

QBYK 系列

QBYK3 系列

内置式气动隔膜泵

BUILT-IN PNEUMATIC
DIAPHRAGM
PUMP



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性能简介 Performance summary

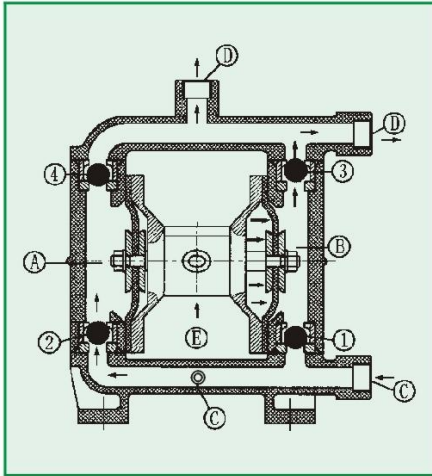
QBYK,QBYK3气动隔膜泵既能抽送流动的液体,又能输送干粉介质,具有自吸泵、潜水泵、屏蔽泵、泥浆泵和杂质泵等输送机械的许多优点。

- 1、不需灌引水,吸程高达7m,扬程达70m,出口压力 $\geq 6\text{kgf/cm}^2$;
- 2、流动宽敞,通过性能好,允许通过最大颗粒直径达10mm。抽送泥浆、杂质时,对泵磨损甚微;
- 3、扬程、流量可通过气阀开度实现无级调节(气压调节在1-7kgf/cm²之间);
- 4、该泵无旋转部件,没有轴封,隔膜将抽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。所以抽送有毒、易挥发或腐蚀性介质时,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,泵会自地动停机,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,该泵结构简单,安装、维修方便,泵输送的介质不会接触到内置配气阀,连杆等运动部件,不象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、可输送较粘的液体(粘度在1万厘泊以下);
- 10、本泵无须用油润滑,即使空转,对泵也无任何影响,这是该泵一大特点。

QBYK,QBYK3 air operated double diaphragm pumps not only can exhaust the flow liquid,but also can convey some uneasy flowed 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 length and the export pressure $\geq 6\text{kgf/cm}^2$;
- 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 lift and flow can pass the pneumatic valve open to realize the stepless adjustment(the pneumatic pressure adjustment is between 1-7kgf/cm²);
- 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 toxin and 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 selfprotection 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 pumps,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 needn'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，由中心连杆将其连接成一体。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引入其中一腔，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，配气机构自动将压缩空气引入另一工作腔，推动隔膜朝相反方向运动，从而使两个隔膜连续同步地往复运动。

在图示中压缩空气由⑤进入配气阀，使膜片向右运动，则①室的吸力使介质由③入口流入，推开球阀②进入①室，球阀④则因吸入而闭锁；②室中的介质则被挤压，推开球阀③由出口④流出，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③入口处吸入，④出口处排出。

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,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 motion in synchronism.

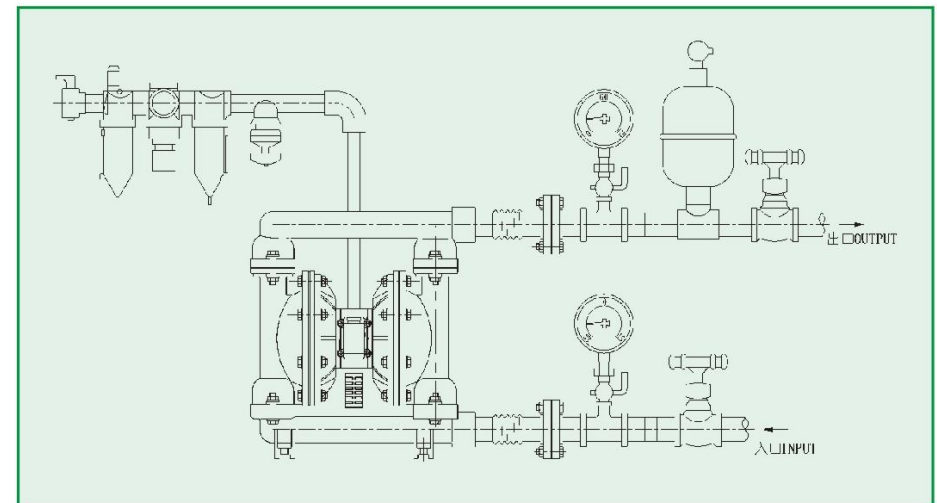
The compression air enters the air distribution valve from(E)shown as the diagram,let the diaphragm piece move towards the right direction.And the suction force in(A)chamber lets the medium flow into from(C)entrance, push out the ball valve(2)to enter(A)chamber,the ball valve(4)will be locked due to the suction force;The medium in (B)chamber will be pressed,push out the ball valve(3)to flow out from the exit (D).Meanwhile,let the ball valve(1) close,prevent backflow.Such movement in circles will let the medium uninterruptedly suck from(C)entrance and drain from(D)exit.

