



YZC 系列低振动低噪声
三相异步电动机

YZC SERIES LOW NOISE LITTLE
VIBRATION INDUCTION MOTOR

使用说明书

Operation Manual

安徽皖南电机股份有限公司
Anhui Wannan Electric Machine Co.,Ltd

衷心感谢您选购、使用皖南电机。

在使用电动机之前，请扫码仔细阅读本说明书，以便您正确的使用和维护。

一 . 产品概述

我公司生产的 YZC 系列低振动低噪声三相异步电机适用于各种高精度的精密机床，以及需要低噪声、低振动的各种机械设备。

执行标准	Q/WN. 239-2020
功率范围	0.18-375kW
防护等级	IP55
绝缘等级	F 级
工作制	连续运行 S1

二 . 运行使用条件

2.1 海拔不超过 1000m。

2.2 环境空气温度随季节而变化，但最高不超过 40℃，最低为 -15℃。

2.3 电动机不得用于含有易燃性气体、化学腐蚀性气体或其它有害气体环境中（特殊环境用电机除外）。

2.4 高原环境、高温、低温与特殊环境用电动机需特殊定制。

三 . 调试



警示：所有工作都必须由熟练工人进行操作。电机做任何操作之前，确保电机与主线及辅助电源断开。并且，确保电源不被意外开启。

3.1 准备工作

3.1.1 仔细检查电动机外观是否损伤，核对电动机铭牌内容与实际要求是否相符，有无受潮现象。

3.1.2 检查电机在运输过程中有无变形和损坏，紧固件有无松动或脱落。

3.1.3 轻轻转动电动机转轴，转动应无异响。（注：装有骨架式橡胶油封的 IP55 电动机，转动时，相对较紧）。

注意 检查过程中，若有疑问，请向有关专业技术人员请教或与我们联系。

3.2 安装

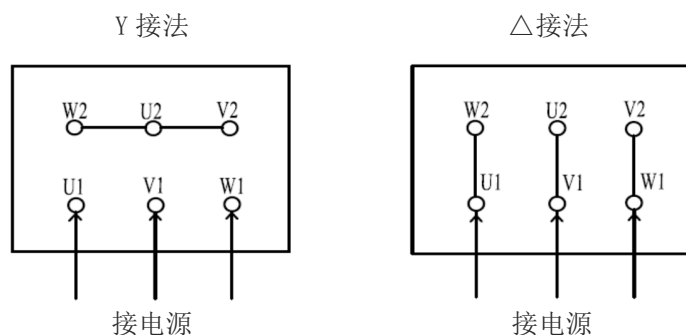
3.2.1 对带底脚的电动机，安装基础可以是金属平台，也可以是混凝土结构平台，无论是何种基础都应平整、坚固，且有足够的强度和硬度支撑电机。

3.2.2 电动机安装完毕后须将吊环拧紧。

3.2.3 当电机垂直安装且电机轴驱动端向下时，建议在非驱动端增加防护措施，以免水及其它外部物体进入风扇罩而影响电机散热；当电机垂直且驱动端轴朝上安装时，建议在驱动端采取必要的防护措施，防止液体沿电机轴进入电动机内。

3.3 电气连接

3.3.1 电机接线方式通常有两种，如未做特殊说明，3kW 及以下电机为 Y 接法，3kW 以上为 Δ 接法，正确的连接片位置如图所示。



3.3.2 运行前确保电机可靠接地。

3.3.3 电动机的相序 U、V、W 须与接入外电源相序 A、B、C 一一对应，电动机转向从轴伸端视之为顺时针方向，用户如需反转，将 A、B、C 任意两相的电源线对调即可。

