GTEK AUTOMATION
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Technical Data for:	M00191-14V-3A, Micro 1 Vacuum Pump
Revision	1.0
Effective Date:	11/18/2013

1. Application:

* These specifications apply to the DC Micro Vacuum Pump M00191-14V-3A.

2. Test Environment:

2.1 The standard for environment test is the ambient temperature of 20℃ and relative humidity of 65%RH. If no disputes occur, the test can be conducted under the following circumstance: the ambient temperature of 5-30℃ and relative humidity of 40-85%RH.

2.2 Position: Horizontal

2.3 Load: Air pressure is -150 mmHg.

3. Rated condition:

3.1 Rated voltage: DC 3.0 V

3.2 Operating voltage range: DC 2.5 V ~ 3.2 V

3.3 Rated current: The highest current is less than 450 mA while pressurizing with DC 3 V from 0 to 280 mmHg.

3.4 Pressure/Air Flow: At DC 3.0 V, the air flow is 0.9 LPM with no load and the air flow is 0.3 LPM with pressure at 75 mmHg.

3.5 Vacuum/Air Flow: At DC 3.0 V, the air flow is 0.9 LPM with no load and the air flow is 0.3 LPM with pressure at -75 mmHg.

3.6 Maximum Vacuum: The maximum pressure shall be more that -150 mmHg at DC 3.0 V.

3.7 Noise: Putting a 5 cm sponge under the pump, and placing it about 30 cm away from the noise meter. The evaluated noise level shall be less than 72 dB while pressurizing with DC 3.0 V from 0 to 150 mmHg. (See Figure 1)

3.8 Operation temperature range: The temperature have to be between 5℃ and 45℃ and humidity must be between 30% and 80% RH to function the pump well.

3.9 Preservation temperature range: The temperature has to be between negative 20℃ and positive 60℃ and humidity has to be between 30% and 80% RH to keep the pump in a good condition.

4. Guaranteed performance:

* After running through from test 4.1 to test 4.5, the leakage value shall be less than 18 mmHg/min. and noise level shall be less than 80 dB.

4.1 Low-temperature characteristic: Putting the pump in the temperature at negative 20℃ for 72 hours; then taking it out and putting it in a room temperature at 20℃±5℃ for two hours. Under this circumstance, running through test 3.3, 3.4, 3.7, 3.8 and finding out that the pump still performs to specifications.

4.2 High-temperature characteristic: Putting the pump in the temperature at 60℃ for 72 hours; then taking it out and putting it in a room temperature at 20℃±5℃ for two hours. Under this circumstance, running through test 3.3, 3.4, 3.7, 3.8 and finding out that the pump still performs to specifications.

4.3 High-temperature & High humidity: Putting the pump in the temperature at 60℃ and the humidity at 90% for 72 hours; then taking it out and putting it in a room temperature at 20℃±5℃ for two hours. Under this circumstance, running through test 3.3, 3.4, 3.7, 3.8 and finding out that the pump still performs to specifications.

4.4 Temperature & humidity cycle test: After doing the temperature and humidity cycle test, -20℃ x 2Hr → +25℃ x 1Hr → +60℃ 85%RH x 2Hr → 25℃ x 1Hr, for twelve times, the pump shall still perform the same functions proved by running through test 3.4, 3.4, 3.7, and 3.8.

4.5 Performance test: In a 100CC volume, pressurizing for 6 seconds, stopping for 2 seconds, and deflating for 5 seconds as one cycle. Doing it for 30,000 times, then examine the pump by test 3.3, 3.4, 3.7, and 3.8 and finding out that the pump still performs to specifications. (See Figure 2)

5. Thermal test performance:

* After the pump has been tested through test 5.1 and 5.2, it must be suitable the basic performance required by item 3.1 to 3.8. However the current is allowed lower than 550mA and the noise performance can not be guaranteed.

5.1 Low-temperature environment test: Under a temperature of 5℃ for 5 hours, then examining the pump by test 3.4, 3.5, 3.6, 3.7, and 3.8 and finding out that the pump still performs to specifications.

5.2 High-temperature environment test: Under a temperature of 45℃ for 5 hours, then examining the pump by test 3.4, 3.5, 3.6, 3.7, and 3.8 and finding out that the pump still performs to specifications.

6. Other:

6.1 The lead tension: No abnormality occurs when a 0.5 kg static load is hanging in the parallel direction of the lead wire for one minute.

6.2 Unusual test: There is no burning and smoking occurrence while the power is on with DC 3.0 V for 8 hours continuously.