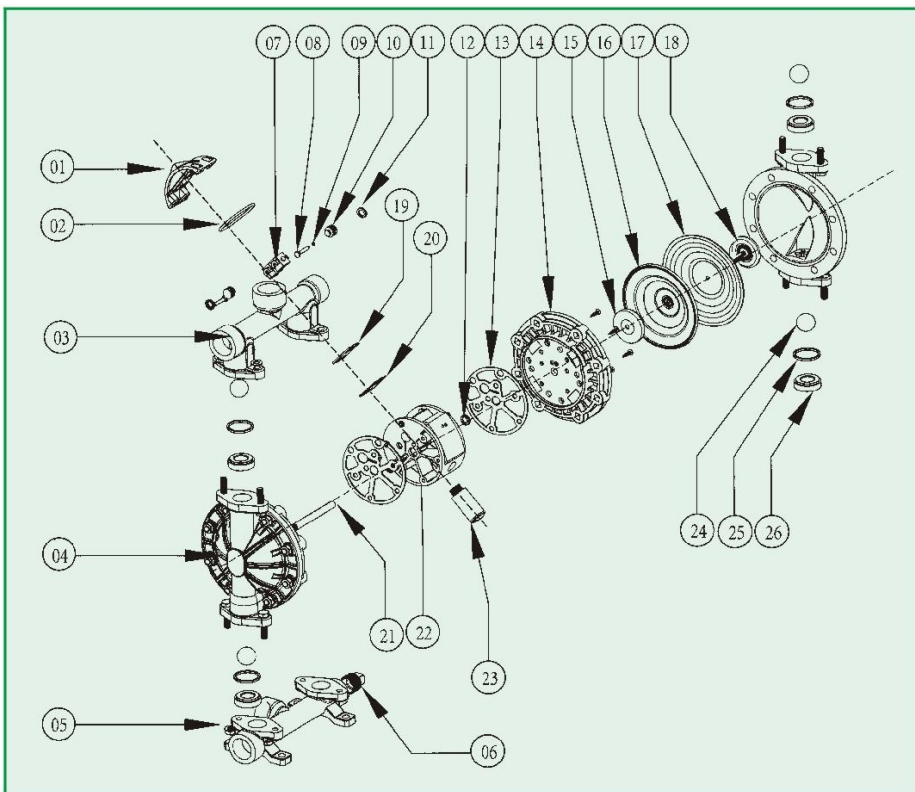
主要用途 Main usage

- 1、泵吸花生酱、泡菜、土豆泥、红肠、巧克力、啤酒花、糖浆等；
- 2、泵吸油漆、颜料、胶水、粘合剂等；
- 3、泵吸各种瓦、瓷、砖器及陶器釉浆等；
- 4、泵吸各种磨料、腐蚀剂、清洗油垢等；
- 5、泵吸各种剧毒、易燃、易挥发液体等；
- 6、泵吸各种污水、水泥灌浆及灰浆等；
- 7、泵吸各种强酸、强碱、强腐蚀液体等；
- 8、作为各种固液分离设备的前级送压装置。

- 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.

系统连接示意图 System connection schematic diagram





零部件明细表 Parts List

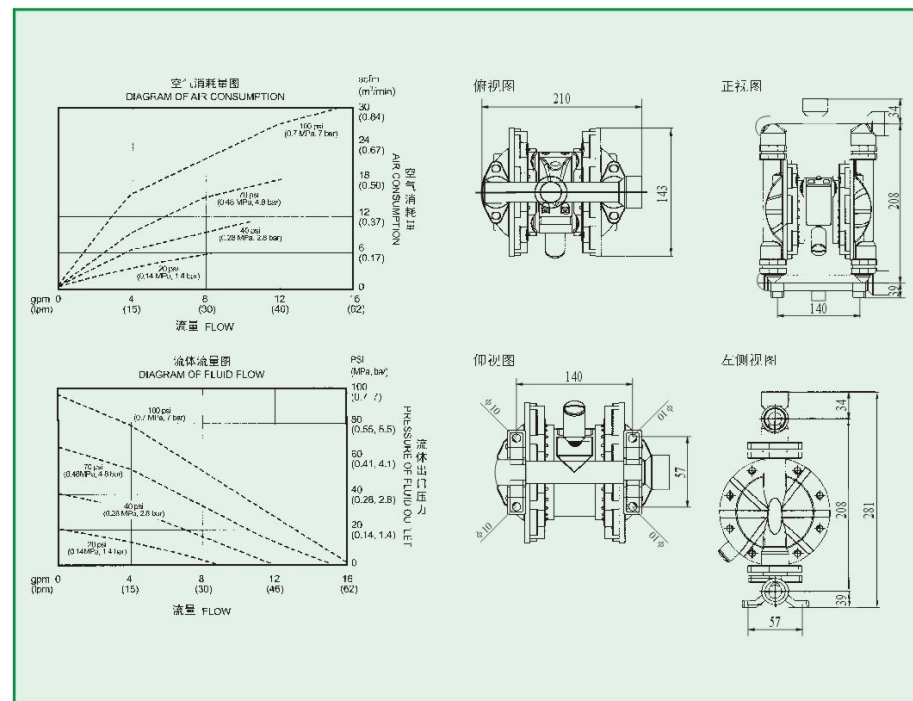
序号 No.	名称 Name	序号 No.	名称 Name	序号 No.	名称 Name	序号 No.	名称 Name
01	气阀盖 Air valve cover	02	气阀盖O型圈 Air valve cover O-ring	03	出料口 Discharge outlet	04	立柱 Column
05	进料口 Feed inlet	06	堵头 Plug	07	小滑块 Small slider	08	助动轴 Auxiliary shaft
09	助动轴O型圈 Auxiliary shaft O-ring	10	活塞 Piston	11	活塞V型圈 Piston V-ring	12	连杆轴O型圈 Pitman shaft O-ring
13	气阀室垫片 Air valve chamber gasket	14	隔排 Baffle	15	内夹板 Inner clamp	16	聚胶膜片 Poly rubber diaphragm
17	四氟膜片 PTFE diaphragm	18	外夹板 Outer clamp	19	滑板 Sliding plate	20	滑板垫片 Sliding plate gasket
21	连杆轴 Pitman shaft	22	气阀室 Air valve chamber	23	消声器 Muffler	24	球阀 Ball valve
25	球座O型圈 Ball seat O-ring	26	球座 Ball seat				

