

D&D POWERSPORTS' SIDEWINDER/ THUNDERCAT UPGRADES

D&D provided this new Yamaha Sidewinder for the AmSnow/ DTR Shootout. I suggested to Dale Roes that when they brought the stocker to DTR for dyno certification, he bring along whatever bolt-on, plug-in stuff he had developed so we could test it on the same bone stock sled.

They had first developed a means to modify the stock muffler to increase airflow and HP% way more than the slight dB increase%. Next, their work-of-art Tec2 stainless steel muffler includes "divorced" wastegate and allows even higher airflow and HP, but may require added fuel for best performance. D&D adds whatever extra fuel necessary for proper A/F ratio with a proprietary Dynojet PCV fuel tuner complete [don't look for this on EBay or Amazon--it's been engineered in partnership by D&D and DJ so D&D will provide all units, mapping, and tech support] with OEM plug-in connectors. The custom Sidewinder/ TCat PCV also can be used with DJ Wideband 2 A/F meter (highly recommended!) and a Pod 300 so you can monitor A/F, RPM, real boost pressure, injector duty cycle and datalog that information.

Boost can be adjusted by a D&D "Dial-a-boost", up to 12.5 psi on the stock ECU. Beyond that boost pressure, a D&D reflash of the stock ECU is necessary (obviously negating the five year factory warranty).

All of the above mods on this stock Sidewinder follow:

Stock 2017 Yamaha Sidewinder

EngSpd RPM	STPPwr CHp	STPTRq Clb-ft	BSFA_B lb/hph	FuIA_B lbs/hr	LamAF1 Ratio	LM1Air SCFM	BoostP psig	FulPrA psig
6450	164.9	134.3	0.447	71.2	12.3	187.0	9.1	54.5
6500	165.8	134.0	0.454	72.7	12.2	185.0	9.0	54.5
6550	166.3	133.3	0.451	72.4	12.3	187.0	9.1	54.5
6600	166.7	132.6	0.450	72.4	12.2	185.0	9.1	54.5
6650	167.2	132.0	0.452	73.0	12.1	182.0	9.1	54.5
6700	167.7	131.5	0.457	74.0	12.1	180.0	9.1	54.6
6750	168.5	131.1	0.459	74.6	12.0	179.0	9.2	54.6
6800	169.3	130.8	0.458	75.0	12.0	180.0	9.2	54.6
6850	170.1	130.4	0.457	75.0	12.0	180.0	9.2	54.6
6900	170.8	130.0	0.454	75.0	12.0	180.0	9.2	54.7
6950	171.6	129.7	0.452	75.0	12.0	180.0	9.3	54.7
7000	172.4	129.3	0.451	75.1	12.0	179.0	9.3	54.7
7050	173.2	129.0	0.448	75.0	12.0	179.0	9.3	54.7
7100	173.9	128.6	0.444	74.6	12.0	180.0	9.2	54.6
7150	174.4	128.1	0.441	74.3	11.9	180.0	9.2	54.6
7200	175.0	127.7	0.440	74.5	11.9	179.0	9.1	54.6
7250	175.7	127.3	0.441	74.9	11.9	177.0	9.1	54.5
7300	176.2	126.8	0.443	75.5	11.9	176.0	9.1	54.5
7350	176.9	126.4	0.446	76.2	11.9	176.0	9.1	54.5
7400	177.7	126.1	0.447	76.8	12.0	177.0	9.2	54.6

