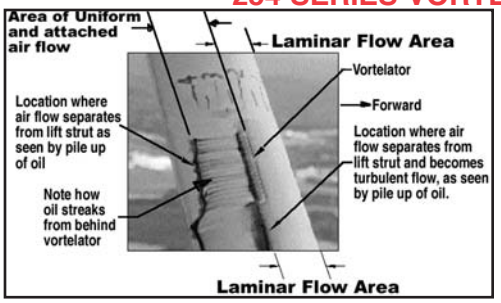
VORTELATOR KITS

254 SERIES VORTELATOR KITS FOR HOMEBUILT AIRCRAFT



Aircraft Development has developed a vortelator kit that can increase your homebuilt aircraft speed by 4 to 7.5 mph. This is accomplished by placing vortelators at certain critical locations which will cause the boundary layer to stay attached to flying surfaces for a greater distance, and to keep the boundary layer thinner. The net result of these two actions is that it reduces both the profile drag and skin friction drag components of the parasite drag. Another way to think of it is that the wake behind the aircraft will be smaller, thus requiring less horsepower to propel the aircraft through the air. Behind the vortelator mini vortices are created as can be seen by the lines of oil that form behind the vortelator. These mini vortices sweep the oil to a point in between the mini vortices, and that's how the oil lines are formed. Whenever one sees these characteristic oil lines forming behind the vortelator one knows the vortelator is working. The vortelator allows the air flow to stay attached to the lift strut for approximately 80% of the lift strut's chord. In the area where there is no vortelator, the air flow separates from the lift strut and becomes turbulent, at approximately 40% of the lift strut's chord, as can be seen from the pile up of oil at the 40% chord position. At the 40% chord position the lift strut is 2.01" thick, and at the 80% chord position the lift strut is 1.18" thick. That means the turbulent wake coming off the lift strut is only 59% as thick with the vortelator attached as without the vortelator attached. That also means with a narrower wake less horsepower is required to propel the lift strut through the air.

Kit Number	Description or Effect of Installing Vortelator Kit
254-AD	Delineates a procedure for determining where vortelators should be placed on an aircraft, for increased speed, by visualizing surface air flow through simple flight tests at straight and level flight at cruising speed. This kit is ideal for those aircraft models that do not have enough aircraft out in the field for Aircraft Development to economically warrant the time and expense of developing kits for.
254-RV3 254-RV4 254-RV6/6A 254-RV7/7A 254-RV8/8A	The vortelating of the airframes of these RV aircraft will give about a 4 to 5 MPH increase in speed and a decrease in the stalling of about 2 MPH. The vortelating of the propellers of these aircraft is more random in nature. From flight tests the increase in speed can be from 2 to 4 MPH depending on the propeller used.
254-LANCAIR	The vortelating of the airframes of the Lancair 235, 320, 360 aircraft will give about a 4 to 5 MPH increase in speed. The vortelating of propellers of these aircraft is more random in nature. From flight tests the increase in speed can be from 2 to 4 MPH depending on the propeller used.
254-T18	The vortelating of the airframes of the T-18 aircraft will give about a 4 to 5 MPH increase in speed. The vortelating of propellers of the aircraft is more random in nature. From flight tests the increase in speed can be from 2 to 4 MPH depending on the propeller used.

Description	Part No.	Price
VORTELATOR TEST KIT 254-AD	05-00851	.
VORTELATOR RV3 KIT 254-RV3	05-00852	.
VORTELATOR RV4 KIT 254-RV4	05-00853	.
VORTELATOR RV6/6A KIT	05-00854	.

Description	Part No.	Price
VORTELATOR RV7/7A KIT	05-00855	.
VORTELATOR RV8/8A KIT	05-00856	.
VORTELATOR KIT FOR LANCAIR	05-00857	.
VORTELATOR KIT FOR T18 254-T18	05-00858	.