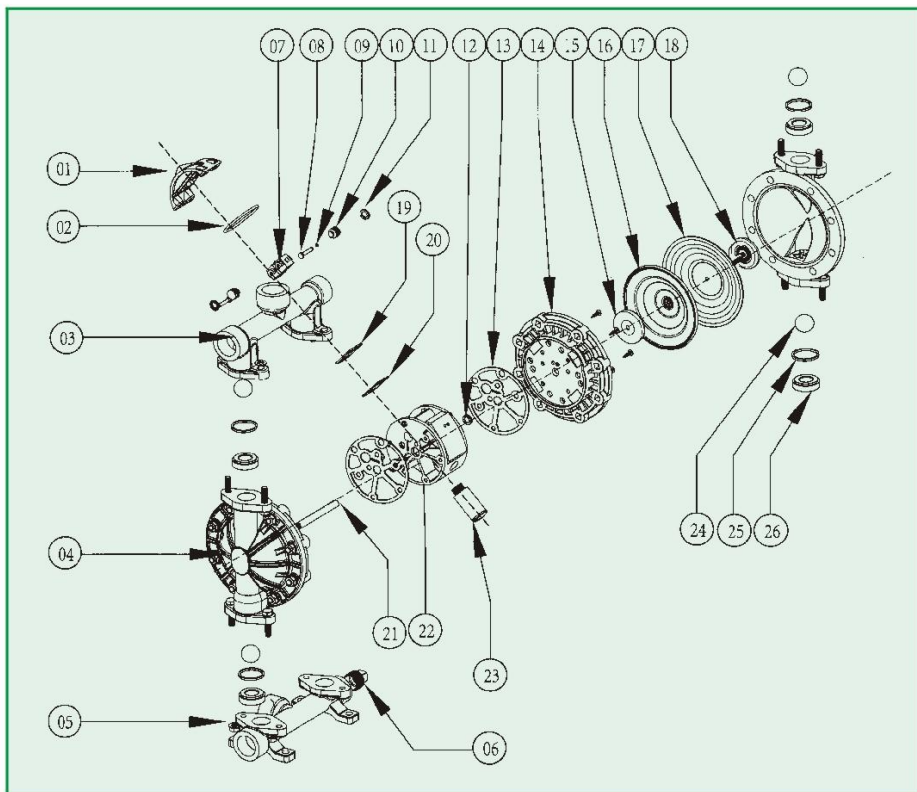


规格参数 Specifications

	QBYK-10	QBYK-15
最大工作流量 Max. Flow	5.0 gpm(18.9 lpm)	5.0 gpm(18.9 lpm)
最大工作压力 Max. Working Pressure	100 psi(0.7MPa,7bar)	100 psi(0.7MPa,7bar)
流体进口尺寸 Fluid Inlet Size	3/8 in.npt(f)	1/2 in.npt(f)
流体出口尺寸 Fluid outlet Size	3/8 in.npt(f)	1/2 in.npt(f)
空气进口尺寸 Air Inlet Size	1/4 in.npt(f)	1/4 in.npt(f)
最大虹吸高度(干抽) Max. Suction Height(dry suction)	8-10 ft.(2.5-3m)	8-10 ft.(2.5-3m)
最大输送固体颗粒 Max. Permitted Grain	0.06 in.(1.5mm)	0.06 in.(1.5mm)
最大空气消耗量 Max. Air Consumption	9.0 scfm	9.0 scfm
每行程流量 Every Stroke Flow	0.006 gal.(23 cc)	0.006 gal.(23 cc)
每往复流量 Every Reciprocating Flow	0.012gal.(46 cc)	0.012gal.(46 cc)
最大往复速度 干运转 dry running	320 cpm	320 cpm
Max. Reciprocating Speed 湿运转 wet running	250 cpm	250 cpm
泵主体结构材质: 铸钢、铝合金、PP、不锈钢、PVDF2		
Pump body structure materials: Cast steel Aluminum alloy PP Stainless steel PVDF2		
净重: 铝合金4kg、不锈钢7kg、铸铁7kg、聚丙烯4kg、聚偏二氟乙烯4kg		
Net weight: 4kg for aluminum alloy, 7kg for stainless steel, 7kg for cast iron, 4kg for polypropylene and 4kg for polyvinylidene fluoride		

安装尺寸 Installation dimensions





零部件明细表 Parts List

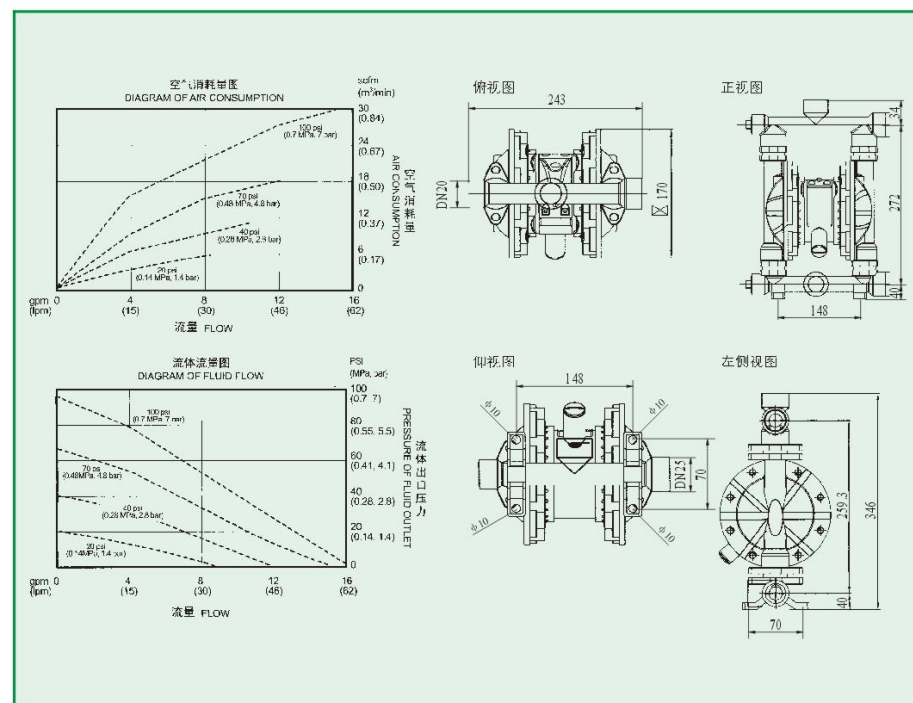
序号 No.	名称 Name	序号 No.	名称 Name	序号 No.	名称 Name	序号 No.	名称 Name
01	气阀盖 Air valve cover	02	气阀盖O型圈 Air valve cover O-ring	03	出料口 Discharge outlet	04	立柱 Column
05	进料口 Feed inlet	06	堵头 Plug	07	小滑块 Small slider	08	助动轴 Auxiliary shaft
09	助动轴O型圈 Auxiliary shaft O-ring	10	活塞 Piston	11	活塞V型圈 Piston V-ring	12	连杆轴O型圈 Pitman shaft O-ring
13	气阀室垫片 Air valve chamber gasket	14	隔排 Baffle	15	内夹板 Inner clamp	16	聚胶膜片 Poly rubber diaphragm
17	四氟膜片 PTFE diaphragm	18	外夹板 Outer clamp	19	滑板 Sliding plate	20	滑板垫片 Sliding plate gasket
21	连杆轴 Pitman shaft	22	气阀室 Air valve chamber	23	消声器 Muffler	24	密封球 Sealing ball
25	球座O型圈 Ball seat O-ring	26	密封座 Sealing seat				