7450	178.9	126.1	0.450	77.8	12.0	180.0	9.3	54.7
7500	180.5	126.4	0.454	79.2	12.0	184.0	9.4	54.9
7550	182.5	126.9	0.457	80.5	12.1	187.0	9.6	55.0
7600	185.1	127.9	0.458	81.9	12.0	189.0	9.7	55.1
7650	187.0	128.4	0.456	82.4	12.0	191.0	9.7	55.1
7700	188.4	128.5	0.454	82.7	12.0	192.0	9.7	55.0
7750	189.0	128.1	0.456	83.2	12.0	193.0	9.6	54.9
7800	189.2	127.4	0.457	83.5	12.0	194.0	9.5	54.9
7850	189.4	126.7	0.459	83.9	11.9	195.0	9.5	54.8
7900	189.7	126.1	0.462	84.6	11.9	197.0	9.5	54.8
7950	189.9	125.5	0.467	85.6	11.9	198.0	9.5	54.8
8000	190.5	125.0	0.471	86.6	11.9	200.0	9.6	54.8
8050	191.6	125.0	0.472	87.3	11.9	200.0	9.7	54.9
8100	193.0	125.1	0.470	87.6	11.9	202.0	9.7	55.0
8150	194.5	125.3	0.469	88.0	11.9	205.0	9.8	55.1
8200	196.0	125.5	0.466	88.2	11.9	209.0	9.8	55.1
8250	197.3	125.6	0.463	88.3	11.9	212.0	9.8	55.1
8300	198.4	125.6	0.460	88.2	11.9	216.0	9.8	55.1
8350	199.3	125.4	0.459	88.3	12.0	218.0	9.8	55.1
8400	200.2	125.2	0.458	88.4	12.0	219.0	9.8	55.0
8450	201.0	124.9	0.457	88.7	12.1	221.0	9.8	55.0
8500	201.7	124.6	0.458	89.1	12.2	223.0	9.8	55.1
8550	202.7	124.5	0.458	89.6	12.3	222.0	9.9	55.2
8600	203.4	124.2	0.457	89.8	12.3	222.0	9.9	55.2
8650	204.0	123.9	0.457	90.0	12.2	222.0	10.0	55.3
8700	204.4	123.4	0.456	90.0	12.2	223.0	10.0	55.3
8750	204.9	123.0	0.455	90.0	12.2	223.0	10.1	55.3
8800	204.7	122.2	0.456	90.0	12.2	224.0	10.1	55.3
8850	204.4	121.3	0.460	90.7	12.2	225.0	10.1	55.4
8900	204.2	120.5	0.463	91.3	12.1	225.0	10.2	55.4
8950	203.5	119.4	0.465	91.2	12.1	227.0	10.2	55.5
9000	202.2	118.0	0.463	90.2	12.1	227.0	10.3	55.5
9050	200.5	116.4	0.458	88.7	12.2	228.0	10.3	55.6
9100	199.2	115.0	0.452	86.9	12.4	229.0	10.3	55.6
9150	196.3	112.7	0.444	84.1	12.7	229.0	10.3	55.7
9200	190.0	108.5	0.438	80.1	13.2	229.0	10.2	55.7

Add modified stock muffler, all else stock

EngSpd RPM	STPPwr CHp	STPTRq Clb-ft	BSFA_B lb/hph	FulA_B lbs/hr	LamAF1 Ratio	LM1Air SCFM	BoostP psig	FulPrA psig
6500	176.4	142.6	0.448	76.3	12.67	213	10.1	55.5
6550	177.4	142.3	0.450	77.2	12.60	215	10.1	55.5
6600	178.0	141.6	0.454	78.0	12.52	216	10.2	55.6
6650	178.9	141.3	0.454	78.5	12.49	216	10.2	55.6
6700	179.9	141.0	0.452	78.6	12.48	216	10.3	55.6
6750	180.9	140.8	0.451	78.8	12.47	217	10.3	55.6
6800	182.1	140.6	0.449	79.1	12.46	217	10.4	55.7

