三合一减速电机使用说明

Instructions of Three-in-one Reduction Motor

英国SZW有限公司
三智（中国深圳）传动设备有限公司

一 产品执行标准

1、 GB755-2008　旋转电机定额和性能（idt IEC 60034-1:1996）

2、 GB/T1032-2005 三相异步电动机试验方法

3、 GB14711-2006 中小型电机安全要求

4、 JB/T6456-2010 YEJ系列电磁制动三相异步电动机 技术条件

电动机型号含义及说明

如：YZ EF80-DV0.4-P4　YZ:起重用异步电动机 E:电磁制动

F：特力风机　80-DV:机座号

0.4:电机功率（KW）P:变频调速

4:电机极数

二 电磁制动三相交流电机参数

电机参数					制动器参数				散热	重量Kg
型号	额定功率Kw	额定电流A	转速r/min	堵转力矩/额定转矩	制动方式	直流电压	直流电流	制动力矩		
YZEF80-DV0.4-R4	0.4	1.6	1400	2.2	旁磁制动无单独电源线			6	自带风叶风冷	20
YZEF80-DV0.8-R4	0.8	2.6						6		24
YZEF90-DV1.5-R4	1.5	3.7						10		35
YZEF100-DV2.2-R4	2.2	5.2			后置电磁制动	直流DC 170V	≤0.8A	20	独立风扇单独电源线AC 220V	45
YZEF100-DV3.0-R4	3	6.8						20		49
YZEF112-DV4.0-R4	4	8.8						30		55
YZEF132-DV5.5-R4	5.5	11.6						45		80
YZEF132-DV7.5-R4	7.5	15.4						45		95

电机为三相交流AC380V，频率50HZ，4极,工作制S3-40%，接线方式Y，电机绝缘等级F级，防护等级IP54，制动器防护等级IP23。

三 工作条件环境

海拔高度：1000米以下

环境温度：-15℃～40℃，相对湿度：20%-80%，电机IP等级：风冷IP54，电机需要安装在通风良好的环境，电机不能防止喷射的水浸入，允许被雨水飞溅到（室外时顶部要有雨篷）。

四 安装及使用

选用本产品时，必须根据起升载荷、速度对照本说明书上的参数，合理选择用对应型号。

1．本产品安装前应检查:

a、直流制动器单独通电，检查其吸合、释放是否正常，有无卡滞或异常声音。

b、通电让电机空载运行，并作制动试验，确认正常后再装配使用。

2．经长途运输或长期搁置不用的电动机，使用前必须用500伏兆欧表测量定子绕组与机壳的绝缘电阻。应该不低于2MΩ，必要时进行干燥处理，合格后方可安装。

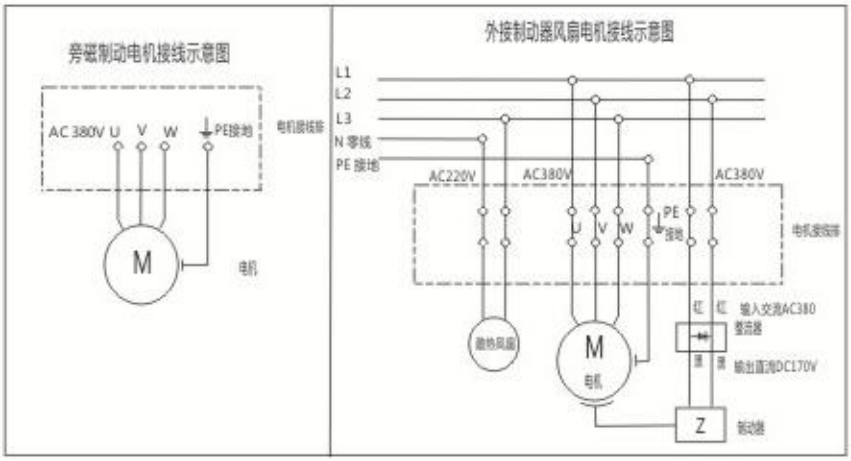
3．电动机安装时应校正两转轴中心线的相对位置，调整合格后旋紧安装螺栓，使其可靠地固定在机构上。