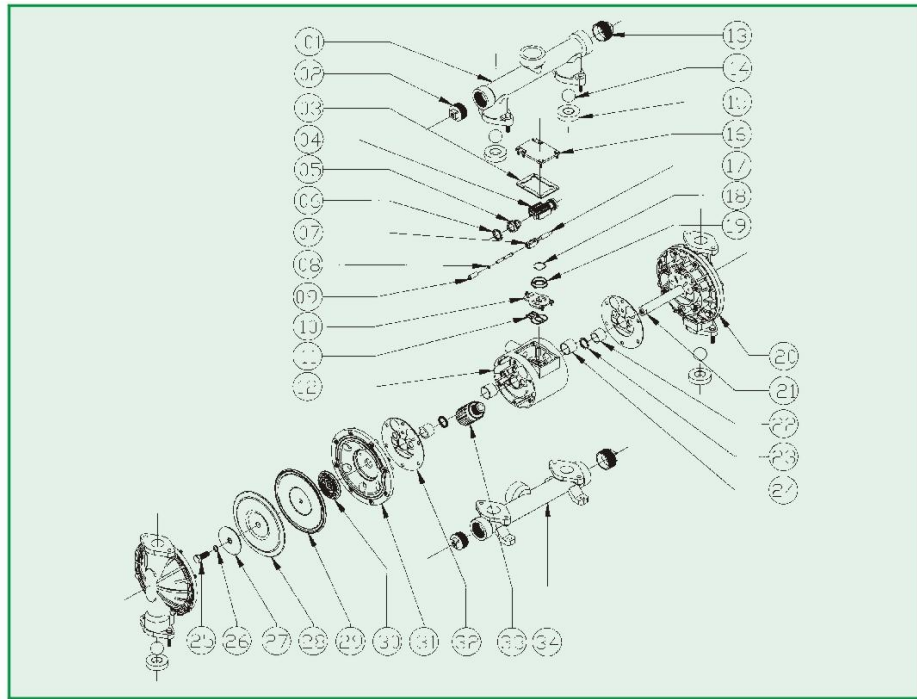


规格参数 Specifications

	QBYK3-20	QBYK3-25
最大工作流量 Max. Flow	15 gpm(57 lpm)	15 gpm(57 lpm)
最大工作压力 Max. Working Pressure	100 psi(0.7MPa,7bar)	100 psi(0.7MPa,7bar)
流体进口尺寸 Fluid Inlet Size	3/4 in.npt(f)	1 in.npt(f)
流体出口尺寸 Fluid outlet Size	3/4 in.npt(f)	1 in.npt(f)
空气进口尺寸 Air Inlet Size	1/4 in.npt(f)	1/4 in.npt(f)
最大虹吸高度 干抽 dry suction	15 ft.(4.5 m)	15 ft.(4.5 m)
Max. Suction Height 湿抽 wet suction	25 ft.(7.6m)	25 ft.(7.6m)
最大输送固体颗粒 Max. Permitted Grain	3/32 in.(2.5mm)	3/32 in.(2.5mm)
最大空气消耗量 Max. Air Consumption	12.7 scfm	12.7 scfm
每往复流量 Every Reciprocating Flow	0.04 gal.(0.15 L)	0.04 gal.(0.15 L)
最大往复速度 Max. Reciprocating Speed	400 cpm	400 cpm
泵主体结构材质: 铸钢、铝合金、不锈钢、塑料、氟塑料		
Pump body structure materials: Cast steel,Aluminum alloy, Stainless steel, Plastic, Fluorine plastics		
净重: 铸钢10kg、不锈钢10kg、铝合金6kg、塑料5kg		
Net weight: 10kg for cast iron,10kg for stainless steel,6kg for aluminum alloy, Plastic 5kg		