6850	183.2	140.5	0.450	79.6	12.45	219	10.4	55.7
6900	184.4	140.4	0.450	80.2	12.43	220	10.4	55.8
6950	185.6	140.3	0.449	80.5	12.42	221	10.5	55.8
7000	186.8	140.2	0.447	80.6	12.41	221	10.5	55.8
7050	187.9	140.0	0.443	80.4	12.40	220	10.5	55.8
7100	188.8	139.6	0.439	80.0	12.38	219	10.4	55.7
7150	189.3	139.0	0.436	79.8	12.36	218	10.2	55.6
7200	189.5	138.2	0.435	79.7	12.35	217	10.1	55.4
7250	189.6	137.4	0.434	79.5	12.35	217	10.0	55.3
7300	189.1	136.1	0.435	79.5	12.38	217	9.9	55.2
7350	189.2	135.2	0.437	79.8	12.41	219	9.8	55.2
7400	189.7	134.6	0.441	80.8	12.43	222	9.8	55.2
7450	190.6	134.4	0.443	81.5	12.43	223	9.8	55.2
7500	191.3	134.0	0.445	82.3	12.41	225	9.8	55.2
7550	192.1	133.6	0.447	82.9	12.39	226	9.8	55.2
7600	192.9	133.3	0.448	83.4	12.36	227	9.8	55.2
7650	193.7	133.0	0.450	84.1	12.34	229	9.9	55.2
7700	194.6	132.7	0.451	84.8	12.31	230	9.9	55.2
7750	195.5	132.5	0.452	85.4	12.27	231	9.9	55.2
7800	196.4	132.3	0.452	85.7	12.23	231	9.8	55.2
7850	197.2	131.9	0.453	86.3	12.20	232	9.8	55.2
7900	198.0	131.6	0.454	86.8	12.17	233	9.8	55.2
7950	198.6	131.2	0.455	87.3	12.13	234	9.8	55.1
8000	199.5	130.9	0.455	87.6	12.12	234	9.8	55.1
8050	200.3	130.7	0.455	88.0	12.14	236	9.8	55.1
8100	201.4	130.6	0.454	88.2	12.17	237	9.8	55.1
8150	202.4	130.5	0.452	88.4	12.21	238	9.9	55.1
8200	203.5	130.4	0.451	88.6	12.24	239	9.9	55.2
8250	204.7	130.3	0.451	89.1	12.29	242	10.0	55.2
8300	206.0	130.4	0.450	89.5	12.35	244	10.0	55.3
8350	207.3	130.4	0.448	89.6	12.43	246	10.0	55.3
8400	208.7	130.5	0.445	89.5	12.51	247	10.0	55.4
8450	209.9	130.4	0.442	89.5	12.62	249	10.1	55.4
8500	211.1	130.4	0.438	89.3	12.69	250	10.1	55.4
8550	212.4	130.5	0.432	88.6	12.73	249	10.2	55.5
8600	213.5	130.4	0.429	88.3	12.74	248	10.2	55.5
8650	214.2	130.1	0.429	88.7	12.74	249	10.2	55.5
8700	214.7	129.6	0.431	89.4	12.73	251	10.2	55.5
8750	215.2	129.2	0.433	90.0	12.71	252	10.2	55.5
8800	215.3	128.5	0.436	90.5	12.69	253	10.3	55.5
8850	215.1	127.7	0.438	91.0	12.65	254	10.3	55.5
8900	215.0	126.9	0.441	91.5	12.63	255	10.3	55.5
8950	214.3	125.8	0.444	91.8	12.64	256	10.3	55.6
9000	212.5	124.0	0.444	91.0	12.79	257	10.4	55.6
9050	210.7	122.3	0.438	89.0	13.02	256	10.4	55.7
9100	208.7	120.4	0.430	86.5	13.33	254	10.5	55.8
9150	205.7	118.1	0.423	83.9	13.69	254	10.5	55.9
9200	202.0	115.3	0.421	82.1	14.04	254	10.6	56.0

