	Endo Platen	2			ZL104	and Steel						
7	Bolt	3			Q2	235-A						
8	Gasket	6			Q2	235-A						
9	Clapboard	2			Z	L104						
10	Screw Cap M10	32			Q2	235-A						
11	Bolt	16			Q2	235-A						
12	Тор	1	1Cr18Ni9Ti		HT200	ZL104	Enhanced Polypropylene					
13	Ball	4			rile Rubbers		Argil					
14	Tee	4	Chloronorgutta	Niti	Polytetrafluoroethylen	Fluorine Rubber						
15	Pump Body	1			Z	L104	-					
16	Cuprum Series	1				H62						
17	O-ring Seal	4	Polytetrafluoroethylene									
18	O-ring Seal	4	Nitrile Rubbers									
19	Shaft	1			1Cr1	8Ni9Ti						
20	Block Gasket	2			Oil-proof rub	ober rock wool						
21	Screw Cap	3			Q2	35-A						
22	Site-ring	2			Pla	astic						
23	Bottom	1	1Cr18Ni9Ti		HT200	ZL104	Enhanced Polypropylene					
24	Muffler Cover	1	,		,	ABS						
25	Muffling Coat	1			QSn	6.5-0.1						
26	Muffling Body	1			,	ABS						
27	Air Valve Gasket	1			Oil-proof r	ubber rock wool						
28	Air Connection	1			(Q235-A						
29	Into gases Percolator	1			Sintering	brass granule						
30	Air Distributive Valve	1				Sn6-6-3						
31	O-ring	2			Nitril	e Rubbers						
32	Baffle	1	1 Ly12									
33	Site billot	1				H62						
34	Piston	1				L105						
35	Baffle	1			L	_y12						
36	Spring Collar	2				55Mn						
37	Spring Cushion	4				55Mn						
38	Bolt	4			Q2	235-A						
39	Tee pressure annulus	4			Enhanced	Polypropylene						

QBK installation dimensions





Flange Connection type

Table of Dimensions

Madal		_			_			110		Screw			Flan	g€		
Model	Α	В	С	D	E	H1	H2	H3	Н	NPT/RC	D1	D2	D3	D	n	d
QBK-10	130	50	220	145	10	39	195	10	270	1 /2		-	-	-		
QBK-15	130	50	220	145	10	39	195	10	270	1/2	-	-	-	-	-	-
QBK-25	220	160	360	250	12	50	415	36	455	1	-	-	-	-	-	
QBK-40	220	160	360	250	16	50	415	35	455	Inlet1/2 outlet 4	-	-	-	-	-	-
QBK-50	335	220	540	345	16	88	720	25	720		90	50	110	Square 130×130	4	14
QBK-65	335	220	540	345	16	88	720	25	720		110	65	130	Squere 130×130	4	14
QBK-80	425	250	570	450	18	110	900	32	900		125	80	150	Square160×160	4	18
QBK-100	425	250	570	450	18	110	900	32	900		145	100	170	Square 160×160	4	18

Note: O— longer life, Δ — ordinary life, X— not applicable. The table only considers anti-corrosion. As elasticity of PTFL is relatively low, the actual service life may be different under the influence of pressure, pump travel, impurities and other factors. Food rubber is specially used for food and beverage industries.

Performance Parameters

	Max	Head	Exit	Sucked				No-m I	Pump		
Model	Flow Rate m /hour	(m)	pressuse (kgf/cm²)	lift (m)	Max grain Dla (mm;	Max pressure (kgt/cm²)	Consumption Max air (m² imln)	Normal consumption	Inlet	Outlet	
QBK-10	0⊣1	069	6.9	5	1	7	0.6	0.3	Threaded	1 / 2:"	
QBK-15	.'0⊣1,5	0~69	6.9	5		7	0.6	0.3	Threaded	1/2"	
QBK-25	0-5	0~69	6.9	5	2.5	7	1.7	0.6	Threaded	25	
QBK-40	0-10	0-69	6,9	5	4.5	7	1.7	0.6	Threaded	40	
QBK-50	0-20	0~69	6.9	5	8	7	4.9	1.7	50Flange	50Flar.ge	
QBK-65	10-25	0-69	6.9	5	8	7	4.9	1.7	65Flange	65Flange	
QBK-80	0-28	0-69	6.9	5	10	7	9.1	3	80Flange	80Flange	
QBK-100	0⊣32	069	6,9	:7	10	7	9.1	3	100Flange	80Flange	

Note: *—have/—without Note: the weight on the basis of aluminum alloy, cast iron/stainless steel is about 1.71 mes of aluminum a loy. Texture: Aluminum alloy, stainless steel, cast iron, plastic, fluid lining fluoride

