Basic principle of axial fan

Zeiss Aerodynamics Co., Ltd.
Building 5 No.6 Suyuan Road Xuanwu District
Nanjing Jiangsu CHINA
Phone +86(025)85766799

The ordinary axial fan can be used for ventilation in general factories, warehouses, offices, residences and other places, as well as for forced ventilation of air coolers, evaporators, etc. Anticorrosive and explosion-proof axial fans adopt anti-corrosion materials and explosion-proof measures, and are matched with explosion-proof motors. They can be used as ventilation and air exchange equipment, and are generally used in places with explosive, volatile and corrosive gases. The gas conveyed by the required axial fan shall be free from obvious dust, viscosity and fiber materials; The temperature of the motor directly connected type shall not exceed 40 ° C, and the temperature of the belt driven type shall not exceed 60 ° C.

Axial fan is mainly composed of impeller, casing, motor and other components. The support and casing air outlet are connected by profile steel. Among them, the impeller and sleeve of anti-corrosion axial fan are made of glass fiber reinforced plastic, and other types of axial fans are generally made of steel plate. Working principle of axial fan: when the impeller rotates, the gas enters the impeller axially from the inlet, and the energy of the gas is increased through the impelling of the blade to the impeller, and then flows into the guide vane. The guide vane changes the deflected air flow into axial flow, and at the same time introduces the gas into the pressure pipe, further converting the kinetic energy of the gas

into pressure energy, and then introduces the working line. The working mode of the axial fan blade is similar to that of the airplane wing. However, the latter acts on the lift on the wing and supports the weight of the aircraft, while the axial fan is fixed and moves the air. The transverse strip surface of axial fan is generally the wing contour. The blade can be fixed or rotated around its longitudinal axis, and the included angle between the blade and the air flow or the blade spacing shall not be adjustable or adjustable. Changing blade angle or spacing is one of the main advantages of axial fan. Small blade spacing angle produces lower flow, while increasing blade spacing produces higher flow. The advanced axial fan can change the blade spacing (similar to the helicopter rotor) while the fan is running, thus changing the flow accordingly. This is the so-called movable blade adjustable (VP) axial fan.