

## FSAE NOISE TEST SPEED BY MODEL

Per Section IC3.2.4 of the Formula SAE Rules, "the maximum 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 mm	Stroke mm	Displ/Cyl. ccs	# of Cyls	Total Displ. ccs	Noise Test Speed, rpm	
						Calculated	Rounded
<b>Automotive &amp; Motorcycle Engines</b>							
Aprilia RXV 550, SXV 550, SVX 550, SX 550	80.00	55.00	276.46	2	553	8313	8500
Cannondale 400	95.00	61.00	432.38	1	432	7495	7500
Ducati Desmo 3, (Modified)	84.00	54.90	304.24	2	608	8328	8500
Honda CBR 250RR	48.50	33.70	62.26	4	249	13567	13500
Honda CBR 250RR	48.00	34.50	62.43	4	250	13252	13500
Honda CB1	55.00	42.00	99.79	4	399	10886	11000
Honda NC35	55.00	42.00	99.79	4	399	10886	11000
Honda CBR 600 F4 & CBR600 F4i (later)	67.00	42.50	149.84	4	599	10758	11000
Honda CBRR (later) & CBR 600 RR	67.00	42.50	149.84	4	599	10758	11000
Honda CBR 600 F4i (Around 2002)	66.04	43.18	147.91	4	592	10588	10500
Honda CBR 600 (RIT)	65.50	45.00	151.63	4	607	10160	10000
Honda CB 600 FW Hornet	65.00	45.20	149.99	4	600	10115	10000
Honda CBR 600 F2 & F3	65.00	45.20	149.99	4	600	10115	10000
Honda CBR F1	63.00	48.00	149.63	4	599	9525	9500
Honda CBR 600 F4i (Around 2004)	62.00	48.50	146.43	4	586	9427	9500
Honda CX500	78.00	52.00	248.48	2	497	8792	9000
Honda CBR250R	76.00	55.00	249.51	1	250	8313	8500
Honda CBR 600RR (Around 2003-2004)	58.00	57.00	150.60	4	602	8021	8000
Honda CFT 450X	101.60	61.00	494.55	1	495	7495	7500
Honda VT500C	71.00	62.00	245.47	2	491	7374	7500
Honda CRF 450 & CRF 450X	96.00	62.10	449.50	1	449	7362	7500
Honda CRF 450 (Bored & stroked)	100.00	65.00	510.51	1	511	7034	7000
Honda TRX 400EX	85.00	70.00	397.22	1	397	6531	6500
Jailing F02	94.00	85.00	589.88	1	590	5379	5500
Kawasaki EX250, EX250J	62.00	41.20	124.39	2	249	11097	11000
Kawasaki ZX-6R		42.50		4		10758	11000
Kawasaki Ninja ZX-6R	66.00	43.80	149.85	4	599	10438	10500
Kawasaki ZX6	64.00	46.60	149.91	4	600	9811	10000
Kawasaki ZX600 Ninja		52.40		4		8725	8500
Kawasaki Ninja	59.00	54.80	149.82	4	599	8343	8500
Kawasaki ZX-6 (Around 1996)	58.00	57.00	150.60	4	602	8021	8000
Kawasaki EX500	74.00	58.00	249.45	2	499	7883	8000
Kawasaki KFX 450R	96.00	62.10	449.50	1	449	7362	7500
KTM Duke 200	72.00	49.00	199.50	1	200	9331	9500
KTM 250 SX-F, SXF 250	78.00	52.30	249.91	1	250	8742	8500
KTM 450 (??-2015)	95.00	63.40	449.39	1	449	7211	7000
KTM 450 (2003-2005-??)	89.00	72.00	447.92	1	448	6350	6000
KTM 525 SX, Outlaw 525, EXC-R 530	95.00	72.00	510.35	1	510	6350	6500
KTM 525-EXC-RFS (Bored & Stroked)	100.00	77.00	604.76	1	605	5938	6000
Mahle FSAE Engine	70.80	51.50	202.75	3	608	8878	9000

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Model	Bore mm	Stroke mm	Displ/Cyl. ccs	# of Cyls	Total Displ. ccs	Noise Test Speed, rpm	
						Calculated	Rounded
Polaris Sportsman 600	76.43	66.00	302.80	2	606	6927	7000
Rotax R13	99.80	77.70	607.82	1	608	5884	6000
Rotax RJ06	100.00	77.60	609.47	1	609	5892	6000
Suzuki GSXR 600 (2001-?), GSX-R600 K6	67.00	42.50	149.84	4	599	10758	11000
Suzuki GSXR 600 (Around 1997-2000)	65.50	44.50	149.95	4	600	10274	10500
Suzuki GSX-R600 K3		45.50		4		10048	10000
Suzuki K6A	68.00	55.80	202.65	3	608	8194	8000
Suzuki GSXR 600 (Around 2005)	58.00	57.00	150.60	4	602	8021	8000
Suzuki SV650 (reduced bore)	78.50	62.60	302.97	2	606	7304	7500
Suzuki SV650 (reduced bore)	78.50	62.60	302.97	2	606	7304	7500
Suzuki LTR-450	95.50	62.80	449.84	1	450	7280	7500
Suzuki LTR-450 (Bored & stroked?)	100.00	68.80	540.36	1	540	6645	6500
SwissAuto 250	75.00	56.50	249.61	1	250	8092	8000
Triumph Daytona 600 (Speed 4), TT600	68.00	41.30	149.99	4	600	11070	11000
Yamaha FZR 400	58.10	40.50	107.37	4	429	11289	11500
Yamaha R6, R6R, YZF R6, YZF-R6R		42.50		4		10758	11000
Yamaha R6S (2007?)	65.30	43.00	144.01	4	576	10633	10500
Yamaha R6 (2003-2005?), FZ6R, YZF R6	65.50	44.50	149.95	4	600	10274	10500
Yamaha YZF-600R (Year?)	65.50	44.50	149.95	4	600	10274	10500
Yamaha YZF 600R (Year?)	62.00	49.60	149.75	4	599	9218	9000
Yamaha WR250R, YZ250F & Genesis	77.00	53.60	249.60	1	250	8530	8500
Yamaha Genesis	77.00	53.60	249.60	2	499	8530	8500
Yamaha YBR 250, XTZ 250	74.00	58.00	249.45	1	249	7883	8000
Yamaha YZF450 (ATV)	95.00	62.00	439.47	1	439	7374	7500
Yamaha WR450 & WR450F	95.00	63.40	449.39	1	449	7211	7000
Yamaha YZF450 (Bored)	99.00	63.40	488.03	1	488	7211	7000
Yamaha YZF450	95.00	63.40	449.39	1	449	7211	7000
Yamaha YZF450 (Bored & Stroked)	98.00	64.00	482.75	1	483	7144	7000
Yamaha YZF450 (Bored & Stroked)	98.00	68.00	512.92	1	513	6724	6500
Yamaha YZF450R (modified)		68.50		1		6674	6500
Yamaha WF450	100.00	70.00	549.78	1	550	6531	6500
Yamaha XT-600	95.00	84.00	595.41	1	595	5443	5500

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	75.44	66.04	295.19	2	590	5538	5500
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The test speed for other engines will be calculated per the above equations.

MJR, Last revised 9-24-15