安装尺寸 Installation dimensions





零部件明细表 Parts List

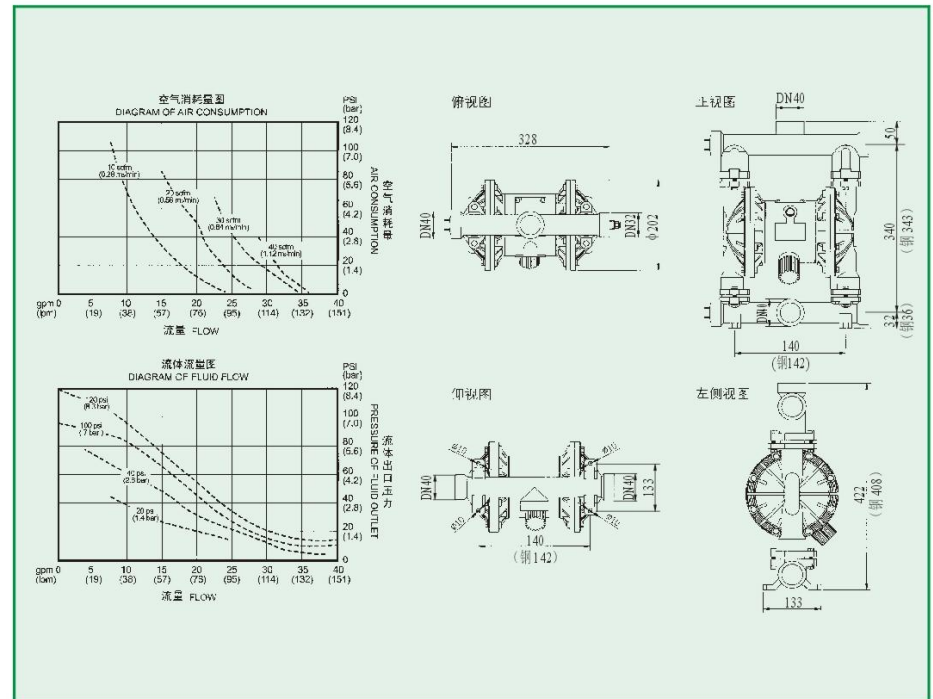
序号 No.	名称 Name	序号 No.	名称 Name	序号 No.	名称 Name	序号 No.	名称 Name
01	出料口(上盖) Discharge outlet (top cover)	02	堵头 Plug	03	气阀盖垫片 Air valve cover gasket	04	大滑块铝件 Large slider aluminium piece
05	活塞 Piston	06	V型圈 V-ring	07	小滑块 Small slider	08	助动轴O型圈 Auxiliary shaft O-ring
09	助动轴套 Auxiliary shaft cover	10	滑板 Sliding plate	11	滑板垫片 Sliding plate gasket	12	气阀室 Air valve chamber
13	堵头 Plug	14	密封球 Sealing ball	15	密封座 Sealing seat	16	气阀室盖 Air valve chamber cover
17	助动轴 Auxiliary shaft	18	大滑块O型圈 Large slider O-ring	19	大滑块塑料圈 Large slider plastic ring	20	立柱 Column
21	连杆轴 Pitman shaft	22	连杆轴套 Pitman shaft sleeve	23	V型圈 V-ring	24	活塞套 Piston sleeve
25	夹板螺丝 Clamp screw	26	夹板O型圈 Clamp O-ring	27	外夹板 Outer clamp	28	四氟膜片 PTFE diaphragm
29	聚胶膜片 Poly rubber diaphragm	30	内夹板 Inner clamp	31	隔排 Baffle	32	气阀室垫片 Air valve chamber gasket
33	消声器 Muffler	34	进料口(下盖) Feed inlet (bottom cover)				

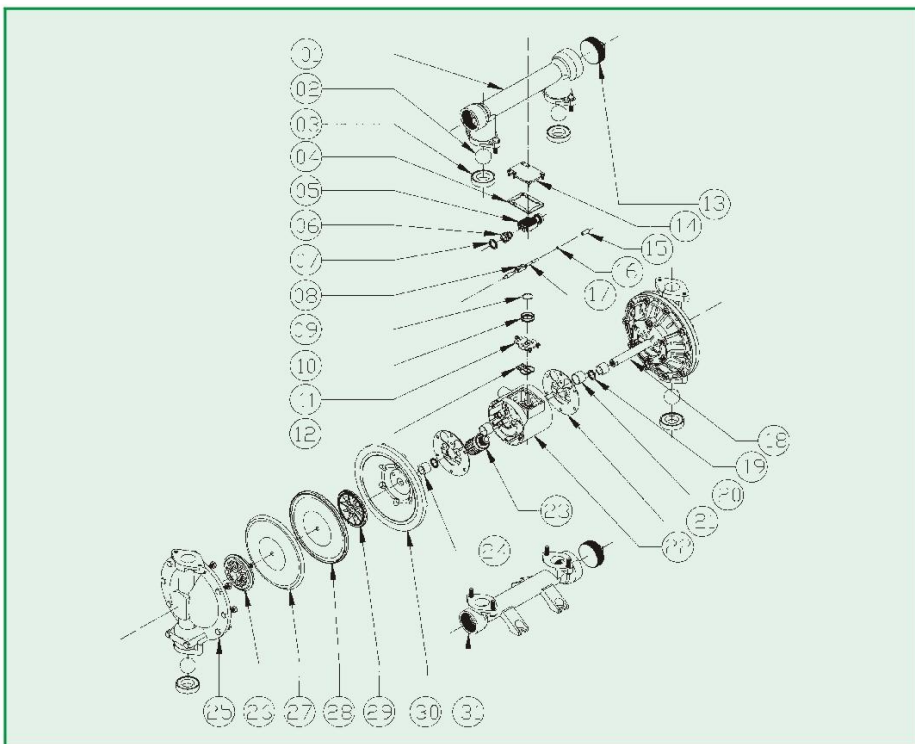


规格参数 Specifications

	QBYK3-32	QBYK3-40
最大工作流量 Max. Flow	40 gpm(151 lpm)	40 gpm(151 lpm)
最大工作压力 Max. Working Pressure	120 psi(0.84MPa,8.4bar)	120 psi(0.84MPa,8.4bar)
流体进口尺寸 Fluid Inlet Size	1-1/4 in.npt(f)	1-1/2 in.npt(f)
流体出口尺寸 Fluid outlet Size	1-1/4 in.npt(f)	1-1/2 in.npt(f)
空气进口尺寸 Air Inlet Size	1/2 in.npt(f)	1/2 in.npt(f)
最大虹吸高度(干抽) Max. Suction Height(dry suction)	18 ft.(5.48m)	18 ft.(5.48m)
最大输送固体颗粒 Max. Permitted Grain	1/8 in.(3.2mm)	1/8 in.(3.2mm)
最大空气消耗量 Max. Air Consumption	23.66 scfm	23.66 scfm
每往复流量 Every Reciprocating Flow	0.15gal.(0.57 L)	0.15gal.(0.57 L)
最大往复速度 Max. Reciprocating Speed	276 cpm	276 cpm
泵主体结构材质: 铸钢、铝合金、不锈钢 Pump body structure materials: Cast steel, Aluminum alloy, Stainless steel		
净重: 铝合金9kg、铸钢: 15.5kg、不锈钢: 15.5kg Net weight: Aluminum alloy9kg,Cast steel 15.5kg,Stainless steel 15.5kg		

