

AirManager cap



When air is moving around a point in a circular path, linear speed of air depends on the distance from the center of motion. Obviously max speed will be on peripherals and as we move closer to the center, linear speed will be reduced to zero. Tropical cyclones can produce extremely powerful winds but in the center of it there is an "eye", a very calm area in the middle of the storm. Air movement inside of a cyclone is very complex and it involves many tangibles but a simplified version of it could be used for our purposes.

AirManager cap has two cylindrical shields inside of each other with vertical slots. When wind is pushing air between the cylinders, it is moving in a circular path creating a near-zero distortion in the center. Hot flue air is coming from the center and distributed outside through the slots. When arranged like this, the cap is not sensitive to the outside wind, whether it is horizontal gusts or vertical wind shear. It becomes a one way river - hot ashes are pushed outside but nothing gets inside. Whatever happened outside, it will not affect performance of the flue. However, this design assumes that there are no problems with the flue such as a weak draft. AirManager was designed for gas (non-smoking) appliances and fireplaces, it has openings on the side of its body and smoke will cause discoloration of the cap. Also, wood burning fireplaces have much higher flue temperature and as a sequence, faster moving airflow, which is not suitable for this cap.