Tec2 stainless muffler with fuel added with D&D PCV

EngSpd RPM	STPPwr CHp	STPTrq Clb-ft	BSFA_B lb/hph	FuIA_B lbs/hr	LamAF1 Ratio	LM1Air SCFM	BoostP psig	FuIPrA psig
7000	186.5	139.9	0.520	93.4	11.30	234.0	10.2	55.3
7050	187.3	139.5	0.517	93.1	11.23	232.0	9.9	55.1
7100	186.4	137.9	0.516	92.5	11.19	230.0	9.7	54.9
7150	185.2	136.0	0.516	92.0	11.18	228.0	9.6	54.7
7200	184.9	134.8	0.516	91.7	11.17	227.0	9.5	54.7
7250	185.0	134.0	0.515	91.7	11.19	228.0	9.5	54.6
7300	185.6	133.5	0.513	91.5	11.24	228.0	9.5	54.6
7350	186.4	133.2	0.508	91.0	11.33	229.0	9.5	54.6
7400	187.7	133.3	0.500	90.3	11.50	230.0	9.6	54.7
7450	189.7	133.8	0.495	90.4	11.56	232.0	9.6	54.8
7500	191.8	134.3	0.492	90.7	11.56	233.0	9.6	54.9
7550	193.5	134.6	0.490	91.3	11.56	234.0	9.6	54.9
7600	195.0	134.8	0.492	92.2	11.55	236.0	9.7	55.0
7650	196.3	134.8	0.493	93.1	11.54	238.0	9.8	55.0
7700	197.5	134.7	0.494	93.8	11.50	239.0	9.8	55.1
7750	198.5	134.5	0.494	94.4	11.45	240.0	9.9	55.1
7800	199.6	134.4	0.496	95.1	11.44	241.0	9.9	55.1
7850	200.7	134.3	0.501	96.6	11.43	245.0	9.9	55.1
7900	201.8	134.1	0.505	97.9	11.42	248.0	10.0	55.1
7950	203.0	134.1	0.507	99.0	11.41	251.0	10.0	55.2
8000	204.2	134.1	0.506	99.3	11.41	251.0	10.0	55.2
8050	205.6	134.2	0.502	99.3	11.44	252.0	10.1	55.3
8100	207.2	134.3	0.500	99.7	11.46	253.0	10.1	55.3
8150	208.7	134.5	0.500	100.3	11.47	255.0	10.2	55.3
8200	210.3	134.7	0.498	100.7	11.49	257.0	10.2	55.3
8250	211.9	134.9	0.495	100.8	11.53	258.0	10.3	55.4
8300	213.5	135.1	0.494	101.3	11.63	261.0	10.3	55.4
8350	215.2	135.4	0.493	102.0	11.71	265.0	10.4	55.5
8400	216.8	135.6	0.489	101.9	11.76	266.0	10.4	55.5
8450	218.4	135.7	0.490	102.8	11.82	270.0	10.4	55.5
8500	219.7	135.7	0.495	104.4	11.87	275.0	10.5	55.5
8550	220.8	135.7	0.496	105.3	11.90	278.0	10.5	55.6
8600	221.5	135.3	0.495	105.3	11.89	278.0	10.5	55.6
8650	222.2	134.9	0.490	104.7	11.87	276.0	10.5	55.6
8700	222.8	134.5	0.486	104.0	11.87	274.0	10.5	55.6
8750	223.3	134.1	0.483	103.6	11.86	273.0	10.6	55.6
8800	223.5	133.4	0.482	103.6	11.85	272.0	10.6	55.6
8850	223.1	132.4	0.485	104.0	11.82	273.0	10.6	55.6
8900	222.8	131.5	0.488	104.4	11.80	273.0	10.6	55.7
8950	222.1	130.4	0.491	104.7	11.82	275.0	10.7	55.7
9000	221.2	129.1	0.492	104.6	11.92	276.0	10.8	55.8
9050	220.1	127.7	0.487	102.9	12.14	277.0	10.9	56.0
9100	219.5	126.7	0.475	100.0	12.47	277.0	11.0	56.1
9150	219.2	125.8	0.459	96.7	12.82	275.0	11.1	56.3

9200 217.8 124.3 0.439 91.8 13.14 268.0 11.3 56.4
Tec2 muffler, PCV fuel added, Dial-a-boost up to 12.5psi