安装尺寸 Installation dimensions





零部件明细表 Parts List

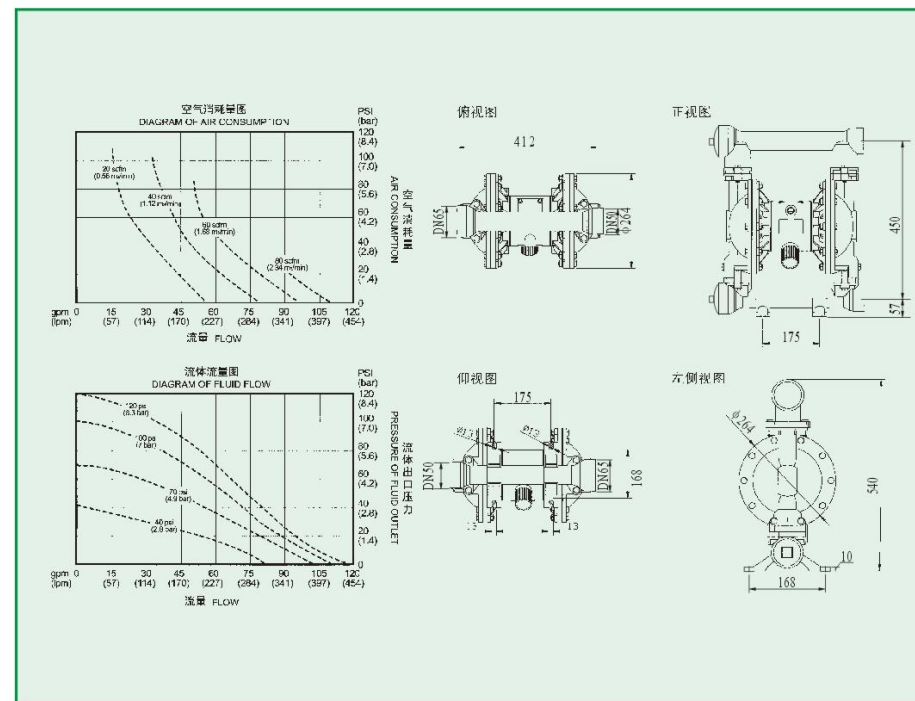
序号 No.	名称 Name	序号 No.	名称 Name	序号 No.	名称 Name	序号 No.	名称 Name
01	出料口(上盖) Discharge outlet (top cover)	02	密封球 Sealing ball	03	密封座 Sealing seat	04	气阀盖垫片 Air valve cover gasket
05	大滑块铝件 Large slider aluminium piece	06	活塞 Piston	07	V型圈 V-ring	08	小滑块 Small slider
09	大滑块O型圈 Large slider O-ring	10	大滑块塑料圈 Large slider plastic ring	11	滑板 Sliding plate	12	滑板垫片 Sliding plate gasket
13	堵头 Plug	14	气阀室盖 Air valve chamber cover	15	辅助轴套 Auxiliary shaft cover	16	辅助轴O型圈 Auxiliary shaft O-ring
17	助动轴 Auxiliary shaft	18	连杆轴 Pitman shaft	19	V型圈 V-ring	20	活塞套 Piston sleeve
21	气阀室垫片 Air valve chamber gasket	22	气阀室 Air valve chamber	23	消声器 Muffler	24	连杆轴套 Pitman shaft sleeve
25	立柱 Column	26	外夹板 Outer clamp	27	四氟膜片 PTFE diaphragm	28	聚胶膜片 Poly rubber diaphragm
29	内夹板 Inner clamp	30	隔排 Baffle	31	进料口(下盖) Feed inlet (bottom cover)		

