

2008 ½ Polaris Dragon IQ 800 Pilot

Here is a 2008.5 sea level Dragon 800 brought here by Casey Mulkins from Three Seas Recreation in Mayville, N.Y.

Bone stock we ran three repeat dyno tests, averaged here as shown. Casey had three gallons of what we hoped was 93 octane gas (see DTR blog “hosed at the pump”).

Here is our baseline of three tests, each run heat soaked with coolant temp about 100 degrees F at the beginning of each test. Dyno tests were 20 seconds in duration. We tried fitting the airflow meter to the stock airbox, but the ill-fitting airbox halves and seal to carb flanges made mechanical measurement futile. Instead, we used the LM1 wideband O2 sensor fed by a ¼” tube inserted into the muffler outlet for our A/F ratio readings. Note that fuel flow maxes out at 7500 RPM, then drops as revs climb from there.

EngSpd	STPTrq	STPPwr	LAMAF1	BSFA-B	AirTmp	FulA-B	STPCor	BaroP
RPM	Cib-ft	CHp	Ratio	lb/hph	degF	lb/hr	Factor	in/Hg
5700	78.6	85.4	15.4	0.55	49	45.9	1.020	29.27
5800	80.2	88.5	15.0	0.56	49	48.3	1.020	29.27
5900	81.5	91.5	14.5	0.56	50	50.5	1.021	29.27
6000	82.4	94.2	14.0	0.59	50	54.1	1.021	29.27
6100	83.4	96.9	13.6	0.58	50	55.0	1.021	29.27
6200	84.0	99.1	13.1	0.62	50	59.9	1.021	29.27
6300	84.1	100.8	12.6	0.64	50	63.5	1.021	29.27
6400	84.0	102.3	12.4	0.66	50	65.7	1.021	29.27
6500	84.7	104.8	12.0	0.65	49	66.3	1.020	29.27
6600	84.9	106.7	11.9	0.67	49	69.4	1.020	29.27
6700	85.2	108.7	11.7	0.66	49	69.8	1.020	29.27
6800	84.4	109.2	11.6	0.68	50	72.6	1.021	29.27
6900	82.7	108.7	11.5	0.71	50	75.6	1.021	29.27
7000	83.4	111.1	11.5	0.71	50	77.3	1.021	29.27
7100	85.1	115.0	11.3	0.75	50	84.3	1.021	29.27
7200	87.8	120.3	11.0	0.77	50	89.9	1.021	29.27
7300	90.4	125.7	10.7	0.75	50	91.6	1.021	29.27
7400	90.6	127.7	10.6	0.78	50	96.9	1.021	29.27
7500	90.3	129.0	10.5	0.80	50	100.3	1.021	29.27
7600	89.3	129.2	10.4	0.79	50	100.0	1.021	29.27
7700	90.2	132.3	10.3	0.77	50	99.6	1.021	29.27
7800	92.1	136.7	10.4	0.73	51	97.4	1.022	29.27
7900	95.4	143.6	10.6	0.66	50	93.1	1.021	29.27
8000	94.9	144.6	11.1	0.62	50	88.1	1.021	29.27
8100	91.1	140.4	11.3	0.66	49	90.7	1.020	29.27

Here is the Dragon 800 fitted with a ceramic coated Starting Line Products single pipe. This is the average of two runs that repeated within ½ HP.

EngSpd	STPTrq	STPPwr	LAMAF1	BSFA-B	AirTmp	FulA-B	STPCor	BaroP
RPM	Cib-ft	CHp	Ratio	lb/hph	degF	lb/hr	Factor	in/Hg

5600	77.6	82.7	16.0	0.59	50	47.3	1.021	29.27
5700	78.6	85.3	16.0	0.60	50	49.9	1.021	29.27
5800	80.5	88.8	15.4	0.58	49	50.1	1.020	29.28
5900	81.9	92.0	14.8	0.60	49	54.2	1.020	29.27
6000	82.9	94.7	14.1	0.62	50	57.1	1.021	29.27
6100	83.7	97.3	13.6	0.62	50	59.1	1.021	29.27
6200	83.6	98.7	13.3	0.65	50	62.7	1.021	29.28
6300	83.4	100.0	12.9	0.66	49	64.5	1.020	29.27
6400	82.8	100.9	12.4	0.71	48	70.2	1.019	29.28
6500	82.9	102.6	12.2	0.69	49	69.6	1.020	29.28
6600	83.6	105.1	11.9	0.68	50	69.5	1.021	29.28
6700	84.0	107.2	11.8	0.69	49	72.0	1.020	29.28
6800	83.6	108.3	11.8	0.68	49	72.0	1.020	29.28
6900	84.6	111.1	11.8	0.71	49	76.9	1.020	29.28
7000	87.6	116.8	11.6	0.68	50	77.5	1.021	29.28
7100	89.2	120.5	11.3	0.69	50	80.9	1.021	29.28
7200	91.5	125.4	11.0	0.71	50	86.9	1.021	29.28
7300	92.2	128.2	10.9	0.71	50	89.1	1.021	29.28
7400	94.0	132.4	10.6	0.73	51	93.7	1.022	29.28
7500	93.0	132.9	10.5	0.76	49	99.3	1.020	29.28
7600	92.4	133.8	10.3	0.76	49	99.5	1.020	29.28
7700	92.7	136.0	10.3	0.74	49	98.4	1.020	29.28
7800	93.6	138.9	10.3	0.72	49	98.2	1.020	29.28
7900	98.4	147.9	10.7	0.64	49	92.4	1.020	29.28
8000	98.8	150.5	11.2	0.62	49	90.8	1.020	29.27
8100	97.4	150.2	11.3	0.62	50	90.5	1.021	29.27
8200	94.9	148.2	11.4	0.61	50	88.4	1.021	29.27
8300	92.6	146.3	11.5	0.62	49	88.4	1.020	29.27
8400	90.4	144.5	11.5	0.63	49	88.7	1.020	29.27