4．电动机在其接线盒内备有接地螺栓，并标有接地符号⏚,安装时应可靠接地。

5．电动机必须严格按其接线图接线，否则电动机不能正常工作，甚至会烧毁电动机。

6．外部电网输入必须稳定，电机额定电压380V偏差不大于±5%，制动器额定电压

DC170V偏差不大于±10%，超出范围后将影响产品正常工作。电动机在外接电源线时应检查电动机引出线的铜接头，



如果松动必须先旋紧接线板上的电动机引出线与铜接头的压紧螺母。然后才能旋紧外接电源线的压紧螺母，确保接触良好。

7．若减速电机配合变频器于低转速运转时，需加装独立辅助冷却风扇。

8．检查是否有漏油现象？减速电机体内已注入润滑黄油，免更换润滑油。

五 电机运行维护及保修

1．运行中接线盒盖及未用的出线口应盖好以防有杂物进入电动机内引起故障。

2．如环境温度超过规定值时，应采取减小负载或降低温度等有效措施，以免电动机因超载而过热受损。

3．电动机必须经常保持清洁，进风口及风道必须畅通无阻以保持正常运行。

4．为使电动机能正常运行，每六个月需要更换轴承润滑脂，加入新油脂时一般为轴承室空隙的2/3为宜。

5．没有安装使用的电动机应存放在干燥的库房内，不得受潮以免锈蚀电动机零件和降低电动机绝缘性能。

6．运输过程中，电动机不能淋雨受潮、不能受到碰撞和强烈的振动。

7. 保养周期：每日使用前要检查制动器，试运行一次检查是否有异响、振动、焦味、过热等反常现象。每年大检修一次，检修后要试运行确认正常后才能使用。

8. 保修：电机一年，制动盘三个月内因产品本身存在质量问题而不能使用的，我公司无偿免费修理或更换。因用户人为损坏或使用不当以及人力不可抗拒的自然灾害造成的除外。

六 减速机保养：

1）更换新的备件必须经跑合和负载试验后再正式使用。

2）定期检修安装基础、密封件、传动轴等是否正常。

3）如正常使用时，润滑油的最高温度应小于85℃。油温温升变化异常，产生不正常噪音等现象时，必须立即停机检查，排除故障后，方可继续使用。

4）不得重力锤击减速机外壳，以免损坏。

5）减速机工作环境温度为-40～+40℃。当环境温度低于0℃时，启动前润滑油必须加热到0℃以上或采用低凝固点的润滑油。

6）第一次使用或新更换蜗杆副、运转150-400小时后更换润滑油，以后的换油周期小于或等于4000小时。

7）定期检查油的份量和质量，保留足够润滑油，及时更换混入杂质或变质的油。

8）减速机装配尺寸另附上。

七 电动机一般故障及其排除的方法

序 号	故障情况	故 障 原 因	排 除 方 法
1	电动机起动时不转，有响声或振动	1.电动机馈电线路断电	1.检查馈电线间的电压
		2.电机三相电源缺相	2.检查保险丝和各相电压
		3.电源电压和频率不符	3.检查电源及频率
2	电动机起动后,转速过低	1.三相电源电压过低	1.检查电源电压
		2.三相绕组中首、末端接错	2.找出每相绕组的首、末端后正确接线
3	电动机转动时,有响声且电机过热	1.绕组有匝间短路	1.检查各相电阻和各相电流
		2.电源电压过高或过低	2.检查电源电压
		3.电动机过载	3.检查电机负载电流
4	保险丝熔断	1.二相间短路	1.修理绕组
		2.负载过大	2.减小负载
		3.电压过低	3.调整电压
5	绝缘电阻过低或击穿	1.绝缘老化或损坏	1.检修绝缘
		2.不清洁	2.用干燥的压缩空气吹净内部
		3.绕组或接线板受潮	3.拆开烘燥处理后再使用
		4.电机过热	4.拆开检修,防止继续发热
6	电动机振动较大	1.基础刚度不够牢固	1.重新安装
		2.联轴器不平衡	2.检查联轴器
		3.电动机与调速器等传动机械联接时偏心	3.检查联接时的同轴度
7	轴承响或过热	1.轴承损坏或不良	1.更换轴承
		2.润滑脂变质或质量差,有杂质或过多、过少	2.清洗轴承、更换润滑脂
		3.联轴器中心线不直	3.校正中心线