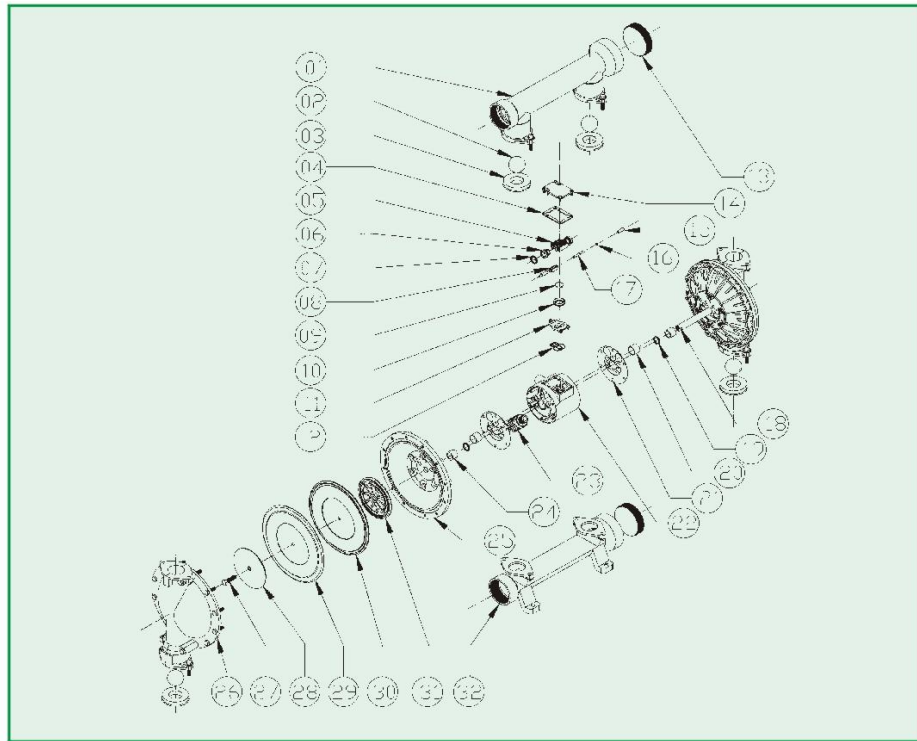


规格参数 Specifications

	QBYK3-50	QBYK3-65
最大工作流量 Max. Flow	100 gpm(378.5 lpm)	100 gpm(378.5 lpm)
最大工作压力 Max. Working Pressure	120 psi(0.84MPa,8.4bar)	120 psi(0.84MPa,8.4bar)
流体进口尺寸 Fluid Inlet Size	2 in.npt(f)	2-1/2 in.npt(f)
流体出口尺寸 Fluid outlet Size	2 in.npt(f)	2-1/2 in.npt(f)
空气进口尺寸 Air Inlet Size	1/2 in.npt(f)	1/2 in.npt(f)
最大虹吸高度(干抽或湿抽) Max. Suction Height(dry suction or wet suction)	18 ft.(5.48m)	18 ft.(5.48m)
最大输送固体颗粒 Max. Permitted Grain	3/16 in.(4.8mm)	3/16 in.(4.8mm)
最大空气消耗量 Max. Air Consumption	32 scfm	32 scfm
每往复流量 Every Reciprocating Flow	0.5gal.(1.9 L)	0.5gal.(1.9 L)
最大往复速度 Max. Reciprocating Speed	276 cpm	276 cpm
泵主体结构材质: 铸钢、铝合金、不锈钢 Pump body structure materials: Cast steel, Aluminum alloy and Stainless steel		
净重: 铸钢 28kg, 不锈钢 28kg, 铝合金 16kg Net weight: Cast steel 28kg, Stainless steel 28kg, Aluminum alloy 16kg		

安装尺寸 Installation dimensions





零部件明细表 Parts List

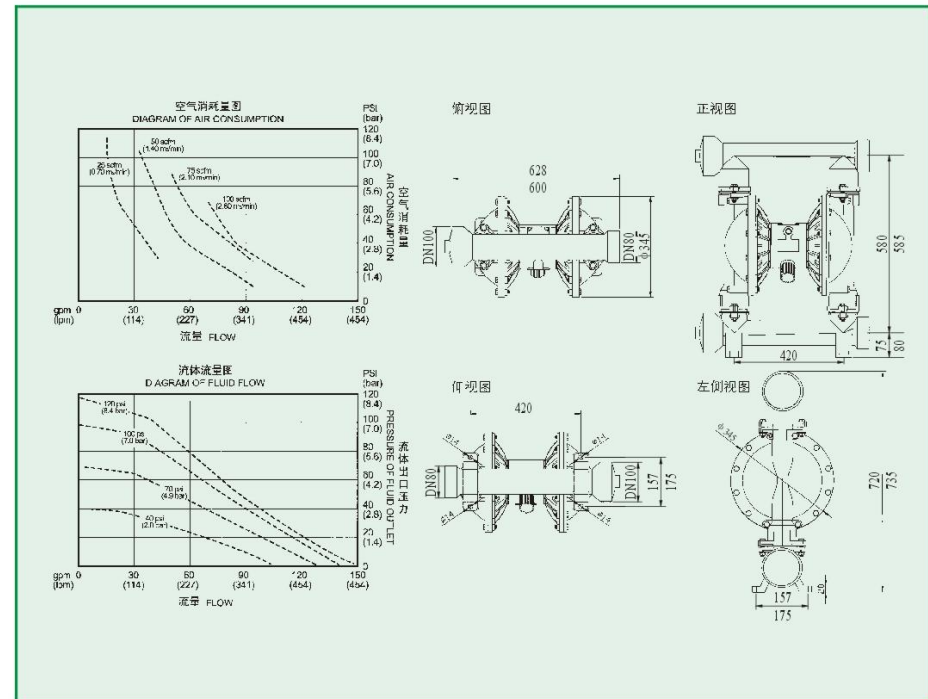
序号 No.	名称 Name	序号 No.	名称 Name	序号 No.	名称 Name	序号 No.	名称 Name
01	出料口(上盖) Discharge outlet (top cover)	02	密封球 Sealing ball	03	密封座 Sealing seat	04	气阀盖垫片 Air valve cover gasket
05	大滑块 Large slider	06	活塞 Piston	07	V型圈 V-ring	08	小滑块 Small slider
09	大滑块O型圈 Large slider O-ring	10	大滑块塑料圈 Large slider plastic ring	11	滑板 Sliding plate	12	滑板垫片 Sliding plate gasket
13	堵头 Plug	14	气阀室盖 Air valve chamber cover	15	助动轴套 Auxiliary shaft cover	16	助动轴O型圈 Auxiliary shaft O-ring
17	助动轴 Auxiliary shaft	18	连杆轴 Pitman shaft	19	V型圈 V-ring	20	活塞套 Piston sleeve
21	气阀室垫片 Air valve chamber gasket	22	气阀室 Air valve chamber	23	消声器 Muffler	24	连杆轴套 Pitman shaft sleeve
25	隔排 Baffle	26	立柱 Column	27	夹板螺丝 Clamp screw	28	外夹板 Outer clamp
29	四氟膜片 PTFE diaphragm	30	聚胶膜片 Poly rubber diaphragm	31	内夹板 Inner clamp	32	进料口(下盖) Feed inlet (bottom cover)