∦ Structure drawing and parts



Parts list

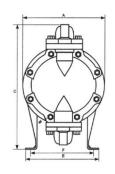
Serial No.	Name	Quantily	Material				
1	Inlet pipe	1	Stainless steel cast Iron, aluminum alloy, plastic, inner lining FEP				
2	Outlet pipe	1	Stainless steel, cast iron, alum num alloy, plast c, inner lining FEP				
3	Pump body	2	Stainless steel, cast iron, aluminum alloy, plastic inner lining FEP				
4	Pump chamber	2	A uminium alloy, cast iron				
5	Intermediate	1	Alumium a Icy				
6	Diapgragm vane	2	PTFE				
7	Diaphragm vane	2	Acrylonitrile butadiene rubber, polychloroprene				
8	Intermediate sea gasket	2	Acrylonitrile butadiene rubber				
9	Driving shaft housing	2	Plastic				
10	Connecting rod shaft housing	2	Plastic				
11	Piston bush	2	Plastic				
12	Piston	2	Plastic				
13	Slipper blcck	1	Aluminum alloy				
14	Slipperblcck	1	Chromium-platec steel				
15	Sealing slip ring	1	Plast c				
16	Driving slipper block	1	Plastic				
17	Cover plate	1	Aluminum alloy				
18	Cover plate gasket	1	Rubber				
19	Muff er	1	Plast c				
20	Seal sea	4	Rubber				
21	Sea seat	4	PTFE				
22	Clamping bar	4	Stainless steel, carbor steel				
23	Connecting rod	1	Stain ess steel				
24	Compression spring	1	Copper				
25	Driving shaft	1	Stain ess steel				
26	Seal ring of driving shaft	2	Rubber				
27	Y-type O-ring	4	Rubber				
28	O-ring	1	Rubber				
29	Butterfly-type O-ring	1	Bubber				
30	Inlet nozzle	1	Copper				
31	Bal sealer	4	Bubber				
32	Ball sealer	4	Stainless steel ceramic PTFE				

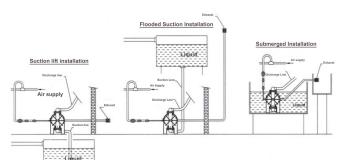
QBY4 Performance Parameters

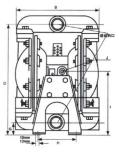
	Max		Exit	Sucked	Max grain	Max	Consumption						Mat	erisls
Model	Flow Rate (L/min)	Head (m)	Pressure (kgf/cm2)	lift (m)	Dia (mm)	pressure (kgf/cm²)	Max air	Dia.	(db)		Cast Iron HI200	Stainless stee 1Cr18Ni9Ti	(Plastic PP	Fluorin-lining infiltrated part F46(EFD), PO
QBY4-15	0-1.5	0-55	6	5	1.2	8	0.3	1/2"	60	*	*	*	*	Ĩ
QBY4-20	0-2	0-55	6	5	1.5	8	0.3	3/4"	60	*	*	*	*	1
QBY4-25	0-4	0-60	8	7	4	8	0.6	1"	80	*	*	*	*	*
QBY4-40	0-12	0-60	8	7	6	8	0.6	11/2"	80	*	*	*	*	*
QBY4-50	0-18	0-60	8	7	8	8	0.9	2"	80	*	*	*	*	*

QBY4 Installation Dimensions

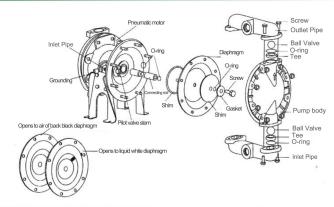
Model	А	В	С	D	Е	F	G	Н	- 1	J
QBY4-15	150	225	270	200	155	180	43	80	155	1/4"
QBY4-20	150	225	270	200	155	180	43	80	155	1/4"
QBY4-25	202	216	315	290	160	190	32	104	166	1/4"
QBY4-40	290	336	500	405	340	300	124	225	198	3/8"
QBY4-50	300	340	500	398	340	300	130	225	198	3/8"







QBY4 Structure and parts



Chemical Resistance Guide

The Diaphragm Material	Chemigum	Neoprene	Viton	Teflon	Food Rubber
Fuming nitric acid	×	×	Δ	Δ	
Concentrated nitric acid	×	×	Δ	Δ	
Strong Sulfuric	×	×	0	Δ	1
Concentrated Hydrochloric acid	×	Δ	Δ	Δ	
Strong phosphoric acid	×	Δ	Δ	Δ	
Acetic Acid Glacil	×	×	×	Δ	
Strong Sodium Hydroxide	0	0	Δ	Δ	
Anhydrous ammonia	Δ	Δ	Δ	Δ	
Dilute nitric acid	×	×	0	Δ	
Dilute sulphuric acid	Δ	Δ	Δ	Δ	
Diluted hydrochloric acid	×	×	×	Δ	
Diluted phosphoric acid	×	×	×	Δ	
Diluted sodium Hydroxide	0	0	Δ	Δ	
Ammonia water	Δ	Δ	×		
Benzene	×	×	0	0	
Gasline	0	0	0	0	
Oil	Δ	Δ	0	0	
Fouoxidation carbon	0		0	0	
Carbon disulfide	0		×	0	
Ethanol	0	0	0	0	
Acetone	×	Δ	×	0	
Cresol	×	Δ	Δ	0	
Aldehyde	×	×	Δ	0	
Ethylbenzene	×	×	Δ	0	
ACRYLONITRYL	Δ	Δ	×	0	
Butanol	0	0	0	0	
Butadiene	0	0	Δ	0	
Styrene	×	×	Δ	0	
Dilute ethyl	×	×	×	0	
Ether	×	×	×	0	

Note: O---longer life, \triangle ---ordinary life, x---not applicable. The table considers anti-corrosion. As elasticity of PTFE is relatively low, the actual service life may be different under the influence of pressure, pump travel, impurities and other factors. Food rubber is specially used for food and beverage industries.

