

QBY系列

QBY-B系列 

气动隔膜泵

AIR OPERATED
DOUBLE DIAPHRAGM
PUMPS



上海宜菱泵业有限公司

SHANGHAI YILING PUMP CO.,LTD.

性能简介 Performance Summary

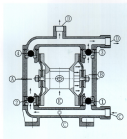
QBY/QBY-B气动隔膜泵既能输送流动的液体，又能输送一些不易流动的介质，具有自吸泵、潜水泵、屏蔽泵、泥浆泵和杂质泵等输送机械的许多优点。

- 1、不需灌引水，吸程高达7m，扬程达70m，出口压力 $>4\text{kgf/cm}^2$ ；
- 2、流动阻力，通过性能好，允许通过最大颗粒直径达10mm，输送泥砂、杂质时，对管路磨损极小；
- 3、扬程、流量可通过气阀开度实现无级调节，气压调节在 $1\sim7\text{kgf/cm}^2$ 之间；
- 4、柱塞无旋转部件，没有轴封，隔膜将输送的介质与泵的运动部件、工件介质完全隔开，所输送的介质不会向外泄漏，所以输送有毒、易爆或腐蚀性介质时，不会造成环境污染和危害人身安全；
- 5、不必用电，在易燃、易爆场所使用安全可靠；
- 6、可以浸没在介质中工作；
- 7、使用方便，工作可靠，开停只需简单地打开和关闭气体阀门，即使由于意外情况而长时间无介质运行或突然停机，泵也不会因此而损坏，一旦超负荷，泵会自动停泵，具有自我保护性能，当负荷恢复正常后，又能自动启动运行；
- 8、结构简单，易损件少，该泵结构与简单，安装、维修方便，泵输送的介质不会堵塞配气阀，联轴等运动部件，不像其他类型的泵因转子、活塞、齿轮、叶片等部件的磨损而使性能逐步下降；
- 9、可输送颗粒的液体（粘度在1万厘泊以下）；
- 10、本泵无须另设润滑，即使空转，对泵也无任何影响，这是该泵一大特点。

QBY/QBY-B air operated double diaphragm pump not only can exhaust the flow liquid, but also can convey some viscosity fluid medium, with the merits of self-pumping pump, diving pump, shield pump, slurry pump and impurity pump etc.

1. It's unnecessary to pour the drawing water, the suction lift reaches 7 m height, the delivery lift reaches 70 m strength and the export pressure $>4\text{kgf/cm}^2$.
2. Fluid 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 lift and flow can pass the pneumatic valve open to realize the stepless adjustment (the pneumatic pressure adjustment is between $1\sim7\text{kgf/cm}^2$).
4. This pump has no rotary parts and no bearing seals. The diaphragm will completely separate the exhausted medium and pump running parts, working medium, the conveyed medium can't be leaked outside. Thus it will not cause the environmental pollution and human body safety dangerous while exhausting the toxic and flammable or corrosive medium.
5. No electricity, it's safe and reliable while using in the flammable and explosive 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, then over-loading, the pump will automatically stop and possesses the self-protection function. When the load recovers normally, it also can start automatically.
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 pump, the performance will drop down gradually because of the damages of rotor, gear and vane etc.
9. It can transmit the adhesive liquid (the viscosity is below 10000 centipoise).
10. This pump needs't the oil lubricant. Even if idling, it has any influence to the pump. This is a characteristic of this pump.

工作原理 Working principle



在泵的两个对称工作腔中①、②中各装有一块隔膜，由中心联杆将其连接成一体。压缩空气从泵的进气口进入配气阀，通过配气机构将压缩空气压入其中一腔，推动腔中隔膜运动，而另一腔中气体排出，一旦到达行程终点，配气机构会自动将压缩空气压入另一工作腔，推动隔膜相反方向运动，从而使得两个隔膜连续同步地往返运动。

在图中压缩空气由④进入配气阀，使膜片向右运动，则⑤室的吸力使介质由⑧入口吸入，推开球阀②进入⑥室，球阀②则吸入而闭锁，⑥室中的介质则被压缩，推开球阀③由出口⑨排出，同时使球阀①闭锁，防止回流，就这样循环往复使介质不断从⑧入口吸入，⑨出口处排出。

There installs each diaphragm in both aligned working cavities(1&2),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,draw the compression air into one cavity through the air distribution mechanism,push out the diaphragm 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 action in synchronous.