3.3.4 电源频率与额定频率偏差不超过 2%，电源电压与额定电压偏差不超过 5%。

3.3.5 引入的电缆芯线要接在两垫圈之间，注意芯线的飞刺不要突出。引入接线孔时应防止线芯损伤，引入电缆还须用接线压板和弓形垫圈压紧固定，防止窜动。

3.4 电机与负载的联接

3.4.1 电动机允许采用弹性联轴器、正齿轮及皮带轮与负载机械联接。

3.4.2 采用联轴器联接时，电动机轴中心线与负载机械的轴中心要重合，以免电机在运行中产生强烈振动。

3.4.3 电动机与设备安装连接后，起吊不允许使用吊环，否则会直接损坏电机。

四 . 启动

4.1 准备工作

4.1.1 检查三相电源电压是否正常。

4.1.2 新安装或停用三个月以上的电动机，启动前应测量相位间绝缘电阻。用 500V 兆欧表测量电动机绕组绝缘电阻，所测值在冷状态下应不低于 5 M Ω ，否则要进行干燥处理后，方可使用。

4.1.3 检查电动机的紧固螺栓是否拧紧，轴承是否有充足的润滑油脂。

4.1.4 检查联轴器螺钉和销钉是否紧固，皮带联轴是否良好，紧松是否合适，机组转动是否灵活，有无卡位、窜动或异响。

4.1.5 检查电动机的接线（包括电动机热保护电阻和防潮加热带等配件的接线）是否符合要求，电机是否可靠接地。

4.1.6 检查电动机的冷却风扇，确保其没有被卡住。

4.2 启动注意事项

4.2.1 电动机允许满压、降压启动或软启动。但应注意，满压启动电流为额定电流的 4.5 ~ 8.0 倍。降压启动时，因转矩与电压的平方成正比，电压下降时启动转矩也随之降低。故当静负荷相当大时只能采用满压启动。

4.2.2 电动机接好线，经检查确认无误后，方可接通电源进行空载试运转，空载试运行时间一般在 20 ~ 30 分钟，并观察电机有无异常现象，待空转正常后方投入负载运行。（注：电机连续空载启动不得超过 3 次）

4.2.3 合闸后，如果电动机不转，应立即切断电源，以免烧毁电机。

4.3.4 严禁反复多次启动，以免电动机过热，甚至烧毁电机（特别是连续带负载直接启动）。

4.3 运行时的注意事项

4.3.1 严禁缺相运行。

4.3.2 防止过载，过载会导致过电流过热，过热将缩短绝缘寿命，降低电动机的可靠性。

4.3.3 电源电压的波动不得超出额定电压的 95% ~ 105%。

4.3.4 通电前应取下轴伸上的轴套和平键，使身体、衣物远离电动机旋转部分。

4.3.5 电机运行时若有异常应立即停机。

4.3.6 电机在运行过程中，表面应保持清洁，进风口不得受尘土纤维阻碍。

4.3.7 电动机若安装了防潮加热带，加热带切勿在电机运行时加热。

4.3.8 运行中若发现轴承过热，应停机检查轴承润滑脂是否太多；若发现异常，如怪声、过热、焦味等，应立即停机检查，待故障排除后方可使用。

五 . 电机的维护

5.1 电机的进风口及风道需保持清洁畅通，定期对电机进行检查和清扫，外壳不得堆积灰尘，不得用水喷射清扫电机。

5.2 轴承和润滑油脂的检查及更换

5.2.1 电动机运行时轴承允许温度不得超过 95 °C（温度计法）。

5.2.2 轴承每运行 2500 小时（约半年）需至少检查一次，如发现轴承润滑脂变质必须及时更换（封闭式轴承在使用寿命期限内不必更换润滑脂）。更换前，须将轴承内外盖、贮油腔内的废油以及排油装置的油管、油杯内的废油清理干净，并将轴承清洗干净。

5.2.3 润滑脂推荐采用 2 号中小型电机轴承润滑脂，油脂添加量以加到轴承容腔的 1/3 ~ 1/2 左右为宜。

注意：不要在电动机运行时添加润滑脂。过多的润滑脂会溢出，并可能附着在定子绕组上，降低其绝缘寿命，同时使轴承工作温度升高。

We are truly grateful for your purchasing of Wannan Motors. Before using the motor, please scan the QR code to read the manual so as to use and maintain the motor in a right way.