EngSpd RPM	STPPwr CHp	STPTRq Clb-ft	BSFA_B lb/hph	FuLA_B lbs/hr	LamAF1 Ratio	LM1Air SCFM	BoostP psig	FulPrA psig
7000	198.5	148.9	0.354	67.4	13.6	205.0	11.4	56.7
7050	201.1	149.8	0.349	67.2	13.5	202.0	11.5	56.8
7100	202.9	150.1	0.350	68.1	13.3	203.0	11.5	56.8
7150	204.9	150.5	0.353	69.4	13.2	204.0	11.7	56.9
7200	206.9	150.9	0.355	70.4	13.1	205.0	11.7	57.0
7250	208.8	151.3	0.359	71.9	13.0	208.0	11.8	57.0
7300	210.7	151.6	0.364	73.6	13.0	213.0	11.8	57.0
7350	212.5	151.8	0.366	74.6	12.9	214.0	11.9	57.1
7400	214.1	151.9	0.368	75.5	12.8	216.0	11.9	57.1
7450	215.5	151.9	0.369	76.2	12.8	217.0	11.9	57.1
7500	216.9	151.9	0.370	77.0	12.8	219.0	12.0	57.2
7550	218.1	151.7	0.370	77.4	12.7	219.0	12.0	57.2
7600	219.3	151.6	0.373	78.4	12.7	221.0	12.0	57.2
7650	220.4	151.3	0.378	79.8	12.6	225.0	12.1	57.2
7700	221.6	151.1	0.382	81.2	12.6	229.0	12.1	57.3
7750	222.8	151.0	0.385	82.3	12.6	232.0	12.1	57.4
7800	223.9	150.8	0.385	82.7	12.6	233.0	12.1	57.4
7850	224.8	150.4	0.384	82.8	12.6	233.0	12.1	57.4
7900	225.9	150.2	0.383	82.9	12.6	233.0	12.1	57.4
7950	226.9	149.9	0.382	83.1	12.6	234.0	12.2	57.4
8000	228.1	149.8	0.384	83.9	12.6	236.0	12.2	57.5
8050	229.3	149.6	0.386	84.9	12.6	238.0	12.3	57.5
8100	230.6	149.6	0.390	86.2	12.6	242.0	12.3	57.5
8150	232.0	149.5	0.394	87.6	12.6	245.0	12.4	57.5
8200	233.4	149.5	0.397	88.8	12.5	248.0	12.4	57.6
8250	234.7	149.4	0.399	89.8	12.5	251.0	12.4	57.6
8300	236.0	149.3	0.404	91.4	12.5	255.0	12.4	57.6
8350	237.3	149.2	0.408	92.8	12.4	257.0	12.5	57.6
8400	238.5	149.1	0.411	93.9	12.4	259.0	12.5	57.6
8450	239.9	149.1	0.411	94.5	12.3	259.0	12.5	57.7
8500	241.0	148.9	0.412	95.1	12.3	262.0	12.5	57.7
8550	242.0	148.6	0.414	95.9	12.4	265.0	12.6	57.7
8600	242.9	148.3	0.415	96.6	12.3	266.0	12.6	57.7
8650	243.6	147.9	0.416	97.1	12.3	266.0	12.6	57.7
8700	243.7	147.1	0.420	98.0	12.3	268.0	12.6	57.7
8750	244.0	146.5	0.422	98.5	12.3	270.0	12.6	57.7
8800	244.3	145.8	0.424	99.3	12.3	271.0	12.6	57.7
8850	244.4	145.1	0.429	100.4	12.2	274.0	12.7	57.7
8900	244.2	144.1	0.430	100.6	12.2	274.0	12.7	57.7
8950	243.6	143.0	0.433	101.0	12.1	274.0	12.7	57.7
9000	242.8	141.7	0.438	101.8	12.1	275.0	12.8	57.8
9050	241.8	140.3	0.441	102.2	12.2	278.0	12.9	57.9
9100	241.0	139.1	0.441	101.8	12.3	280.0	13.0	58.0
9150	239.4	137.4	0.440	100.7	12.5	280.0	13.1	58.1

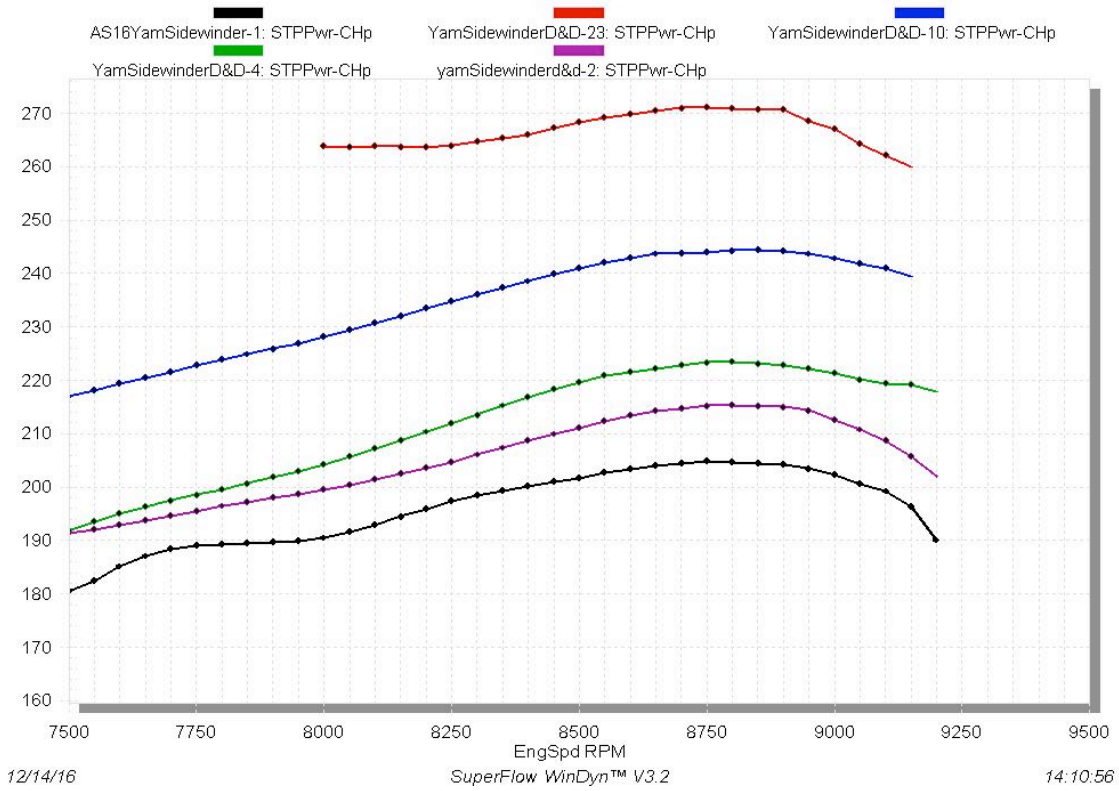
Tec2 muffler, PCV fuel tuner, Dial-a-boost, D&D ECU reflash