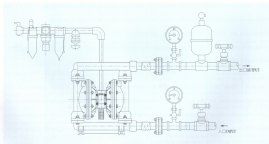
The compression air enters the air distribution valve from④shown as the diagram,let the diaphragm piece move towards the right direction,And the suction force in ⑥chamber lets the medium flow into from⑧entrance,push out the ball valve②to enter⑥chamber,the ball valve④will be locked due to the suction force;The medium in⑥chamber will be pressed,push out the ball valve③to flow out from the exit ⑨,Meanwhile,let the ball valve①close,prevent backflow,Such movement in circles will let the medium uninterruptedly suck from⑧entrance and drain from⑨exit.

主要用途 Main usage

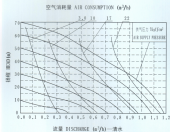
- 1、吸取花生酱、泡菜、土豆泥、红肠、巧克力、啤酒泥、糖浆等；
- 2、吸取油漆、颜料、胶水、粘合剂等；
- 3、吸取各种瓦、瓷、砖釉及陶瓷釉浆等；
- 4、吸取各种颜料、磨性剂、清洗油垢等；
- 5、吸取各种油墨、易燃、易挥发液体等；
- 6、吸取各种污水、水泥灌浆及灰浆等；
- 7、吸取各种强酸、强碱、强腐蚀性液体等；
- 8、作为各种固液分离设备的预吸送压装置。

- 1,The pump can suck the peanut,pickles,tomato slurry,red sausage,chocolate,beeps 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 toxic and flammable or volatility liquid etc.
- 6,The pump can suck various sewage 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 first-step transmission device of the solid and liquid separation equipment.

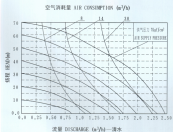
系统连接示意图 System connection schematic diagram



QBY-10/QBY-B10

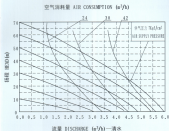


QBY-15/QBY-B15

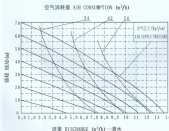


QBY/QBY-B

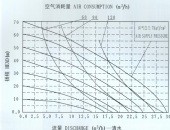
QBY-25/QBY-B25



QRY-40/QRY-640

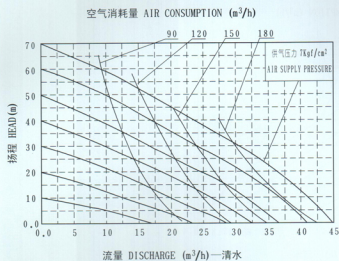


QBY-50/QBY-B50

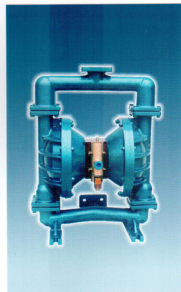
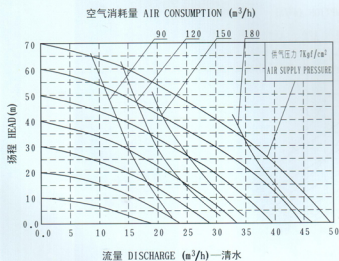


