

# 工业节能风扇维保服务说明

## 一、开勒为何为客户提供维护服务？

### 1、维保对客户的重要性

风扇保养的意义在于，风扇在长期的使用过程中，可能会影响到设备原有的平衡，设备的稳定性，可靠性，使用效益均会有相当程度的降低。因此，设备就要进行大修或更换新设备，这样无疑增加了企业成本，影响了企业资源的合理配路。为此我们要为客户提供维护保养， 为保证机械设备经常处于良好的状态，提高风扇的完好率、利用率，减少机械磨损，延长机械使用寿命，降低机械运行和维修成本，确保安全生产，因此建议。

## 二、风扇保养标准内容（建议设备投入使用每一年到两年进行一次） 服务项目说明

### Service Items Explanation

维护明细		说明
Maintenance Details		Explanation
整体 9 项深度清洁 Whole Fan 9 Items Deep Cleaning		
1	扇叶 Blades	在生产环境中，油污及灰尘会附着于扇叶及尾翼，外观上影响美观，不符合车间 5S 要求；严重时会因为积灰层厚，导致扇叶重量失衡，影响运行的动平衡性；增强连接部件金属疲劳。
2	尾翼 Winglet	In the production environment, oil and dust will adhere to the fan blades and tail fins, which will affect the appearance and aesthetics, and will not meet the 5S requirements of the workshop; in severe cases, the weight of the fan blades will be imbalanced, which will affect the balance of the movement and affect the dynamic balance of the operation; Accelerate metal fatigued of the connecting parts.

3	主机内部 Main body inside	主机内部设计有同轴散热风扇，保证电机的自身散热，长期不清洁会积灰，导致散热不畅，电机运行温度升高，增加电机故障风险。及时清洁主机内部灰尘可有效降低电机运行故障率。 The internal design of the mainframe has a coaxial cooling fan to ensure the heat dissipation of the motor itself. If it is not cleaned for a long time, it will accumulate ash, resulting in poor heat dissipation, increasing the operating temperature of the motor and increasing the risk of motor failure. Cleaning the dust inside the main unit in time can effectively reduce the motor failure rate.
4	主机外罩 Main body cover	在生产环境中，油污及灰尘会附着于主机外罩，外观上影响美观，不符合车间 5S 要求。In the production environment, oil and dust will adhere to the outer cover of the mainframe, and the appearance will affect the appearance and does not meet the standards of the workshop 5S.
5	控制系统外观 Control system outside	风扇控制系统是长期操作部件，表面会因人为操作沾染油污、灰尘等，及时清洁提升车间 5S，还可防止因油污及潮湿带来的触电风险。The fan control system is a long-term operating component. The surface will be contaminated with oil, dust, etc. due to human operation. The 5S can be cleaned and cleaned in time to prevent the risk of electric shock caused by oil and moisture.
6	控制系统内部 Control system inside	控制系统内部需要对内部元器件进行散热，长期不清洁会因为积灰过多导致散热效果不佳、进而影响变频器使用寿命。及时清洁可以有效降低控制系统的故障发生率。Internal control components need to dissipate internal components. If they are not cleaned for a long time, the heat dissipation effect will be poor due to excessive dust accumulation, which will affect the service life of the inverter. Timely cleaning can effectively reduce the failure rate of the control system.
7	散热风扇 Cooling Fan	散热风扇主要用于对控制系统内部进行散热，长期不清洁会因为积灰过多导致过散热效果不佳、进而影响元器件使用寿命。及时清洁可以有效降低控制系统的故障发生率。The cooling fan is mainly used to dissipate the heat inside the control system. If it is not clean for a long time, the excessive heat dissipation will result in poor heat dissipation and affect the service life of the components. Timely cleaning can effectively reduce the failure rate of the control system.
8	变频器 Inverter	变频器自身需要散热，长期不清洁，会影响变频器的使用寿命。及时清洁可以有效降低控制系统的故障发生率。The inverter itself needs to dissipate heat, and it will not clean for a long time, which will affect the service life of the inverter. Timely cleaning can effectively reduce the failure rate of the control system.

