

FSAE NOISE TEST ENGINE SPEEDS

Per Section 3.5.5.3.B of the Formula SAE Rules, the noise test speed "for a given engine will be the engine speed that corresponds to an average piston speed of 914.4 m/min (3,000 ft/min) for automotive or motorcycle engines, and 731.5 m/min (2,400 ft/min) for "industrial engines".... rounded to the nearest 500 rpm."

For Automotive or Motorcycle Engines

The equation is: $\text{Calculated Test Speed} = \frac{914.4 \times 1000}{2 \times \text{Stroke (mm)}} \text{ rpm}$

Model	Bore x Stroke	Displ/Cyl	Cyls	Displ.	Test rpm	
					Calculated	Rounded
Honda CBR 250 RR	48.5 x 33.7 mm	62.26 ccs	4 cyl.	249 ccs	13,567	13,500
Honda CBR 250 RR	48.0 x 34.5 mm	62.43 ccs	4 cyl	250 ccs	13,252	13,500
Yamaha FZR 400	58.1 x 40.5 mm	107.37 ccs	4 cyl	430 ccs	11,289	11,500
Kawasaki EX250	62.0 x 41.2 mm	124.39 ccs	2 cyl	249 ccs	11,097	11,000
Triumph TT600 (2003)	68.0 X 41.3 mm	149.99 ccs	4 cyl	600 ccs	11,070	11,000
Triumph Daytona 600 (Speed 4)	68.0 X 41.3 mm	149.99 ccs	4 cyl	600 ccs	11,070	11,000
Honda CB-1	55.0 x 42.0 mm	99.79 ccs	4 cyl	399 ccs	10,886	11,000
Honda NC35	55.0 x 42.0 mm	99.79 ccs	4 cyl	399 ccs	10,886	11,000
Honda CBR 600 F4	67.0 x 42.5 mm	149.80 ccs	4 cyl	599 ccs	10,758	11,000
Kawasaki Ninja ZX-6R	66.0 x 43.8 mm	149.85 ccs	4 cyl	599 ccs	10,438	10,500
Yamaha 1999 YZF-600R	65.5 x 44.5 mm	149.95 ccs	4 cyl	600 ccs	10,274	10,500
Yamaha YZF-R6	65.5 x 44.5 mm	149.95 ccs	4 cyl	600 ccs	10,274	10,500
Suzuki GSXR 600	65.5 x 44.5 mm	149.95 ccs	4 cyl	600 ccs	10,274	10500
Honda CBR 600 F2	65.0 x 45.2 mm	149.99 ccs	4 cyl	600 ccs	10,115	10,000
Honda CBR 600 F3	65.0 x 45.2 mm	149.99 ccs	4 cyl	600 ccs	10,115	10,000
Kawasaki ZX6	64.0 x 46.6 mm	149.91 ccs	4 cyl	600 ccs	9,811	10,000
Honda CBR 600 F1	63.0 x 48.0 mm	149.63 ccs	4 cyl	599 ccs	9,525	9,500
Yamaha YZF600R	62.0 x 49.6 mm	149.75 ccs	4 cyl	599 ccs	9,218	9,000
Mahle FSAE	70.9 x 51.6 mm	203.39 ccs	3 cyl	610 ccs	8,867	9,000
Honda CX500	78.0 x 52.0 mm	248.50 ccs	2 cyl	497 ccs	8,792	9,000
Kawasaki Ninja	60.0 x 52.4 mm	148.16 ccs	4 cyl	593 ccs	8,725	9,000
Yamaha FZR600	59.0 x 54.8 mm	149.80 ccs	4 cyl	599 ccs	8,343	8,500
Suzuki K6A	68.0 x 55.8 mm	202.60 ccs	3 cyl	608 ccs	8,193	8,000
Honda VT500C	71.0 x 62.0 mm	245.50 ccs	2 cyl	491 ccs	7,374	7,500
Suzuki SV650 (reduced bore)	78.5 x 62.6 mm	302.97 ccs	2 cyl	606 ccs	7,304	7,500
Yamaha WR450 (2005)	95.0 x 63.5 mm	534.07 ccs	1 cyl	534 ccs	7,200	7,000
Polaris Sportsman 600 (2000)	76.4 x 66.0 mm	302.80 ccs	2 cyl	606 ccs	6,927	7,000
Yamaha YZF450	100.0 x 68.0 mm	534.07 ccs	1 cyl	534 ccs	6,724	6,500
Honda TRX 400EX	85.0 x 70.0 mm	397.22 ccs	1 cyl	397 ccs	6,531	6,500
Husaberg 500 cc	95.0 x 70.7 mm	501.10 ccs	1 cyl	501 ccs	6,467	6,500
KTM Duke LC-4 620	101.0 x 76.0 mm	608.90 ccs	1 cyl	609 ccs	6,016	6,000
KTM 450	97.0 x 77.9 mm	575.67 ccs	1 cyl	576 ccs	5,869	6,000
Honda NX650/XR600	97.0 x 82.0 mm	605.90 ccs	1 cyl	606 ccs	5,576	5,500

For "Industrial" Engines

The equation is: $\text{Calculated Test Speed} = \frac{731.5 \times 1000}{2 \times \text{Stroke (mm)}} \text{ rpm}$

Briggs & Stratton Vanguard	75.4 x 66.0 mm	295.19 ccs	2 cyl	590 ccs	5,538	5,500
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The test speed for other engines will be calculated per the above equations.