

# Induced Flow Fans

## M.K.Plastics Axijets vs. Strobic

October, 2016

### Performance is key

Validity of the fan aerodynamic and acoustic performance ratings are critical for accurate, safe, and efficient application of the product. *ANSI/AMCA Standard 260-13 Laboratory Methods of Testing Induced Flow Fans for Rating* is the globally recognized test standard. Fan manufacturers should test the product in accordance with this standard. And the performance ratings should be Licensed to Bear the AMCA Certified Ratings Seal for Induced Flow Fan Air and Sound Performance (third party validation that the published performance ratings are accurate and true).

These fans are used in life safety application both on the inlet side of the fan and the discharge side of the fan. Fan inlet side performance is tested during commissioning. The discharge performance is typically not included in the TAB report. The discharge side performance affects the safety of the air in the building envelope. AMCA certified performance ratings include such items at discharge volumes and velocities, key variables to momentum flux / plume rise calculations. The input data must be correct. This is particularly important if wind modeling is being performed for the building's HVAC exhaust and supply to determine safety.

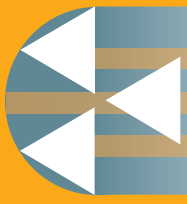
All M.K.Plastics Axijets are so tested and have AMCA Certified performance ratings.

The Strobic model TS fan ratings are seemingly high, and are not AMCA certified. Strobic's selection software defaults to this model. The Strobic model M fan ratings are poorer than most competitors', but are AMCA Certified.

Furthermore, contrary to their long-time claim that the acoustic windband silencer has no effect on entrainment performance, it really does. The M model performance is AMCA Certified with and without the windband silencer. The performance ratings are significantly different.

Strobic's claimed plume height at comparable or lower velocity and mass flow is always significantly higher than the completion. All the other manufacturers' plume heights can be validated against published ASHRAE calculation methods. It is a mystery how Strobic calculates the plume height.

All M.K.Plastics Axijets have AMCA Certified FEG ratings (Fan Efficiency Grade) that exceed the minim FEG ratings required by ASHRAE 90.1 and 189. The Strobic TS and M models have no such ratings.



The Axijets offer higher discharge velocities and mass flow than the Strobic fans at equal or lower BHP. This affords a broad “built in by design” safe turndown of the fan with a VFD to save energy.

## Construction and fan type, also very important

The Strobic TS and M models are only available as direct drive, coated steel, mixed flow fans. Mixed flow induced flow fans lose efficiency at inlet pressures above 3”, resulting in high power consumption and fan noise. Replacing the motor on this type of fan is difficult, time consuming, and expensive.

M.K. Plastics Axijets are available in both SWSI airfoil centrifugal (more efficient and quieter) and mixed flow type. And both are available in belt drive (easier motor replacement) and direct drive. Refer to matrix.



**Centrifugal BD**



**Centrifugal DD**

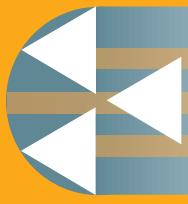


**Vertical BD**



**Vertical DD**





Direct drive centrifugal Axijets are available in optional configurations to make motor replacement an easier task.

## OPTIONAL DIRECT DRIVE ARRANGEMENTS



AMCA ARRANGEMENT #8



DIRECT DRIVE EZ-4<sup>®</sup>



DIRECT DRIVE 'SWINGOUT'

All these Axijets are available in coated steel. The centrifugal Axijets are also available in FRP for superior corrosion resistance.

Induced Flow fans are often supplied with balancing plenums. In addition to coated steel, M.K.Plastics offers the K-Kore, double wall, insulated FRP plenum construction. It is stronger, lighter, more corrosion resistant, and less costly than coated steel. Our plenums are also available with pre-filters, and energy recovery coils.

## And the system has to be controlled

M.K.Plastics pioneered and perfected pressure based exhaust fan control with our LeadLag system. M.K.Plastics has a global local network of factory trained and certified technicians to start up and make field design based changes as required.

CORROSION RESISTANT EXHAUST SYSTEMS



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