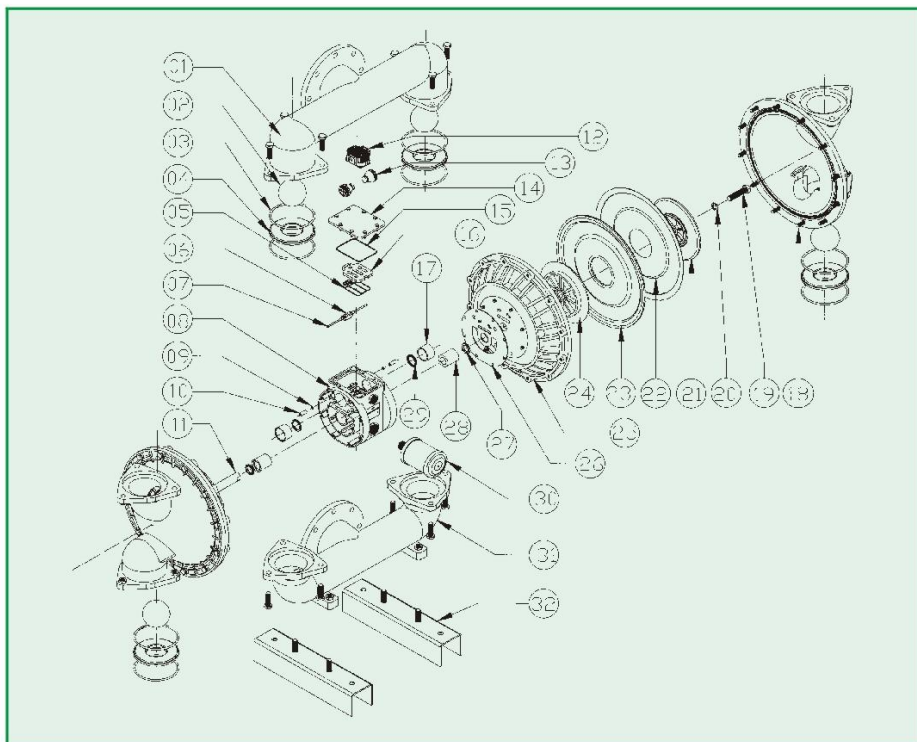


规格参数 Specifications

	QBYK3-80	QBYK3-100
最大工作流量 Max. Flow	150 gpm(568 lpm)	150 gpm(568 lpm)
最大工作压力 Max. Working Pressure	120 psi(0.84MPa,8.4bar)	120 psi(0.84MPa,8.4bar)
流体进口尺寸 Fluid Inlet Size	3-1/4 in.npt(f)	4 in.npt(f)
流体出口尺寸 Fluid outlet Size	3-1/4 in.npt(f)	4 in.npt(f)
空气进口尺寸 Air Inlet Size	1/2 in.npt(f)	1/2 in.npt(f)
最大虹吸高度(干抽或湿抽) Max. Suction Height(dry suction or wet suction)	18 ft.(5.48m)	18 ft.(5.48m)
最大输送固体颗粒 Max. Permitted Grain	1/4 in.(6.4mm)	1/4 in.(6.4mm)
最大空气消耗量 Max. Air Consumption	45 scfm	45 scfm
每往复流量 Every Reciprocating Flow	1.03gal.(3.90 L)	1.03gal.(3.90 L)
最大往复速度 Max. Reciprocating Speed	145 cpm	145 cpm
泵主体结构材质: 铸铁、铝合金、不锈钢 Pump body structure materials: Cast steel, Aluminum alloy and Stainless steel		
净重: 不锈钢60kg、铸铁83kg、铝合金42kg Net weight: 60kg for stainless steel,83kg for cast iron,42kg for aluminum alloy,		

安装尺寸 Installation dimensions





零部件明细表 Parts List

序号 No.	名称 Name	序号 No.	名称 Name	序号 No.	名称 Name	序号 No.	名称 Name
01	出料口(上盖) Discharge outlet (top cover)	02	密封球 Sealing ball	03	密封座O型圈 Seal seat O-ring	04	密封座 Sealing seat
05	滑板垫片 Sliding plate gasket	06	小滑块 Small slider	07	助动轴 Auxiliary shaft	08	气阀室 Air valve chamber
09	助动轴O型圈 Auxiliary shaft O-ring	10	助动轴套 Auxiliary shaft cover	11	连杆轴 Pitman shaft	12	大滑块铝件 Large slider aluminium piece
13	活塞 Piston	14	气阀室盖 Air valve chamber cover	15	气阀室盖垫圈 Air valve chamber cover gasket	16	滑板 Sliding plate
17	活塞套 Piston sleeve	18	立柱 Column	19	夹板螺丝 Clamp screw	20	夹板O型圈 Clamp O-ring
21	外夹板 Outer clamp	22	四氟膜片 PTFE diaphragm	23	聚胶膜片 Poly rubber diaphragm	24	内夹板 Inner clamp
25	隔排 Baffle	26	气阀室垫片 Air valve chamber gasket	27	V型圈 V-ring	28	连杆轴套 Pitman shaft sleeve
29	V型圈 V-ring	30	消声器 Muffler	31	进料口(下盖) Feed inlet (bottom cover)	32	支架(底座) Bracket (base)

规格参数 Specifications

QBYK3-125

最大工作流量 Max. Flow 275 gpm(1041 lpm)
 最大工作压力 Max. Working Pressure 120 psi(0.84MPa,8.4bar)
 流体进口尺寸 Fluid Inlet Size DN125-10kg法兰 flange
 流体出口尺寸 Fluid outlet Size DN125-10kg法兰 flange
 空气进口尺寸 Air Inlet Size 3/4 in.npt(f)
 最大虹吸高度 干抽 dry suction 8 ft.(2.4 m)
 Max. Suction Height 湿抽 wet suction 25 ft.(7.6m)
 最大输送固体颗粒 Max. Permitted Grain 3/8 in.(9.4mm)
 最大空气消耗量 Max. Air Consumption 82.6 scfm
 每往复流量 Every Reciprocating Flow 2.0 gal.(7.6 L)
 最大往复速度 Max. Reciprocating Speed 135 cpm
 泵主体结构材质: 铸钢、不锈钢、塑料
 Pump body structure materials: Cast steel, Stainless steel, Plastic
 净重: 铸钢 150kg, 不锈钢 150kg, 塑料 100kg
 Net weight: Cast steel 150kg, Stainless steel 150kg, Plastic 100kg



安装尺寸 Installation dimensions

