ATO

# ATO Vibration Motor
# User Manual



Note: After the eccentric block is tightened, in order to avoid the inflexible rotation of the rotor and burn out the motor, it is recommended to use a copper rod (ie a softer metal rod) or a wooden hammer to gently tap the end of the rotor to make it flexible.

Note: When adjusting the excitation force, ensure that the adjustment angles of the eccentric blocks on both sides of the vibration motor are the same and the direction is the same, that is, the eccentric blocks on both sides should be adjusted at the same set value, otherwise the excitation force will be uneven, which will greatly affect the service life of the vibration motor. And vibration effects and damage to the vibration motor.

◆ Vibration motor starts inspection line current for the first time

1. Turn on the power switch and let the motor run for 10 to 20 minutes.

2. If the vibration motor has an abnormal sound or excessive noise. Make sure that the mounting bolts are tightened and the mounting parts are welded without damage.

WARNING! Vibration motors installed on the structure generate large noise during operation.

3. Check the motor vibration noise decibel level during operation.

CAUTION: The operating current of the vibration motor must not exceed 10% of the rating indicated on the nameplate. If the vibration motor is running continuously, the line current exceeds 10% of the rating on the nameplate, which may cause damage to the vibration motor.

4. After several hours of operation, check the line current of each wire connection. If the reading exceeds 10% of the rating given on the nameplate, reduce the eccentric weight setting to further tighten the mounting or move the vibration motor to a more rigid position. After adjustment, check the line current again to ensure that the line current does not exceed 10% of the rating given on the nameplate.

CAUTION! Do not use a vibrating motor to operate beyond the frequency range specified on the nameplate, as this may result in damage to the vibrating motor. Verify that the line current does not exceed 10% of the rating specified on the nameplate over the entire frequency range.

5. After the first 8 hours of use. The mounting bolt tightening torque should be checked regularly and tightened if necessary.

◆ Maintenance and maintenance

1. The low-power vibration motor produced by our company adopts the bearing of the international famous brand vibration source. It has been injected with special lubricatinggrease, which can work normally for 5,000 hours without maintenance.

Be careful! Do not attempt to repair the vibration motor or replace the bearing without authorization. If it is repaired or replaced without warranty, the warranty conditions will be invalid.

2. The protection degree of the motor casing is IP65. As long as the user does not damage the sealing device when wiring or adjusting the eccentric block, no impurities will enter. The dust on the surface of the vibrating motor should be cleaned in time to facilitate heatdissipation on the surface of the vibrating motor.

3. The first month after the user installs and operates the vibration motor, apply the force arm extension wrench to tighten the foot mounting bolts not less than twice, and check at least once every month.

4. The color of the outer casing of the vibration motor is an international safety warning color. It is recommended that users do not use other colors to cover. If the customer needs, it can be modified separately.

◆ Vibration motor inspection

Perform a check of the vibration motor, cables and connections at least quarterly. The inspection method is as follows:

caveat! The vibrator should be switched off and locked and a warning sign should be given prior to inspection.

1. The vibrator should be cut off and locked, and a warning sign should be given.

2. Check the end cap for cracks and tighten the end cap screws.

3. Inspect the cable for damage, including cuts and wear. If it is damaged, it should be replaced in time.

4. Check the grounding. Make sure that the resistance of the vibration motor housing does not exceed 0.1 ohms, and ensure that the screw tightening torque on the ground terminal meets the requirements. Make sure that all coupling nut tightening torques on the terminal block meet the specified requirements. But don't screw it too tight.

◆ Use conditions of vibration motor

1. The ambient temperature varies with the season, but generally should not exceed -20 ° C ~ +40 ° C

2. Altitude: no more than 1000 meters.

3. Frequency: 50/60Hz (note that the nameplate label data should correspond to the power supply).

4. Insulation class: Main body F class.

5. Protection level: IP65.

6. Working mode: S1 continuous

◆ Installation of vibration motor

Before installing the vibration motor, all energy sources of the supply equipment should be cut off and locked, and a warning sign should be given.

1. Before installation, check whether there is any damage or moisture in the transportation and whether the fasteners are loose or not.

2. Check whether the nameplate data meets the requirements. If the user does not have special requirements, the eccentric block position of the vibration motor produced by the company is at the maximum excitation force position of the nameplate.

