

Module-Center

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Air Vacuum Pump

[PUM-00025](#)



1. Overviews

Product specifications is about product 's technical parameters and the document to use products properly. For customers ,its roles are as following:

- (a) It is the base to research and design their products.
- (b) It is the base for technical certification of product quality.
- (c) It is the base for Customer to choose materials.

The purpose of this specification lies in that to make our customers know the product requirements in terms of technology, quality, packaging, factory inspection , etc.

2. Working theory introduction

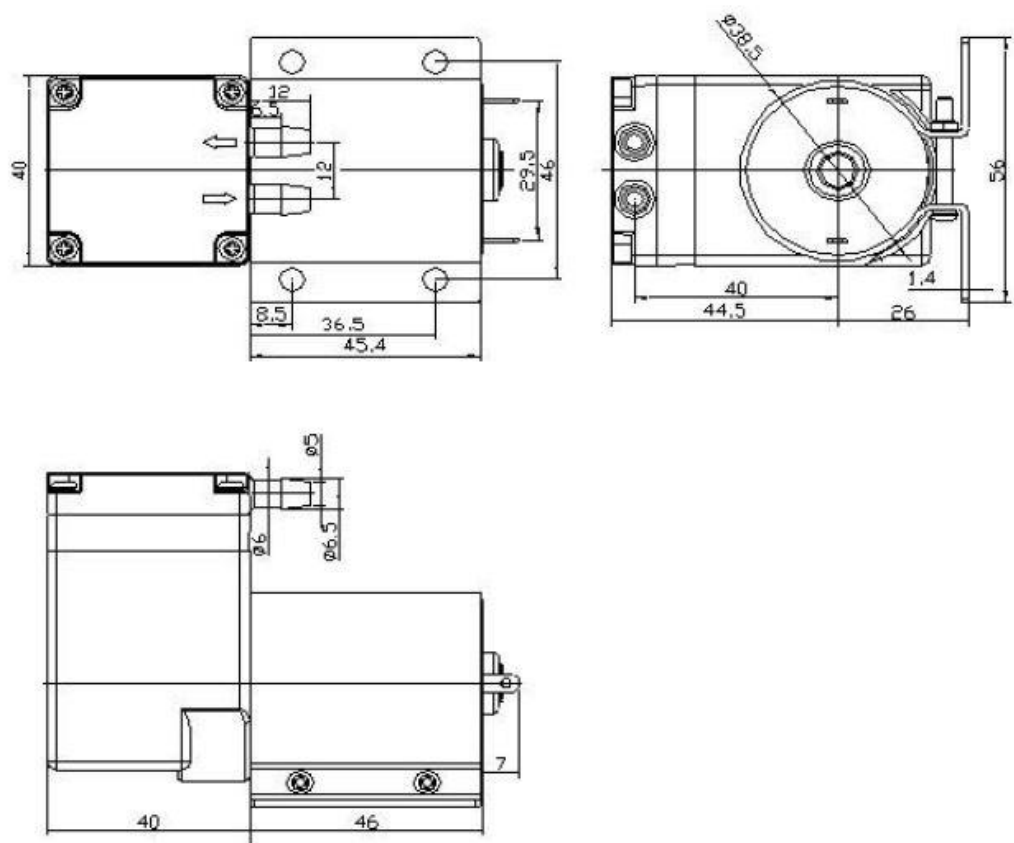
Working principle: the rotary motion of the motor turn into the swing of connecting rod which makes the diaphragm up and down motion. In the process of the downward movement of the diaphragm, pump cavity will suck medium through the inlet valve;

Upward movement of the diaphragm, pump cavity press out media through the outlet

valve. Mechanical transmission parts and pump cavity is isolated by diaphragm.

Diaphragm pump does not need oil for auxiliary lubricating, in the process of transmission, extraction and compression of medium.

3. Plan view



4. Product material

4.1 BOM/Materials BOM

序号 Num ber	名称 Part's name	规格及材质 Specifications and materials	标号 Grade
1	标签 Label	30mm X 38mm	Rohs
2	进出气 Inlet and outlet	专用改性 PC Special modified PC	Rohs
3	气缸 air cylinder	专用改性 PC Special modified PC	Rohs
4	大身	专用改性 PC	Rohs

	Body	Special modified PC	
5	后盖 Back cover	专用改性 PC Special modified PC	Rohs
6	连接杆 Connecting rod	PPS 材质	Rohs
7	偏心 Eccentric	POM 材质	Rohs
8	压板 Platen	锌合金 Zinc Alloy	Rohs
9	防尘帽 Dust cap	PVC 材质	Rohs
10	阀片 Valve	EPDM	Rohs
11	圆形橡胶 Round rubber	EPDM	Rohs
12	螺丝及螺帽 Screws and Nuts	不锈钢 316 Stainless steel 316	Rohs
13	轴承 Bearing	滚珠轴承（轴承钢） Ball bearing (bearing steel)	Rohs
14	电机 Motor	12V DC5000（EMC）	Rohs

4.1 Special requirements for materials

All materials comply with environmental standards.

Motors comply with EMC.

pump material is nonflammable or any fire should be fully extinguish within 30 seconds under 10 seconds of ignition test.

5. Technical Requirements

5.1 Environmental Requirements

	工作环境 (非结晶条件) Working Environment	存储环境 (非结晶条件) Storage Environment	运输环境 Transportation Environment
温度范围 Temperature	-30℃~66℃	-30℃~70℃	-30℃~70℃平稳 /Smooth

Range			
相对湿度范围 Relative humidity range	60%rh	60%rh	60%rh

5.2 Parameters requirements

序号 Number	项目 Item	要求 Requirements	备注 Remark
1	额定电压 Rated voltage	DC12V	
2	空载电流 No load current	$\leq 1.6A$	
3	可操作电压 Operated voltage	9-14V	
4	启动电压 Starting voltage	9V (ON/OFF)	
5	堵转电流 Stall current	5A	
6	电机转速 Motor speed	5000RPM	
7	功率 Power	$\leq 20W$	
8	真空 Vacuum	90 Kpa \pm 5Kpa	

9	抽气流量 Flow	18L/min±2L/M	
10	机械强度 Mechanical strength	气泵能承受3次0.8m的跌落试验不出现断裂或损坏 Pump can withstand 0.8m drop test for three times and does not appear broken or damaged	
11	使用寿命 Working life	正常使用 800 小时以上 800hours	
12	防护等级 Protection class	IP31	

13	电机绝缘等级 Motor Insulation Class	A 级 (105℃) /A Class (105℃)	
14	噪音分贝 Noise	<68db(max) in one meter	

5.3 Electrical Performance

序号 Num ber	项目 Item	要求
1	绝缘阻抗 Insulation resistance	10M Ω /导线与外框间测量, 500VDC/min 10M Ω / between wire and frame measurements , 500VDC / min
2	绝缘耐压 Dielectric strength	5mA Max/导线与外框间测量, 500 VAC/min 5mA Max/between wire and frame measurements 500 VAC/min