246-100 CESSNA VORTELATOR KIT - Can increase Cessna speeds by up to 6 MPH. This kit is FAA approved for the following Cessna aircraft: 140A, All models of 150, All models of A150, All models of 152, 170 A&B, All models of 172 (USAF T-41A), P172D, R172E (USAF T-41B) and (USAF T-41C and D), R172F (USAF T-41D), R172G (USAF T-41 C and D), R172H (USAF T-41D), R172J, R172K known as 172XP, 172RG, All models of 175, All models of 180, All models of 182, R182, T182, TR182, All models of 185, A185E, A185F, All models of 205, All models of 206, All models of P206, All models of U206, All models of TP206, All models of TU206, All models of 305 known as L-19. .....P/N 08-00731 .....

FLY TO USE LESS FUEL - a booklet which explains the working speeds of the aircraft such as, most flight time per gallon of fuel, most mies per gallon of fuel, steepest climb etc. It also explains these working speeds of the aircraft in simple to understand graphics, no complicated mathematical formulas used. There is no need to do at time consuming flight test program to determine the working speeds of your aircraft. This booklet gives simple multiplication factors, based on cruising speed, to determine the working speeds for your homebuilt aircraft.

Fly To Use Less Fuel booklet.....P/N 08-00732 .....

PROPELLER VORTELATOR KITS FOR ULTRALIGHT, HOMEBUILT AND CERTIFIED AIRCRAFT

Fly Faster and Use Less Gas - Capable of increasing your aircraft speed by 2 to 4 mph and your RPM by 20 to 50 RPM. That's if you have a fixed pitch propeller. If you have a constant speed propeller, for a given RPM and manifold pressure the propeller will be at a slightly larger pitch giving you more speed. This is accomplished by placing vortelators at certain critical locations on the propeller's most inefficient highest air drag areas. The vortelators will cause the boundary layer to stay attached to the propeller surface for a greater distance, and to keep the boundary layer thinner. The net result of these two actions is that it reduces both the profile drag and skin friction drag components of the parasite drag. The vortelator allows the air flow to stay attached to the lift strut for approximately 80% of the lift strut's chord. In the area where there is no vortelator, the air flow separates from the lift strut and becomes turbulent, at approximately 40% of the lift strut's chord, as can be seen from the pile up of oil at the 40% chord position. At the 40% chord position the lift strut is 2.01" thick, and at the 80% chord position the lift strut is 1.18" thick. That means the turbulent wake coming off the lift strut is only 59% as thick with the vortelator attached as without the vortelator attached.

259-100 Propeller Vortelator Kit for Ultralight Aircraft - The propeller vortelator kit will increase the RPM's by 20 to 50, increase airspeed by 2 to 4 MPH and also works on constant speed propellers. It is compatible with and will restore prop guard's efficiency loss.

P/N 05-01465 .....

259-200 Propeller Vortelator Kit for Homebuilt Aircraft - The propeller vortelator kit will increase the RPM's by 20 to 50, increase airspeed by 2 to 4 MPH and also works on constant speed propellers. It is compatible with and will restore prop guard's efficiency loss.

P/N 05-01466 .....

260-100 Propeller Vortelator Kit for Certified Aircraft - The propeller vortelator kit will increase the RPM's by 20 to 50, increase airspeed by 2 to 4 MPH and also works on constant speed props. It is compatible and will restore prop guard's efficiency loss. The FAA has given permission for an A&P mechanic to install this kit and does not require the installation to be performed by an approved propeller repair station.

P/N 05-01467 .....

VORTEX GENERATOR STOL KIT

There are many advantages to this vortex generator STOL kit for homebuilt aircraft: 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. 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.

Kit No.	Description of Vortex Generator Kit	No. of VG's	Part No.	Price
261-AD1	Deluxe Generic Vortex Generator STOL Kit for Homebuilt Aircraft	150	05-01776	.
261-AD2	Generic Vortex Generator STOL Kit for Homebuilt Aircraft	65	05-01780	.
261-RV1	Vortex Generator STOL Kit for the RV-3 Aircraft	65	05-01777	.
261-RV1	Vortex Generator STOL Kit for the RV-4 Aircraft			
261-RV1	Vortex Generator STOL Kit for the RV-6/6A Aircraft			
261-RV1	Vortex Generator STOL Kit for the RV-7/7A Aircraft			
261-RV1	Vortex Generator STOL Kit for the RV-8/8A Aircraft			

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