9	过滤网 Fliter	控制系统进出风口均有过滤网,长期不清洁会因为积灰过多导致过滤网堵塞, 散热效果不佳、进而影响变频器使用寿命。There are filters in the inlet and outlet of the control system. If the cleaning is not clean for a long time, the filter will be clogged due to excessive ash accumulation, and the heat dissipation effect will be poor, which will affect the service life of the inverter.
<b>整机 18 项安全检查 Whole Fan 18 Items Safety Checking</b>		
1	主机平衡 Main body balance	风扇在安装完成后属于平衡状态,由于现场环境的差异不能保证风扇运行时每根扇叶受力非常均衡,因此, 风扇主机运行一年需要做平衡性检查, 有助于排除隐患。The fan is in a balanced state after the installation is completed. Because the difference in the site environment does not guarantee that the fan blade is very balanced when the fan is running, the fan host needs to perform a balance check for one year to help eliminate the hidden danger.
2	风扇运行平稳 Fan running smoothly	
3	安全绳 Safety rope	安全绳是风扇重要的安全保障之一, 周期性检查, 防止出现意外失效。Safety ropes are one of the important safety guarantees for fans, and they are periodically checked to prevent accidental failure.
4	整套紧固件 Complete set of fasteners	紧固件是连接各部件的重要安全件, 采用美国进口紧固胶防止松动, 周期性全面检查, 有助于排除隐患。Fasteners are important safety parts for connecting various parts. They are made of American imported fastening rubber to prevent looseness and periodic comprehensive inspection, which helps to eliminate hidden dangers.
5	钢丝拉索 Guy wire	钢丝拉索系统, 保障了风扇的平衡运转, 同时也分担了风扇的自重, 周期性全面检查, 有助于排除隐患。The wire cable system ensures the balanced operation of the fan, and also shares the fan's own weight and periodic comprehensive inspection, which helps to eliminate hidden dangers.
6	安全环 Safety ring	安全环是风扇重要的安全保障之一, 周期性检查, 有助于排除隐患。The safety ring is one of the important safety guarantees of the fan. Periodic inspection helps to eliminate hidden dangers.
7	插件 Plugins	插件是风扇重要的安全部件之一, 承受了风扇运行与静止时的各种荷载, 周期性检查, 有助于排除隐患。The plug-in is one of the important safety components of the fan. It can withstand various loads when the fan is running and at rest, and periodic inspection can help to eliminate hidden dangers.
8	扇叶 Blades	扇叶和尾翼是风扇气流场形成的部件, 是风扇运行速度最高的部件, 周期性检查, 有助于排除隐患。The fan blades and tail fins are the components formed by the fan airflow field and are the components with the highest fan speed. Periodic inspections help to eliminate hidden dangers.
9	尾翼 Winglet	

10	线路 Circuit	风扇的布线线路需要周期性检查, 有助于排除隐患。The wiring of the fan needs to be checked periodically to help eliminate potential hazards.
11	接线 Wiring	风扇的接线需要周期性检查, 有助于排除隐患。The wiring of the fan needs to be checked periodically to help eliminate potential hazards.
12	变频器参数 Inverter Parameter	检查变频器的参数及运行情况, 需要周期性检查, 有助于排除隐患。Check the parameters and operation of the inverter, and need to check periodically to help eliminate hidden dangers.
13	运行电流 Running current	检测风扇的运行电流是否正常。Check if the running current of the fan is normal.
14	断路器 Breaker	电气元器件属于长期操作部件, 周期性检查, 防止影响风扇的正常使用。Electrical components are long-term operating components that are periodically checked to prevent normal use of the fan.
15	三挡开关 Three gears switch	
16	调速 Speed regulator	
17	散热风扇 Cooling fan	控制系统内部散热风扇运行故障会引起控制箱内部温度过高, 引起内部散热不佳、线路老化, 严重情况下引起短路、变频器损坏。Failure of the internal cooling fan of the control system may cause the internal temperature of the control box to be too high, resulting in poor internal heat dissipation, aging of the line, short circuit and damage to the inverter in severe cases.
18	其他异常 Other problems	有助于排除隐患。Help to eliminate hidden dangers.

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