6.3 Appearance: The appearances of the pump shall not contain cracks and impurities.

6.4 Label:

Vendor:	GTEK AUTOMATION
Phone No.:	Ph. 949-680-4242
Part No.:	P/N M00191-14V-3A
Description/Voltage:	Micro 1, 3VDC
Serial No.:	S/N 000000

6.5 Motor terminal for Soldering process the heat temp is controlled by 330°C, and operating time is for 3 sec only.

6.6 Do not use PVC tubing to plumb the air outlet. When ABS connects to PVC it gets brittle easily. We advise to use polyurethane or silicone tubing.

7. In case, any modifications, additions, or eliminations on this specifications are necessary, decisions shall be made through the negotiations between our customers and GTEK AUTOMATION.

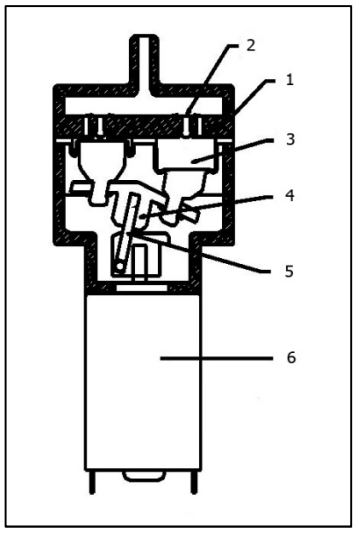
8. Acceptable standard: Acceptable standard is according to the MIL-STD-105D.

SPECIAL INSPECTION LEVELS

LOT SIZE	S4	
2-8	A	2
9-15	A	2
16-25	B	3
26-50	C	5
51-90	C	5
91-150	D	8
151-280	E	13
281-500	E	13
501-1200	F	20
1201-3200	G	32
3201-10000	G	32

9. Structural drawing and material list:

Material List:



No./Item/Description
1. Plastic: ABS (PA-757)
2. Umbrella: Rubber (CR-498A55)
3. Diaphragm: Rubber (CR-499A44)
4. Plastic: POM (F2003)
5. Pin: Stainless Steel (SUS420-J2)
6. RoHS Motor: DC 3.0 V

Noise Test:

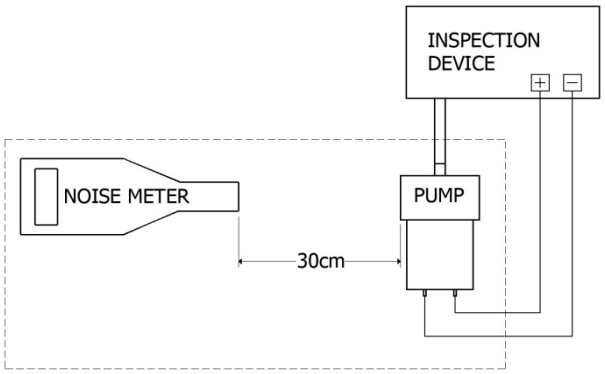


Fig. 1

Performance Test:

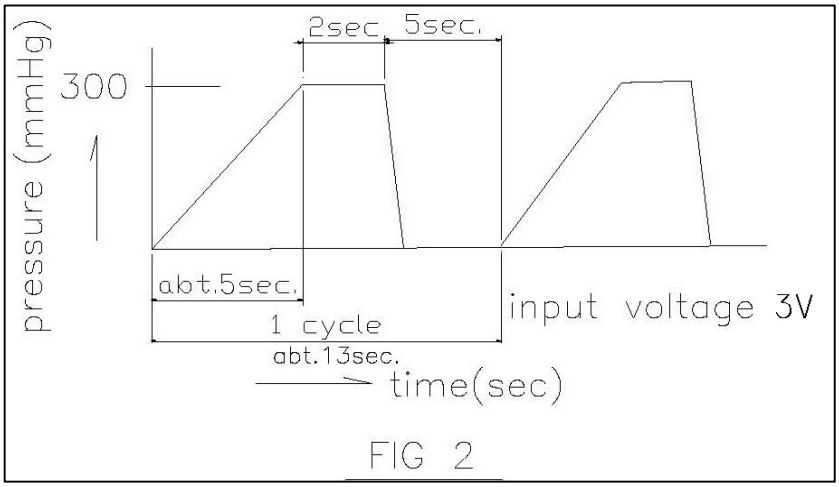


FIG 2

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10. Finished product drawing: (Undefined Tolerance +/- 0.5mm)