QBY/QBY-B

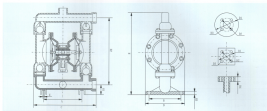
QBY-80/QBY-B80



QBY-100/QBY-B100



安装尺寸图 Drawing of setting data



安装尺寸表 Tables of setting data

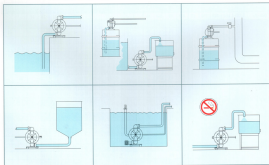
型号 Model	A	B	C	D	E	F	G	H	I	J	K	L	M	法兰式 Flange			重量 kg					
														D4	D2	D3	D4	W1	W2	W3	W4	W5
QBY-24	144	55	215	142	18	280	35	346	18	1								8	8	5	5	
QBY-25	144	55	215	142	18	280	35	346	18	1								8	8	5	5	
QBY-26	225	160	355	225	12	680	60	348	55	1								27	18	17		
QBY-25PF	225	152	385	225	12	687	69	418	28	1											16	
QBY-25F	225	160	379	225	12	680	75		35			348	41	Φ12-4	22							43
QBY-26	225	160	355	225	12	680	60	348	55	1 1/2								27	18	17		
QBY-25PF	225	152	385	225	12	687	69	418	28	1 1/2											16	
QBY-25F	225	160	379	225	12	680	75		35			325	100	Φ14-4	24							43
QBY-26	323	230	535	328	14	729	87		29			Φ100×130	110	Φ14-4	28	146						
QBY-26F	323	230	560	328	14	718	86		49			Φ100×130	110	Φ14-4	28					49		
QBY-25PF	184	165	350	228	15	725	93	550	16			Φ100×130	110	Φ14-4	28						26	
QBY-26F	323	230	560	328	14	690	87		49			140	110	Φ14-4	28							86
QBY-26	323	230	535	328	14	729	87		29			Φ100×130	110	Φ14-4	28	146						47
QBY-26F	323	230	560	328	14	718	86		49			Φ100×130	110	Φ14-4	28					49		
QBY-25PF	184	165	350	228	15	725	93	550	16			Φ100×130	110	Φ14-4	28						26	
QBY-26F	323	230	560	328	14	690	87		49			140	110	Φ14-4	28							100
QBY-26	425	250	570	429	20	960	105		35			Φ100×160	130	Φ18-4	29	197						
QBY-26F	398	225	560	409	14	879	86		49			Φ100×160	130	Φ18-4	29					52		
QBY-26F	428	250	580	419	20	920	100		35			Φ100×160	130	Φ18-4	29							180
QBY-180	425	250	570	429	20	960	105		35			Φ100×160	130	Φ18-4	29	197						
QBY-180F	398	225	560	409	14	879	86		49			Φ100×160	130	Φ18-4	29							
QBY-180F	428	250	580	419	20	920	100		35			Φ100×160	130	Φ18-4	29							

性能参数 Performance parameter

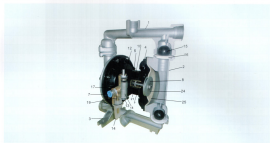
型号 Model	流量 Discharge m³/h	扬程 Head m	出口压力 Exit pressure Bar/MPa	吸程 Sucked lift m	最大允许 吸程高度 Max. gain lift m	最大出口 压力 Max. pressure (kg/cm²)	最大空气 消耗量 Max. air consumption (m³/h)	材 料 Materials				
								球 Ball	不锈钢 Stainless steel	铸铝 Aluminum	增强聚丙烯 Enhanced Polypropylene	过流部分材质 (Part in line with F14-QBY), PP
QBY-04	0~0.8	0~50	5	5	1	7	0.3	★	★	★	★	/
QBY-10	0~1	0~50	5	5	1	7	0.3	★	★	★	★	/
QBY-25	0~1.4	0~50	5	7	2.5	7	0.6	★	★	★	★	★
QBY-40	0~2	0~50	5	7	4.5	7	0.6	★	★	★	★	★
QBY-60	0~12	0~50	5	7	8	7	0.9	★	★	★	/	★
QBY-80	0~16	0~50	5	7	8	7	0.9	★	★	★	/	★
QBY-100	0~24	0~50	5	7	10	7	1.5	★	★	★	/	/
QBY-180	0~30	0~50	5	7	10	7	1.5	★	★	★	/	/

