

PA-28R-201 ARROW III SPEEDS

NOTE: All airspeeds shown are expressed in Knots Indicated Airspeed (KIAS) and are based on the aircraft at maximum gross weight unless otherwise noted.

Published V-Speeds

V-Speed Symbol	Speed Value	What Is It?
V _{SO}	55 KIAS	Stall speed or minimum steady flight speed in the landing configuration (flaps fully extended).
V _{S1}	60 KIAS	Stall speed or minimum steady flight speed in the clean configuration (flaps fully retracted).
V _R	70 KIAS, 0° Flaps 60 KIAS, 25° Flaps	Rotation speed. The speed at which the nosewheel is lifted from the runway during takeoff.
V _X	72 KIAS, G. DOWN 78 KIAS, G. UP	Best Angle speed. In a climb it provides the maximum gain in altitude for the <i>distance</i> traveled forward.
V _Y	78 KIAS, G. DOWN 90 KIAS, G. UP	Best Rate speed. In a climb it provides the maximum gain in altitude per unit of <i>time</i> traveled.
V _{ENROUTE CLIMB}	104 KIAS	In a climb it provides increased forward visibility and engine cooling.
V _{BEST GLIDE}	79 KIAS, 2750 Lbs.	In a glide it provides the maximum distance traveled forward with the minimum altitude lost.
V _{FE}	103 KIAS	Full Flaps Extended speed. Maximum speed at which flaps may be fully extended.
V _A	118 KIAS, 2750 Lbs. 96 KIAS, 1865 Lbs.	Design Maneuvering speed. Maximum speed at which full, abrupt deflection of the controls can be made without causing structural damage. Reduce speed to this value when in rough air.
V _{NO}	146 KIAS	Maximum Structural Cruising speed. Do not exceed this speed except in <i>smooth</i> air.
V _{NE}	183 KIAS	Never Exceed speed. Do not exceed this speed under any circumstances.
V _{LO}	129 KIAS	Landing Gear Operating speed. Maximum speed at which the landing gear may be lowered.
V _{LE}	129 KIAS	Landing Gear Extended speed. Maximum speed at which the landing gear may be in the extended position.
V _{LR}	107 KIAS	Landing Gear Retraction speed. Maximum speed at which the landing gear may be raised.
V _{EMERG. GEAR EXTENSION}	87 KIAS	Maximum speed at which to perform the emergency landing gear extension procedure.
V _{CLOSE DOOR}	87 KIAS	Maximum speed at which to close a door in flight should it inadvertently open.
Max. Demonstrated Crosswind	17 KTS	Maximum crosswind component during which the aircraft has been landed by the manufacturer test pilot.

Airspeed Indicator Markings

Range	Arc Color	Speed Values	What Is It?
Full Flap Operating	White	55-103 KIAS	Range of speed at which flaps may be fully extended.
Normal Operating	Green	60-146 KIAS	Range of speed at which the aircraft is normally operated.
Caution	Yellow	146-183 KIAS	Range of speed at which the aircraft should be operated only in <i>smooth</i> air, and then only with caution.
Never Exceed	Red Line	183 KIAS	Never Exceed speed. Do not exceed this speed under any circumstances.

Operational Speeds

Operation	Speed Values
Normal Takeoff (0° Flaps)	1.) V _R 70 KIAS 2.) V _Y 78 KIAS, GEAR DOWN 3.) V _Y 90 KIAS, GEAR UP
Short-Field Takeoff, No Obstacle (25° Flaps)	1.) V _R 60 KIAS 2.) V _Y 78 KIAS, GEAR DOWN 3.) V _Y 90 KIAS, GEAR UP
Short-Field Takeoff, Obstacle Clearance (25° Flaps)	1.) V _R 60 KIAS 2.) V _X 72 KIAS, GEAR DOWN 3.) V _X 78 KIAS, GEAR UP 4.) V _Y 90 KIAS, GEAR UP (obstacle cleared)
Soft-Field Takeoff, No Obstacle (25° Flaps)	1.) Lift off as soon as possible 2.) V _Y 90 KIAS, GEAR UP
Soft-Field Takeoff, Obstacle Clearance (25° Flaps)	1.) Lift off as soon as possible 2.) V _X 72 KIAS, GEAR DOWN 3.) V _X 78 KIAS, GEAR UP 4.) V _Y 90 KIAS, GEAR UP (obstacle cleared)
Normal Landing (40° Flaps)	1.) 75 KIAS final approach
Short-Field Landing (40° Flaps)	1.) 75 KIAS final approach
Soft-Field Landing (40° Flaps)	1.) 75 KIAS final approach
Traffic Pattern	1.) Downwind: 100 KIAS / 0° Flaps 2.) Mid Downwind: 100 KIAS / Gear Down 3.) Abeam Touchdown: 90 KIAS / 10° Flaps 4.) Base: 80 KIAS / 25° Flaps 5.) Final: 75 KIAS / 40° Flaps

Average Cruise Speeds (based on 5000 feet Pressure Altitude, Standard OAT)

75% power, Best Economy Leaning	137 KTAS (True Airspeed)
65% power, Best Economy Leaning	127 KTAS (True Airspeed)
55% power, Best Economy Leaning	113 KTAS (True Airspeed)