八 订货说明：

电机订货时应说明以下内容：

1.电机型号：例：YZEF80-DV0.4-P4;

2.额定电压：默认为380V，其它请注明；

3.额定频率：默认为50HZ，其它请注明或注明转速；

4.防护等级：默认为IP54，其它请注明；

5.冷却方式：默认为IC411，其它请注明；

6.结构及安装方式：默认为带标准凸缘安装（B5），其它请注明；

7.绝缘等级：默认为F级，其它请注明；

8.工作制：默认为S3－40%，其它请注明；

9.轴伸形式：默认为标准直轴伸系列，其它请注明。

温馨提示：

轴流风机电源为380伏，频率为50Hz交流电源，请勿接入变频电源，以免造成风机损坏！

本说明书仅供用户选型、使用维护参考，具体技术性能参数应以铭牌数据为准。

本说明书如有更改，恕不另行通知。

1. Product implementation standard

1.1 GB755-2008 Rotary motor quota and performance（idt IEC 60034-1:1996）

1.2 GB/T1032-2005 Testing method for three phase asynchronous motor

1.3 GB14711-2006 Safety requirements for small and medium sized motors

1.4 JB/T6456-2010 YEJ series electromagnetic brake three phase asynchronous motor: technical conditions

Motor model definition and description

Such as: YZ EF80-DV0.4-P4

YZ: asynchronous motor for lifting,

E: electromagnetic brake

F: Teli fan

80-DV: Motor base No.

0.4: Motor power (kw)

P: Variable frequency speed regulating,

4: Motor pole number

2. Parameters of electromagnetic brake three phase AC motor

<table>
<tr><th colspan="5">Motor parameters</th><th colspan="4">Brake parameter</th><th rowspan="2">Heat dissipation</th><th rowspan="2">Weight Kg</th></tr>
<tr><th>Model</th><th>Rated power Kw</th><th>Rated current A</th><th>Rotational speed r/min</th><th>Stall torque /rated torque</th><th>Braking mode</th><th>DC voltage</th><th>Direct current</th><th>Braking torque</th></tr>
<tr><td>YZEF80-DV0.4-R4</td><td>0.4</td><td>1.6</td><td rowspan="8">1400</td><td rowspan="8">2.2</td><td colspan="3" rowspan="3">Side magnetic braking No separate power able</td><td>6</td><td rowspan="3">Included Wind blade air cooling</td><td>20</td></tr>
<tr><td>YZEF80-DV0.8-R4</td><td>0.8</td><td>2.6</td><td>6</td><td>24</td></tr>
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<tr><td>YZEF100-DV2.2-R4</td><td>2.2</td><td>5.2</td><td rowspan="5">Post Electromagnetic brake</td><td rowspan="5">Direct current DC170V</td><td rowspan="5">≤0.8A</td><td>20</td><td rowspan="5">Independent fan Separate power line AC 220V</td><td>45</td></tr>
<tr><td>YZEF100-DV3.0-R4</td><td>3</td><td>6.8</td><td>20</td><td>49</td></tr>
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80</td></tr>
<tr><td>YZEF132-DV7.5-R4</td><td>7.5</td><td>15.4</td><td>45</td><td></td></tr>
</table>

3. Working condition and environment

Altitude: less than 1000 meters,Environment temperature: -15℃~40℃;Relative humidity: 20-80%; Motor IP rating: air cooled IP54,The motors requires installation in a well ventilated environment, the motor cannot prevent spray water immersion, allow raining splash (outside with top awning).

4. Installation and using

When using this product, we must control the parameters in this specification, according to the lifting load, speed, and reasonable choice of the corresponding model.