3. The mounting surface of the vibration motor must be firm and flat; the flatness of the mounting surface should be less than 0.08 mm (so that the internal vibration of the vibration motor housing can be minimized when tightening the mounting bolts), the plate should not have air holes Crack; the mounting surface is not less than the bottom surface of the vibration motor; welding should be avoided in the mounting surface area, otherwise the flatness of the vibration mounting surface will be affected.

4. Make sure that the mounting surface is free of paint and debris and that the vibration motor foot surface is clean.

Be careful! When the vibration motor has been installed and wired, it must not be welded on the mounting plate. Welding can cause damage to the vibration motor winding sand bearings.

5. The four foot bolts of the vibration motor should be made of high-strength bolts of not less than 8.8 according to the hole diameter. The wrench should be reliable and sturdy and should be loosened. No looseness is allowed. It should be fastened with a flat pad and double nut to prevent loosening. Failure to tighten as specified may result in damage to

the vibration motor. Threaded glue should be applied to all bolts before installing the vibration motor on the mounting plate.

◆ Vibration motor wiring

Be careful! Before connecting the power cord to the vibration motor, make sure that the power cord withstand voltage rating must be equal to or greater than the vibration motor voltage you are operating. Its minimum rated temperature is 105 °C. If the diameter of the power cord is not properly selected, the cable connector will not be clamped into place. The vibration motor will be damaged due to moisture or accumulation of materials in the junction box. If the power cable is damaged, it will cause a short circuit or short circuit to the power supply. The vibration motor is damaged.

1. Please strictly follow the diagram wiring, pay attention to the yellow-green two-color line in the power cord should be grounded reliably, in case the wiring error leads to personal safety and motor burnout, and the grounding wire should always be longer than the other three wires to ensure the occurrence of the lead wire. The line finally breaks when it breaks.
2. Check that the voltage is correct and stable, that the power cord is securely fixed, and that the wires cannot be cut off without authorization.
3. Check if the screw is properly locked. When using the motor, the circuit should be connected according to the instructions. Do not use water (medicine) to avoid leakage or burning of the motor. The actual voltage should not exceed 10% of the rated voltage. In order to avoid excessive current and burned.
4. Single-phase motor wiring: brown, blue, white, yellow-green. Brown and blue are power lines, and yellow and green are ground wires. It is recommended to connect the brown wire to the blue wire. The blue wire can reduce the induced voltage of the vibration motor.The white wire and the brown wire = the running capacitor wire. (To change the motor steering, just install the motor in the opposite direction.)

Important note: When wiring the vibration motor, the power cord should be kept loose. In this way, during the vibration of the vibration motor, the power cord is not excessively strained, resulting in stress inside the wiring. When used in a humid environment, keep the power cord loose enough to prevent condensate from flowing along the power line to the vibration motor.

◆ Check the rotation of the shaft

1. Open the vibration motor end cover and pay attention to protect the “O” type seal ring. Be careful! Try not to remove the eccentric block. If necessary, do not operate the vibration motor after the eccentric block is removed. Running the vibration motor after the eccentric block is removed may cause damage to the bearing.

caveat! When inspecting the rotation of the shaft under the condition that the end cover is removed, do not touch the rotating parts by hand, otherwise it may cause finger injury.

2. Start the vibration motor for 1 second and then stop.

3. Pay attention to the direction of vibration motor observation. If the vibrating motor rotates in the wrong direction, first cut off and lock the power supply / give a warning sign, then change the direction of vibration motor rotation.

◆ Adjustment of the eccentric block of the vibration motor (the eccentric block is set to 100% when shipped from the factory)

1. Use a hex wrench to open the side cover on both sides of the motor.

2. Use an open end wrench or adjustable wrench to loosen the eccentric block fixing nut on both sides of the motor.

3. Adjust the angle according to the actual demand

4. The larger the opening angle of the eccentric block, the larger the vibration force(the vibration force is the largest when the eccentric blocks overlap, and the vibration force is the smallest when the eccentric block is rounded)

Note: The angle and angular position of the eccentric blocks on both sides need to be consistent, otherwise the vibration will be unbalanced and the motor bearing will be damaged.

After the adjustment is completed, be sure to put the protective edge covers on both sides back to their original positions and lock the screws to protect the safety.

Angle and centrifugal force

Eccentric block angle

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