Cautions

- 1, If the pump vibraton is very slight, there is generally no need to install the foundation bolts.
- 2,If the compressed air is mixed with dirty things,normal starting of the pump willbe influenced.t is suggested that the user should additionally instal the pneumatic triplex parts.
- 3,When pumping medium that wlleasily freeze or deposit,please install a valve at the inlet of the pumplif the pump is to be stopped, please firstlyclose the valve, and then run the pumpfor several minutes to empty the media inside the pump and clean the accumulated liquid inside the pump in time, so as to avoid any difficulties in starting the pump next time.
- 4,When replacing the diapgragm please clean the connecting rod in theinner cavity and the copper bush of the pump.And avoid damaging the white PTFE seal ring.Make the reassembly as orginal,and the pump can be used.

Applications

- 1, Oil tank bottom cleaning. Although there is the water underlaying process to pump the oil, it is not guaranteed that he oil can be thoroughly pumped out. There willalways have a layer of oil with a thickness of 3-5mm on the surface. Take the oil tank of 5000m³ as the example, It wastes 1-1.5t oilevery time. As for oi tanks with ow postion dehydration tanks, although the oil and water that are left will be discharged to oil-bearing sewage farms for recycling the volatile of will be volatilized during the transportation and it will also pollute the environment
- 2,Temporary tank dumping, loader and oil sampling. During the production scheduling in oil refining, temporary dumping, loading, and sampleinspection of oil in the oil tank occurfrequently. In order not to pollute normal pipelines, the diaphragm pump is used to connect with a temporary pipeline for completing these tasks rapidly and conveniently.
- 3, Recovery of bilge oil in the oil tanker. In an oil tank of 3000t, at least 50t oil are let between baffles of the warehouse when discharging the oil with the fixed screw pump. If the diaphragm pump with a arger displacement is used, a better effect will be achieved.
- 4, Transporation of gas and hydrogen sulfide residues. The gas residue and sulfur-bearing water at the bottom of the torque in refineries need to be discharged and disposed together; otherwise, acidity will be formed to corrode the equipment.
- 5,Ceramic industry The pump is used to pump glaze slurry and send pressure to the filter press.
- 6,Removal of dirty water and oilin sewage wells and blind drains. During the maintenance and servicing of sewage wel pipes, valves and bind drains, it is necessary to remove dirty water and oi. Although the submerged pump can completely pump out the dirty water, these places are always far away from the power supply, causing great inconvenience. When it is used, the diaphragm pump adopts the compressed air as the driving power to reclaim dirty oil and discharge dirty water.
- 7,Ceaning of sewage farms and sludge pools.Large amounts of oillsludge, mud and sand that must be cleaned gather in the sludge poolsin sewage farms. The diaphragm pump featured by flexible pumping, greating convenience, labor saving, manpower saving and time saving can be used.
- 8, Discharging of dirty water in liquefied gas pump rooms and laboratories. As these places have lower topography and are Class A fire prevention zones, it is relatively safe to use the diaphragm pump for discharging dirty water, and the efficiency is many times higher than that of hydroejector and steam ejector.
- 9, In addition, the pump also displays its advantages when applies in naphthenic acid refined transformed materials, transportation of loaded sodum sulfite liquid, and loaders of benzene raw materials.

Trouble Shooting

Malfunction forms	Causes	Troubleshooting	
No water comes out from the pump or the flow is insufficient.	The air pressure is insufficient. The flow channe of the pump cavity is blocked The valve is not opened	Add the air pressure Open the pump cavityfor cleaning Open the valve	
The pump stops its operation	1. The air distribution valve is damaged 2. The diaphragm is damaged 3. The multiple blocked 4. Airleakage occurs n the connecting rod seal	Repairor replace the air distribution valve Replacethe diaphragm Clean the muffler. Replace the connecting rod seal	
The liftis too low	The suction valve is damaged The flow is too high The air pressureis too low	Shorten the pipe and reduce elbows Turndown the drain valve. Add the air pressure	
The nose is too low	1、The mufler is broken	1、Add the airpressure.	

Products are widely used in environmental protecton, to field drainage, construction, petroleum, chemical, Pharmaceutical, power, ETC. And establish a good reputation diaphragm.

The rigorous work attitude, scientfic flow operation high leve of test center, quality inspection team sound customer servie network