

VORTEX GENERATOR STOL KIT BY

What are the benefits of Aircraft Development's vortex generator STOL kit for homebuilt aircraft? There are many advantages to this kit: 1) increased lift, 2) slower stall speed by 4 to 6 MPH, 3) shorter landing distances, 4) shorter takeoff distances, 5) higher angle of climb, 6) tighter turns, 7) gentler stalls, 8) better aileron authority at slow speed, 9) aircraft is more controllable at slow speed, 10) in general increased total performance and safety.

How do Aircraft Development's vortex generators accomplish all those benefits? As a wing flies through the air a boundary layer forms along the surface of the wing. As the angle of attack of the wing increases, the angle of attack being the angle the wing makes with the direction the relative air is meeting the wing, the boundary layer can no longer stay attached and separates from the wing. The result of the boundary layer separating from the top surface of the wing is that lift is lost and the wing stalls. Figure 1 below is a picture of a typical airfoil at a 15° angle of attack in a wind tunnel with smoke trails. As can be seen the airfoil is stalled as indicated by the erratic smoke pattern above and behind the airfoil section. Figure 2 below is a picture of the same typical airfoil at a 15° angle of attack in the same wind tunnel with smoke trails. As can be seen the airfoil is not stalled the airfoil section is still producing lift as indicated by the uniform smoke pattern above and behind the airfoil section. This is the difference that Aircraft Development vortex generators can make to your wing.

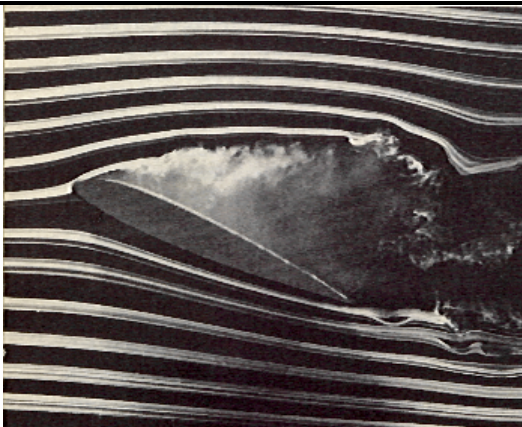


FIG. 1

Picture of airfoil section at 15° angle of attack in wind tunnel with smoke trails showing the airfoil is no longer producing lift and is stalled.

Picture of airfoil section at 15° angle of attack in wind tunnel with smoke trails showing the airfoil is not stalled and still producing lift with Aircraft Development vortex generators installed.



FIG. 2

What comes with Aircraft Development's deluxe generic vortex generator kit 261-AD1? The kit comes with clearly written installations instructions that allow you to determine where on the aircraft, especially on the wings, to install the vortex generators based on empirical data to get the benefits described above. We also give instructions on how to determine the wing location for the vortex generators through flight testing if you prefer to determine that information for yourself. The installation instructions also gives tips on other suggested locations to place vortex generators that may well cut down on the drag of the airplane thus increasing the aircraft's speed and reducing fuel consumption. It also includes the number of vortex generators (VG's) listed in the table below for the kit selected. Plus a 3M very high bond adhesive tape to apply the vortex generators to the aircraft. The deluxe generic vortex generator kit 261-AD1 contains enough vortex generators to do most homebuilt aircraft wings and if necessary the underside of the horizontal tail. In the case of an exceptionally large homebuilt aircraft or a biplane additional vortex generators may be required and can be purchased 25 at a time in kit 261H for \$XX.XX. The generic vortex generator kit 261-AD2 is the same as the 261-AD1 kit except it has only enough vortex generators to do the wings of the average homebuilt aircraft. Some aircraft will not require that vortex generators be placed on the underside of the horizontal tail. This kit gives you the option of buying the less expensive kit and if need be purchase additional vortex generators later. The vortex generator kits that Aircraft Development has specifically flight tested and developed kits for contain the number of vortex generators dictated through flight test plus extra vortex generators for spares or to do some experimenting on your own.

The vortex generators are precision injected molded and made from UV stabilized clear polycarbonate material. This material is extremely strong and lightweight. 100 vortex generators will weigh approximately 1 ounce. The bottom of the vortex generator has a slight curve to match the wings airfoil. This feature allows the vortex generator to better adhere to the wing as opposed to the flat bottomed vortex generator made from extruded aluminum. These vortex generators have a full sweeping sail which wind tunnel testing has shown is superior to the vortex generators that have a steeper sweeping sail with a flat top. Figure 3 is a picture of the vortex generator which has a base of 1.0" X .40".



FIG.3

KIT NO.	DESCRIPTION OF VORTEX GENERATOR KIT	NO. of VG's
261-AD1	Deluxe generic vortex generator STOL kit for homebuilt aircraft	150
261-AD2	Generic vortex generator STOL kit for homebuilt aircraft	65
261-RV1	Vortex generator STOL kit for the RV-3 aircraft	65
261-RV1	Vortex generator STOL kit for the RV-4 aircraft	65
261-RV1	Vortex generator STOL kit for the RV-6/6A aircraft	65
261-RV1	Vortex generator STOL kit for the RV-7/7A aircraft	65
261-RV1	Vortex generator STOL kit for the RV-8/8A aircraft	65