

2007 Arctic Cat Jaguar Z1 1100 Four Stroke twin, initial stock evaluation

JD Powersports from Rochester NY brought us that powerful JD modified T660 Cat Turbo to dyno tune recently. Here is their latest acquisition for boosting, the Jaguar Z1. This is a new engine, zero miles, bone stock. Jeff and Dave plan to fit this engine with a Garrett ball bearing turbo/ intercooler/ with the same piggyback fuel/ spark controller that they expect will make his engine boost-friendly for either trail riding or lake or mountain racing.

For our DynoTech stock evaluation, here is JD's Jaguar Z1 bone stock baseline, on 87 octane gas run for 20 seconds at WOT totally heat soaked.

We have included A/F ratio numbers from two sources: mechanical data from SuperFlow airflow and fuelflow meters (A/F2) then with electronic data from our Innovate LM-1 O2 sensor (A/F1).

After 20 years of dyno testing with this equipment I have confidence in the fuel flow lb/hr of my SuperFlow fuel flow turbines, and the variation may be in the Superflow airflow meters, dented and beat up from 20 years of abuse. Are my A/F2 numbers correct? Or are my Innovate LM1 O2 sensor readings more accurate?

Either way, we can surely bank upon the dyno's BSFC numbers; 132 HP at .48 lb/hphr = 63 lb/hr or thereabouts at WOT. Similarly powerful two-strokes usually require .70 lb/hphr to be safe, which = 92 lb/hr fuel flow at WOT. If current fuel cost trends continue, it is likely that the stingy four-strokes' superior fuel economy should influence even the most ardent two-stroke advocate.

This engine from JD Powersports will be fitted soon with a turbo/ intercooler, and maybe low compression pistons. The success they achieved with high-boost T660's last season could be transferred to the Z1 1100 twin. Surely others have similar agendas. 200 HP on pump gas? 300 HP on high octane gas? There will be lots for us to learn this year. Cat hotrodders who are lamenting the passing of the 150 HP (dyno tuned) two-stroke F7s need not commit suicide just yet.

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EngSpd RPM	STPTrq Cib-ft	STPPwr CHp	BSFC Lb/hph	A/F 2 Ratio	FulA+B lb/hr	A/F1 Ratio	Air1+2 scfm	Fuel P psig	AirTmp degF	BaroP in/Hg
4500	63.6	54.5	0.478	18.22	24.8	11.1	99	43.1	61	29.0
4600	65.5	57.4	0.456	18.22	24.9	11.1	99	43.1	61	29.0
4700	68.4	61.2	0.431	18.26	25.1	11.8	100	43.1	60	29.0
4800	68.3	62.4	0.425	18.17	25.3	11.9	100	43.2	59	29.0
4900	69.5	64.8	0.436	17.51	27.1	12.3	103	43.1	58	29.0
5000	69.3	65.9	0.437	17.36	27.5	12.2	104	43.1	58	29.0
5100	69.3	67.3	0.435	17.16	27.9	12.2	105	43.1	58	29.0

5200	70.1	69.3	0.451	16.19	29.8	11.9	105	43.1	59	29.0
5300	70.2	70.8	0.447	16.04	30.2	11.7	106	43.1	59	29.0
5400	70.1	72.1	0.458	15.56	31.4	11.6	107	47.3	60	29.0
5500	70.1	73.4	0.462	15.31	32.3	11.6	108	43.8	60	29.0
5600	70.6	75.3	0.457	15.27	32.7	11.7	109	43.2	61	29.0
5700	72.1	78.1	0.448	15.01	33.3	11.7	109	43.1	60	29.0
5800	72.1	79.6	0.447	14.91	33.8	11.8	110	43.1	61	29.0
5900	73.1	82.1	0.439	14.94	34.3	11.8	112	43.1	61	29.0
6000	75.1	85.7	0.441	14.57	35.8	11.8	114	43.1	61	29.0
6100	76.1	88.3	0.439	14.75	36.9	11.8	119	43.1	61	29.0
6200	77.3	91.3	0.444	14.75	38.6	12.1	124	43.1	60	29.0
6300	78.6	94.3	0.449	14.56	40.3	12.3	128	43.1	59	29.0
6400	78.1	95.1	0.456	14.39	41.3	12.4	130	42.9	59	29.0
6500	78.1	96.6	0.453	14.28	41.7	12.4	130	42.9	60	29.0
6600	78.5	98.6	0.456	13.99	42.8	12.4	131	42.9	60	29.0
6700	78.2	99.7	0.461	13.73	43.6	12.4	131	42.9	61	29.0
6800	78.1	101.1	0.461	13.64	44.2	12.3	132	42.9	61	29.0
6900	78.2	102.7	0.466	13.39	45.5	12.3	133	42.9	61	29.0
7000	78.4	104.5	0.469	13.26	46.6	12.2	135	42.9	61	29.0
7100	79.8	107.9	0.464	13.32	47.6	12.1	138	42.9	60	29.0
7200	79.9	109.6	0.464	13.31	48.3	12.1	140	42.9	60	29.0
7300	80.3	111.7	0.463	13.26	49.1	12.1	142	42.9	61	29.0
7400	81.8	115.3	0.471	12.99	51.4	12.1	146	42.9	61	29.0
7500	81.6	116.6	0.473	12.91	52.4	12.1	148	42.7	61	29.0
7600	82.2	118.9	0.473	12.92	53.4	11.8	151	42.7	61	29.0
7700	82.3	120.6	0.479	12.72	54.9	11.7	152	42.8	61	29.0
7800	81.9	121.6	0.486	12.68	56.1	11.6	155	42.8	60	29.0
7900	82.1	123.5	0.491	12.51	57.5	11.6	157	42.8	60	29.0
8000	82.2	125.2	0.483	12.56	57.5	11.7	158	42.8	60	29.0
8100	82.2	126.8	0.479	12.58	57.6	11.7	158	42.8	61	29.0
8200	81.9	127.9	0.482	12.49	58.5	11.7	160	42.8	61	29.0
8300	81.1	128.1	0.485	12.54	58.9	11.7	161	42.8	60	29.0
8400	81.3	130.1	0.483	12.61	59.6	11.7	164	42.7	60	29.0
8500	81.3	131.5	0.484	12.57	60.3	11.7	166	42.7	61	29.0
8600	80.8	132.4	0.485	12.72	60.8	11.6	169	42.7	62	29.0
8700	79.3	131.4	0.494	12.81	61.5	11.6	172	42.7	60	29.0
8800	79.1	132.4	0.501	12.71	62.7	11.6	174	42.7	60	29.0
8900	78.1	132.4	0.503	12.72	63.2	11.6	176	42.7	59	29.0