

BRUSHLESS 12-24 VOLT MICRO DIA-VAC®

MAINTENANCE AND DISASSEMBLY INSTRUCTIONS

A. General Operations Characteristics

1. The Micro Dia-Vac® normally runs at 130 to 150 F. It is not an indication of trouble if either the outer surface of the pump or motor are hot to the touch. The motor is specifically designed for use in an environment ranging in temperature between ambient and 104° F. For temperatures above 104° F please contact the factory to discuss available options such as the elevated head. It will eventually fail or overload if exposed to temperatures in excess of its normal operating conditions.

2. To check pumping efficiency, employ suitably dampened gauges connected so as to dead-head either pressure or vacuum for short periods of time.

NOTE: Check each separately. One port must be open during this test.

Use 0-60 PSI pressure gauge and 0-30 inch Hg vacuum gauge, (or mercury manometer.)

Pressure for the .160 eccentric should be a minimum of 28 PSIG at dead-head conditions

Vacuum for the .160 eccentric should be a minimum of 20" Hg at dead-head conditions

3. The Micro Dia-Vac® normally runs quietly unless there is an unusual load or the flow is restricted through the pump. If there seems to be an abnormal knock or rattle, check thoroughly as described in these instructions with particular attention to the tightness of all screws and fasteners.

4. All bolts and screws should have a drop of a thread locking compound on the threads before tightening.

5. *****IMPORTANT*****

The Brushless DC motor is designed for long life operation. Please ensure the motor is properly wired to ensure the full life expectancy of the motor. There are two wires extending from the motor. The red wire **MUST** be connected to the positive side of the DC power supply. The black wire **MUST** be connected to the negative side of the DC power supply. These must be connected in the correct manner or the motor will burn out.

6. The brushless DC motor comes complete with an attached controller. The controller may be adjusted by removing the white plastic cover on the controller and adjusting the motor RPM to suite you specific application.

7. Nominal running amps for the brushless DC are 2.0 amps for the 12 volt, and 1.0 amps for the 24 volt.

B. Maintenance Procedures

1. Motor Oiling:

No oiling or other lubrication is necessary at all. Insure that the bearings are not exposed to temperatures in excess of its designated operating range. Make sure to prevent water or other corrosive materials from contacting the motor or entering the pump housing. Corrosion of the bearings, which causes them to seize, is one of the most common reasons for pump failure other than a diaphragm replacement.

If the bearings do not seize, a poorly functioning bearing will still cause the motor to eventually burn out. Occasionally listen to the motor and inspect the bearings for wear. If necessary, consult an ADI representative about their replacement.

2. Diaphragm Replacement (See also Maintenance Procedure Below)

The degree of usage and condition of operating temperatures or pressures will determine the rate of replacement of parts. For heavy loads and constant operation the diaphragm should be inspected frequently. For lighter loads the diaphragm may operate successfully for over a year. The corrosive content of the gas media being pumped or liquids passing through the head can affect the recommended inspection and replacement cycle for the diaphragm.

For Teflon®/EPDM diaphragm replacement use kit #11401

C. Disassembly and Service of Head Section and Diaphragm

1. Remove head section by removing the four bolts. A flat headed screw driver may be necessary to gently separate the head and the valve body.

** If you have Teflon® coating on these parts use caution not to scratch the surface.

2. Inspect the valve gasket for any dirt or other accumulation. As long as there is no visible damage or wear, the gasket can be used again.

3. The diaphragm is secured by a single screw in its center. Remove this screw and gently remove the diaphragm and its plate. Some adherence to the metal may occur if the diaphragm has been in use for a long period. When reinserting the diaphragm, make sure there is a drop of thread locking compound on the diaphragm screw. When reinstalling head, make sure that the four head bolts are incrementally tightened to 28 inch pounds.

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