Here is the Dragon 800 fitted with a stock pipe modified by Bikeman (BMP). This made great HP from low revs to peak and beyond, even better than the infamous Firecat BMP pipe mods we've tested here. This may be the best \$200 bargain in snowmobile land, even better than the aftermarket Cat F1000 Y pipes.

EngSpd	STPTrq	STPPwr	LAMAF1	BSFA-B	AirTmp	FulA-B	STPCor	BaroP
RPM	Clb-ft	CHp	Ratio	lb/hph	degF	lb/hr	Factor	in/Hg
5600	78.8	84.1	15.8	0.61	49	49.8	1.020	29.27
5700	80.6	87.5	15.7	0.60	49	50.9	1.020	29.27
5800	82.2	90.8	15.2	0.58	49	51.7	1.020	29.27
5900	82.6	92.8	14.8	0.59	49	53.4	1.020	29.27
6000	83.7	95.7	14.3	0.58	50	54.5	1.021	29.27
6100	84.6	98.2	13.9	0.61	49	58.5	1.020	29.27
6200	85.5	100.9	13.2	0.64	50	63.3	1.021	29.27
6300	84.8	101.7	12.9	0.67	49	66.7	1.020	29.27
6400	86.0	104.8	12.4	0.66	49	68.0	1.020	29.27
6500	86.1	106.6	12.2	0.66	49	69.1	1.020	29.27
6600	86.3	108.5	12.0	0.66	49	69.9	1.020	29.27
6700	87.1	111.2	11.9	0.67	50	72.5	1.021	29.27
6800	86.9	112.6	11.9	0.67	50	73.4	1.021	29.27

6900	85.3	112.1	11.9	0.73	49	80.0	1.020	29.27
7000	85.5	114.0	11.9	0.73	49	81.4	1.020	29.27
7100	86.8	117.4	11.7	0.74	49	84.8	1.020	29.27
7200	87.9	120.5	11.5	0.72	49	84.6	1.020	29.27
7300	91.3	127.0	11.3	0.73	49	90.5	1.020	29.27
7400	95.3	134.3	10.8	0.71	49	92.7	1.020	29.27
7500	96.5	137.9	10.6	0.72	49	96.8	1.020	29.27
7600	95.5	138.2	10.5	0.75	49	101.0	1.020	29.27
7700	96.4	141.4	10.4	0.72	49	98.9	1.020	29.27
7800	101.1	150.2	10.6	0.66	49	96.7	1.020	29.27
7900	102.5	154.1	11.0	0.61	49	91.5	1.020	29.27
8000	102.2	155.6	11.3	0.61	49	92.2	1.020	29.27
8100	101.1	156.0	11.4	0.60	48	91.7	1.019	29.27
8200	100.8	157.3	11.5	0.58	50	89.0	1.021	29.27
8300	99.6	157.5	11.8	0.56	50	85.7	1.021	29.27
8400	97.5	155.9	12.0	0.56	49	85.3	1.020	29.27

Note that since the fuel flow declines after 75-7600, and both SLP and BMP singles create higher HP at higher revs, BSFC drops to what we might consider the lean zone for pump gas. But that 7500 range fat fuel is annoying, and that shows up as a dip in the HP curve with all three pipes. Leaner mixture there would help midrange torque and HP.

Casey had wired in a new Boondocker controller before coming here, and we tried to lean out the fat 7500 range and fatten up the lean 8300 range (normally easy to accomplish with the Boondocker) but for some reason this Boondocker wouldn't work for us. But for safe trailriding with either the SLP single or the BMP modded stock pipe, a good operating Boondocker would be a wise addition.

Casey called from Chautauqua Lake near Mayville just now, and was happy to report that he made several mile long runs on the lake rocket-fast with the BMP pipe at with enough clutch weight to keep it at 8100. All is fine and fast on the gas we ran at the dyno.

But this is surely never-never land for the mystery gas you buy at the pump. If I had one of these I would Boondocker more fuel at high revs, pull some out at 7500 and this should be fine on 87 octane. Casey has his own 800 SnowChecked and we'll surely have an opportunity to test his sled with a working Boondocker before the snow flies next winter.

Stock 2008 1/2 Polaris Dragon 800 IQ Pilot with stock muffler

Blue stock pipe, Black SLP single pipe, Red BMP modified stock single pipe