1.Summary

YZC series low noise little vibration induction motor is ideal for high-accuracy machine tools and precision instruments whose requirements are low noise and little vibration.

Standard	Q/WN.239-2014
Power	0.18-375kW
Protection	IP55
Insulation	F
Duty	S1

2.Usage Circumstance

2.1 The altitude exceeds not 1000m above sea level.

2.2 The ambient temperature is neither higher than 40 °C nor lower than -15 °C although it is always changing with season.

2.3 The motor cannot be applied in the circumstance where contains inflammable gases, chemical corrosive gases and other harmful gases or steam (Except for the special-purpose motor).

2.4 Highland、 high/low temperature environment motor should be customized.

3.Test



Warning: Installation and debugging should be performed by technician. Cut off the electricity of the main and auxiliary power supply before any work and ensure that all power supply will not be connected.

3.1 Preparation work

3.1.1 Check and ensure the appearance of the motor is in good order. Check and ensure that the motor nameplate is consistent with the actual requirement.

3.1.2 Ensure that the elements have been connected correctly, and the fasteners are tight.

3.1.3 Rotate the motor shaft gently to see whether its rotation flexible and quick or not.(IP 55 motor with reinforced seal rotates a little harder)

Note Any question during inspection, contact us or consult technician.

3.2 Installation

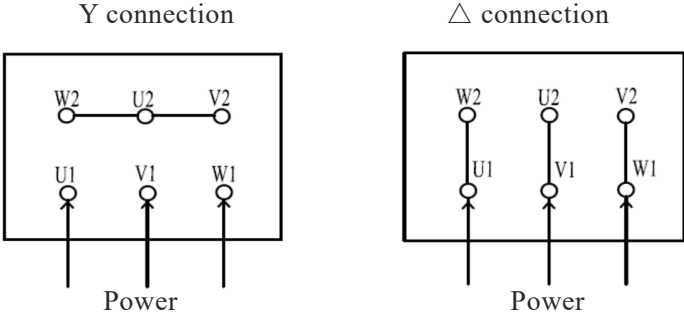
3.2.1 For the motor with feet, the foundation of installation can be a metal base or concrete structure platform, whatever the foundation is made of ensure that it has enough strength and rigidity against motor.

3.2.2 Screw the eyebolt when the installation has finished.

3.2.3 If the motor is installed vertically with its DE shaft downwards, a protective canopy is recommended to cover the fan cowling since it can prevent the ingress of water and foreign objects that may negatively affect the motor's cooling; if the motor is installed vertically with DE shaft upwards, necessary protective measure is recommended to be taken to prevent the liquids from entering the motor winding via the shaft.

3.3 Electrical connection

3.3.1 There are Y and Δ two connection, in general the motor of and below 3kW is of Y connection, above 3kW is of Δ connection. Ensure that all terminals are connected as the following diagram:



3.3.2 Ensure that the earth terminal in the connection box have been grounded.

3.3.3 Motor will rotate clockwise viewed from driving shaft end if the terminal U,V,W is connected respectively to power line A, B, C. Otherwise the motor will rotate anticlockwise. Provided the reverse rotation is need, interchange any two of the three terminal U, V, W.

3.3.4 Frequency deviation between power supply and rated value is $\pm 2\%$, voltage deviation is $\pm 5\%$.

3.3.5 Put the core of the lead-in electric cable between two gaskets, and ensure no spur on the cable. Be careful when draw the cable through cable entry at the terminal box, and fix the cable with a blanking plate and bow washer.

3.4 Coupling

3.4.1 Coupling, gear and belt pulley are allowed to be used for transmission.

3.4.2 The shaft center of the motor must keep consisting with that of the driven equipment in the same level.

3.4.3 Eyebolt is not available when lifting the motor which has been connected to driven equipment.

4.Start

4.1 Preparation

4.1.1 Check three phase power supply

4.1.2 For newly installed and having been standstill for more than 3 months motor, it is recommended to measure the inter-phase insulation resistance of the winding with 500V meg-

ohmmeter, the value should be no less than 5 MΩ. Otherwise the motor must be dried.