4.1 should be checked before the installation of this product.

4.1a, DC brake independently energized, please check: whether the attracting and releasing is normal, delay or with abnormal sound.

4.1b, through the electric motor unload operation, and the braking test, to confirm the normal use after reassembly.

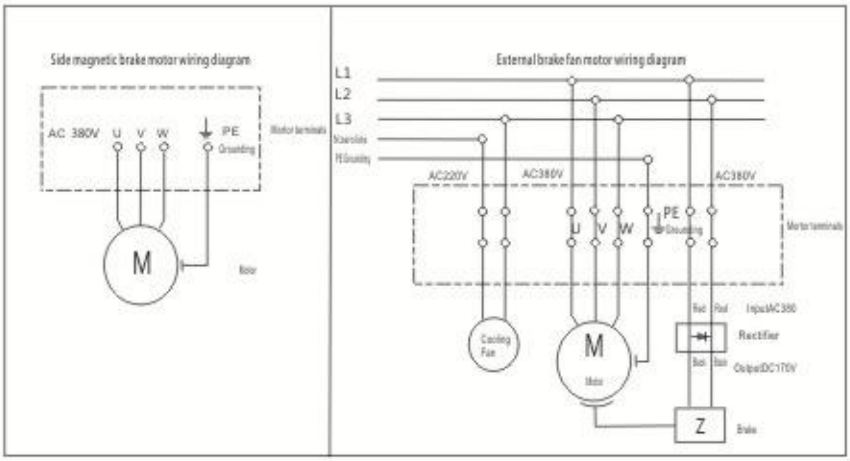
2. The long-distance transportation or long-term dormant motor, before use, insulation resistance measurement of stator and the casing by 500 volt meg-ohmmeter is needed, the test result should not be less than 2M, if necessary adopt dry processing, and the qualified products should be installed.

3. When mounts the motor, the relative position of the two shaft center line should be corrected, after passing by adjustment, tightens mounting bolts, reliably fixed in the mechanism.

4. The electric motor is provided with a grounding bolt in the junction box, and is marked with a ground mark ⏚ , the installation should be reliable for grounding.

5. The motor must be strictly connected in accordance with the wiring diagram, otherwise the motor cannot work, and even burning.

6. The external power grid input must be stable, motor rated voltage 380V deviation is not greater than ± 5%, brake rated voltage DC170V deviation is not greater than ± 10%, beyond the scope of the product will affect the normal work. When the electric motor is connected with the external power supply, the copper connector of the lead wire of the motor should be checked, if loose, must tighten the compression nut of motor lead line and copper joints in the connection box. Then tighten the nut of the external power line, ensure good contact.



7. If the reduction motor with the inverter is at low speed operation, then need to install a separate auxiliary cooling fan.

8. Please check whether there is oil leakage phenomenon? Reduction motor body has been injected into the grease, no replacement of lubricants.

5. Motor operation and maintenance and warranty

5.1 In running the junction box over and outlet port unused should be covered to prevent debris into the motor may cause fault.

5.2 If the ambient temperature exceeds the specified value, it should be taken to reduce the load or reduce the temperature and other effective measures, so as to avoid overheating motor due to overload and damage.

5.3 The motor must be kept clean, air inlet and air duct must be smoothly to maintain normal operation.

5.4 For the motor to operate normally, every six months to replace the bearing grease, as injecting the new grease is generally suitable for the 2/3 of the bearing housing space.

5.5 Motor without mounting to use should be stored in a dry storage, not to be affected with damp in order to avoid corrosion of motor parts and reduce motor insulation properties.

5.6 In the process of transportation, the motor cannot be rained with moisture, and collision or get strong vibration.

5.7 Maintenance cycle: daily before use to check the brake and test run a check whether there is abnormal sound, vibration, smell, overheating anomalous phenomenon. Overhaul once a year, after the test run to confirm the normal operation to use.

5.8 Warranty: for motor of one year, for brake disc of three months, because of the quality of the product itself cannot be used, the company is free of charge to repair or replace. Other than the damage caused by improper use of the user as well as the irresistible natural disasters caused by human.