Note: ★-有 have /-无 without

安装方式 Installation method



结构图 Chart



QBY-10/15



零件清单

零件序号	名 称	数 量	材 料
1	出 口 管	1	不锈钢、铸铁、铝合金、塑料、高弹衬聚全氟乙丙烯
2	管帽	2	不锈钢、铸铁、铝合金、塑料、高弹衬聚全氟乙丙烯
3	进口管	1	不锈钢、铸铁、铝合金、塑料、高弹衬聚全氟乙丙烯
4	阀杆	2	铝合金、铸铁
5	中间杆	1	铝合金、铸铁
6	中间密封片	2	丁腈橡胶
7	进气阀	1	铜
8	压板	2	塑料
9	轴	1	不锈钢
10	衬套	1	铜
11	卡圈	2	弹簧钢
12	配气阀上盖	1	塑料
13	配气阀下盖	1	塑料
14	连杆	1	塑料
15	密封垫	4	丁腈橡胶、氟丁橡胶、陶瓷、不锈钢、聚四氟乙烯
16	密封垫	4	氟橡胶、丁腈橡胶、氟丁橡胶、聚四氟乙烯
17	配气阀体	1	铜
18	衬套	1	铝合金、不锈钢
19	密封杆	1	铜
20	配气阀垫片	1	丁腈橡胶
21	轴衬密封圈外	2	聚四氟乙烯
22	轴衬密封圈内	2	橡胶
23	消声器	1	塑料
24	压板	4	橡胶、不锈钢
25	隔膜片	2	丁腈橡胶、氟丁橡胶、聚四氟乙烯
26	中间杆	1	铝合金
27	配气阀杆	1	铜
28	配气阀上盖	1	铜
29	衬套	1	塑料
30	衬套	4	塑料、聚四氟乙烯
31	配气阀下盖	1	铜
32	密封橡胶	2	铜
33	密封垫	4	塑料、聚四氟乙烯
34	密封垫	4	不锈钢、陶瓷、聚四氟乙烯
35	配气阀垫片	1	丁腈橡胶

Database of sections

Part Serial No.	Name	Quantity	Material
1	Inlet Flange	1	Stainless Steel, Cast Iron, Titanium Alloy, Plastic, Fluid Lined PEP
2	Body	1	Stainless Steel, Cast Iron, Titanium Alloy, Plastic, Fluid Lined PEP
3	Inlet Pipe	1	Stainless Steel, Cast Iron, Titanium Alloy, Plastic, Fluid Lined PEP
4	Separated Discharge	1	Aluminum Alloy, Cast Iron
5	Mobile Body	1	Aluminum Alloy, Cast Iron
6	Mobile Body Gasket	1	NBR
7	Inlet Nozzle	1	Copper
8	Pressure Plate	1	Plastic
9	Shaft	1	Stainless Steel
10	Copper Bush	1	Copper
11	Snap Spring	1	Spring Steel
12	Upper Cover of Distributing Valve	1	Plastic
13	Lower Cover of Distributing Valve	1	Plastic
14	Oil Cap	1	Plastic
15	Sealing Ball	4	NBR, CR, Ceramic, Stainless Steel, PTFE
16	Sealing Seat	4	Fluorine Rubber, NBR, CR, PTFE
17	Distributing Valve Body	1	Copper
18	Pinion	1	Aluminum Alloy, Stainless Steel
19	Oil Sealing Ball	1	Copper
20	Distributing Valve Rubber	1	NBR
21	Outside of Shaft Sealing Ring	2	PTFE
22	Inside of Shaft Sealing Ring	2	Rubber
23	Reducer	1	Plastic
24	Pressure Plate	1	Carbon Steel, Stainless Steel
25	Impeller	1	NBR, CR, PTFE
26	Mobile Body	1	Aluminum Alloy
27	Distributing Valve Body	1	Copper
28	Upper Cover of Distributing Valve	1	Copper
29	Pinion	1	Plastic
30	Ball Cover	1	Plastic, PTFE
31	Lower Cover of Distributing Valve	1	Copper
32	Locating Lock Ring	1	Copper
33	Sealing Seat	1	Plastic, PTFE
34	Sealing Ball	1	Stainless Steel, Ceramic, PTFE
35	Distributing Valve Rubber	1	NBR