EngSpd RPM	STPPwr CHp	STPTrq Clb-ft	BSFA_B lb/hph	FuIA_B lbs/hr	LamAF1 Ratio	LM1Air SCFM	BoostP psig	FuIPrA psig
8000	263.8	173.2	0.467	117.7	11.5	303.0	16.0	60.7
8050	263.6	172.0	0.469	118.1	11.4	302.0	16.0	60.7
8100	263.9	171.1	0.470	118.6	11.4	302.0	16.0	60.7
8150	263.7	169.9	0.474	119.4	11.3	303.0	16.0	60.6
8200	263.6	168.8	0.477	120.2	11.4	306.0	15.9	60.6
8250	263.9	168.0	0.477	120.3	11.4	306.0	15.9	60.5
8300	264.7	167.5	0.476	120.3	11.4	307.0	15.9	60.5
8350	265.3	166.8	0.473	119.9	11.4	306.0	15.9	60.5
8400	266.0	166.3	0.469	119.3	11.5	307.0	15.9	60.6
8450	267.2	166.1	0.466	118.8	11.6	310.0	15.9	60.6
8500	268.3	165.8	0.464	118.9	11.7	312.0	15.9	60.6
8550	269.2	165.4	0.465	119.6	11.6	312.0	16.0	60.5
8600	269.9	164.8	0.466	120.0	11.6	313.0	16.0	60.5
8650	270.4	164.2	0.466	120.3	11.7	314.0	16.0	60.5
8700	271.0	163.6	0.465	120.4	11.7	315.0	16.0	60.5
8750	271.1	162.7	0.465	120.2	11.7	316.0	15.9	60.5
8800	270.9	161.7	0.467	120.7	11.7	317.0	15.9	60.5
8850	270.7	160.7	0.471	121.8	11.7	320.0	15.9	60.5
8900	270.7	159.7	0.476	122.9	11.7	322.0	15.9	60.5
8950	268.5	157.6	0.489	125.2	11.5	322.0	16.0	60.5
9000	267.0	155.8	0.497	126.7	11.4	322.0	16.0	60.5
9050	264.2	153.3	0.506	127.6	11.3	323.0	16.0	60.5
9100	262.2	151.3	0.510	127.6	11.3	323.0	16.0	60.5
9150	259.9	149.2	0.515	127.6	11.3	323.0	16.1	60.5

Note that all of this test data was done on 91.8 R+M/2 octane 3% ethanol pump gas as tested on the DTR Zeltex 101c octane tester! Not one click of deto, especially considering that the stock timing is severely retarded at high revs. Also note that while not shown here, the 271hp level taxes the stock fuel pump capacity--there is only 21 lb/hr of bypassed fuel at 60psi fuel pressure and 120+ lb/hr fuel flow (the higher the fuel pressure, the lower the pump output in lb/hr). So practical limitations suggest that 250hp might be max safe in frigid sub-zero winter temps for the stock fuel system. But 271hp was dandy for the AmSnow/DTR Shootout in Inlet, NY, as the photo of D&D's mad driver Dylan Roes' brutal holeshot indicates!

Yamaha Sidewinder with D&D bolt-ons and tuning

Black stock, Purple mod stock muffler, Green Tec2 muffler PCV, Blue Tec2 PCV dial-a-boost, Red same as blue + reflash







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