6. Reducer maintenance:

6.1 Replacement of the new spare parts must be run through the test and load test again for the normal use.

6.2 Regular overhauls installation foundation, sealing parts and transmission shaft for to see if it works.

6.3 In normal use, the maximum temperature of the lubricating oil should be less than 85℃. If there are abnormal changes of the oil temperature rising and abnormal noise phenomenon, we must stop the machine immediately to check and remove the faults first then continue to use.

6.4 Shall not be the case of gravity hammer reducer casing, so as not to damage.

6.5 The range of reducer working environment temperature is -40～+40℃. When the ambient temperature is below 0 0℃, the lubricating oil must be heated to above 0℃ above or low freezing point oil should be adopted.

6.6 The first time use or replacement of the new worm pair, after running 150-400 hours, the lubricating oil must be replaced, later the oil changing period is less than or equal to 4000 hours.

6.7 Regular inspection of the amount and quality of oil, to retain sufficient lubricant, timely replace the oil mixed with impurities or deterioration of oil.

6.8 Reducer assembly size is attached.

7. General trouble of electric motor and its elimination method

No.	Fault condition	Cause of failure	Elimination method
1	When the motor starts without ro tating, there is so und or vibration	1.Motor feed line power off	1.Check the voltage between the feed line
		2.Check the non-full-phase state of three phase.	2.Check fuse and phase voltage
		3.Power supply voltage and frequency does not match	3.Check power and frequency
2	After starting the motor, the speed is too low	1.Three phase power supply voltage is too low	1.Check power supply voltage
		2.The first and the end of the three phase winding is conn ected wrongly	2.Find out the first and the end of each phase winding, then connects correctly
3	When the motor rotates, there is sound and the mot or is overheated.	1.Windings have short circuit turn to turn	1.Check the phase resistance and the phase current.
		2.Power supply voltage is too high or too low	2.Check power supply voltage
		3.Motor overload	3.Check motor load current
4	The fuse was blew out	1.Short circuit between two phases	1. Repair winding
		2. Load is too large	2. Decreasing load
		3. Voltage is too low	3. Adjusting voltage
5	Insulation resista-nce is too low or breakdown	1. Insulation aging or damage	1. Overhauling insulation
		2. Not clean	2. Blowing inside clearly with dry compressed air
		3. The winding or the wiring board is damp	3. Apart after drying treatme-nt and reuse
		4. Motor overheating	4. Apart to repair to prevent continued fever
6	Motor vibration is larger	1. Basic rigidity is not firm enough.	1. Reinstall
		2. Coupling unbalance	2. Check coupling
		3. There is eccentricity when the motor is connected with the governor and other driv-ing machinery	3. Check the coaxial degree of the connection.
7	There is sound of bearing or overh eating	1. Bearing damaged or defective	1. Replacing bearing
		2. Grease metamorphism or poor quality, there are impur ities or too much, too little	2. Clean bearing, replace grease
		3. Coupling center line is not straight	3. Correcting the central line

8 Order description:

The following contents shall be stated in the motor order:

1 Motor model: e.g. YZEF80-DV0.4-P4;

2 Rated voltage: the default parameter is 380V, for other specification please indicate;

3 Rated frequency: the default parameter is 50HZ, for other specification please indicate or specify the rotational speed;

4 Protection degree: the default degree is IP54, for other specification please indicate;

5 Cooling mode: the default parameter is IC411, for other specification please indicate;

6 Structure and installation method: the default method is standard flange mounting (B5), for other methods please indicate;

7 Insulation level: the default level is F, for other levels please indicate;

8 Working systems: the default system is S3-40%, for other system please indicate;

9 Shaft extension type: the default type is standard straight shaft extension series, for other type please specify.

Reminder:

The axial flow fan adopts 380V and 50Hz frequency AC power supply, cannot access the variable frequency power supply, in order to avoid the damage of fan!

This manual is reference only for selection, use and maintenance by user, specific technical parameters should be based on the nameplate data as the standard.

This specification is subject to change without prior notice.