4.1.3 Check the fasteners to see whether they are tight or not, and whether the lubrication grease adequate or not.

4.1.4 Ensure that all screw and plug of coupling are tightened; pulley works well with its belt being elastic; assembling is flexible without abnormal sounds.

4.1.5 Ensure that all cables (including ones on motor protection resistance and space heater) have been correctly connected, and the motor has been safely grounded.

4.1.6 Ensure that the cooling fan will not be locked during motor operation.

4.2 Start matters

4.2.1 Motor can be started at rated voltage and reduced voltage, or adopt soft start. If the motor starts with rated voltage its starting current is 4.5-8.0 times rated value. As torque is proportional to voltage square, the torque will be reduced when the motor is

started at reduced voltage. So if the static load is fairly large, the motor can be only started with rated voltage.

4.2.2 After checking all the connections, turn on power for no-load operation test for 20-30min, and then put into with-load operation if it runs smoothly in operation test (Tips: Continuous with-load operation should be no more than 3 times).

4.2.3 Cut off electricity supply immediately if the motor cannot work when switch on.

4.2.4 Do not start the motor continuously in case the motor overheat or even burning (especially continuous with-load direct start).

4.3 Operation matters

4.3.1 Non-full phase operation is prohibited.

4.3.2 Avoid overload, since current overheat which is caused by overload will shorten the insulation lifetime, reduce the motor's reliability.

4.3.3 Voltage fluctuation of the supplied power cannot exceed 95% ~ 105% of the rated voltage.

4.3.4 Remove the sleeve and key on the shaft end before power on, keep body and clothes far away from rotating parts of motor.

4.3.5 Stop the motor immediately if any abnormal sound occurs.

4.3.6 Keep the motor clean and in good ventilation during operation.

4.3.7 Space heater (if the motor has) cannot be working when the motor is running.

4.3.8 , Stop the motor immediately to see whether there is too much grease if the bearing is found to be overheating; stop the motor immediately if the abnormal problems occur like strange sounds, overheat, burning smell or bearing heating. The motor can't be used only until all the problems have been solved.

5.Maintenance

5.1 Check and clean the motor periodically, ensure that no dust cover on the motor. Do not clean

the motor with water spray.

5.2 Bearing and grease

5.2.1 Bearing temperature should not exceed 95°C (Thermometer method) during operation.

5.2.2 The bearing should be inspected every 2500h (about half a year) operation. The bearing grease should be replaced immediately if the grease is found to be spoiled (Sealed bearing need not replace its lubrication grease in its lifetime). But the waste grease in bearing internal/external cover, oil chamber, oil tube, oil nipple must be cleaned out. It's proper to fill 1/3~1/2 capacity of the bearing chamber with lubrication grease.

5.2.3 No.2 lubricating grease for small medium size motor is recommended. Bearing size is listed in the attachment.

Note: Don't add grease during operation, since excessive grease will spill over to stator winding and shorten the life of insulation, at the same time will raise bearing temperature (bearing working temperature should be no higher than 90°C).

敬告用户：

请您按照本使用说明书的规定，正确地使用和储存电动机，我们将为您提供优质、快捷的服务。

在电动机使用过程中，您如有什么疑惑请与我们联系，我们将及时给予您满意的解答；您有什么良好的建议请向我们提出，以便我们改进，为您提供优质、快捷的服务。

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Dear user,

Please use and store the motor right following the instruction of the manual. We will make our effort to provide you with high-quality and prompt service. Contact us if you had any questions in application, and we will offer you timely and effective resolution; let us know if you had any advices or suggestions, with which we can improve ourselves and make service better. Anhui Wannan Motor Co., Ltd. reserves the right of final interpretation of the user manual. No copy, disclosing or using of the content of this user manual to third parties prior to written permission from Anhui Wannan Motor Co., Ltd.

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本说明书内容如有变动，恕不另行通知。

Content in the manual may be changed without prior notice.