

SkiDoo Summit Turbo w/ Hot Rod Sled Shop Torque Link reflashes

Branko Dickhut, owner of HotRodSledShop.com in Honesdale, PA brought his Summit Turbo and Polaris Boost to DTR to demonstrate the Torque Link tunes he's developed for both pump gas and high octane operation. Initial baseline and early stage testing on both sleds was done with 90.8 R+M/2 octane 3% ethanol fuel as indicated by our Zeltex 101C octane tester. As boost was ramped up on the Summit Turbo beyond stage 2, Sunoco Cyclone 17 race fuel was added to bring the pump gas octane up first to 100, and then straight for the highest boost setting. Playing it safe is wise.

The baseline HP of the Summit Turbo was 165—with just enough boost to match the NA 850 Etec at our 1000 ft elevation. That boost level is said to climb as altitude is gained to maintain this HP level regardless of location.

Branko suggested that the Stage 2 tune approximated the new Etec Turbo R calibration, which closely matches the stock Polaris Boost at 1000' (HRSS Boost tuning will be posted on DTR next).

Here is our SuperFlow engine dyno test data of the stock and five stage tunes. Note that the fuel flow is 50% of actual, since we failed to pick up the flow of the throttle body supplemental injectors. Banko suggests that on boost at WOT, fuel flow is 50/50 throttle body and Etec. So multiply both BSFC and fuel flow x 2.

STOCK

EngSpd RPM	STPPwr CHp	STPTrq Clb-ft	BSFA_B lb/hph	FulA_B lbs/hr	FulPrA psig	AFRWB1 Ratio	BoostP psig	STPCor Factor
6750	138.8	108.0	0.406	56.3	48.4	13.21	0.9	1.003
6800	140.0	108.1	0.405	56.6	48.4	13.18	0.9	1.002
6850	141.3	108.4	0.404	56.9	48.4	13.16	0.8	1.002
6900	143.0	108.9	0.404	57.5	48.4	13.16	0.8	1.002
6950	144.9	109.5	0.404	58.4	48.3	13.17	0.8	1.002
7000	146.8	110.2	0.404	59.1	48.3	13.18	0.8	1.002
7050	148.9	110.9	0.402	59.7	48.2	13.18	0.8	1.002
7100	150.9	111.6	0.401	60.2	48.2	13.17	0.8	1.002
7150	153.0	112.4	0.396	60.5	48.2	13.17	0.8	1.002
7200	155.0	113.1	0.391	60.5	48.1	13.16	0.8	1.002
7250	157.3	114.0	0.386	60.6	48.1	13.16	0.8	1.002
7300	159.1	114.5	0.383	60.7	48.1	13.15	0.8	1.002
7350	160.8	114.9	0.379	60.7	48.1	13.15	0.8	1.002
7400	162.0	115.0	0.375	60.6	48.1	13.16	0.8	1.002
7450	163.1	115.0	0.371	60.3	48.2	13.18	0.8	1.002
7500	164.0	114.9	0.367	60.1	48.2	13.22	0.8	1.002
7550	164.7	114.6	0.362	59.5	48.3	13.28	0.7	1.002
7600	165.2	114.2	0.359	59.2	48.3	13.34	0.7	1.002
7650	165.3	113.5	0.359	59.2	48.2	13.41	0.7	1.002
7700	165.0	112.5	0.361	59.4	48.1	13.47	0.7	1.002
7750	163.6	110.9	0.367	59.9	48.1	13.55	0.7	1.002

7800	161.7	108.9	0.373	60.2	48.1	13.62	0.7	1.002
7850	158.5	106.1	0.382	60.4	48.1	13.69	0.7	1.002
7900	155.2	103.2	0.391	60.5	48.1	13.75	0.7	1.002
7950	149.9	99.0	0.407	60.8	48.1	13.81	0.7	1.002
8000	146.7	96.3	0.416	60.9	48.1	13.84	0.8	1.002
8050	142.6	93.0	0.413	58.6	48.1	13.89	0.8	1.002

STAGE 1

EngSpd RPM	STPPwr CHp	STPTRq Clb-ft	BSFA_B lb/hph	FulA_B lbs/hr	FulPrA psig	AFRWB1 Ratio	BoostP psig	STPCor Factor
6700	155.3	121.7	0.330	51.1	49.8	14.54	3.0	1.003
6750	155.0	120.6	0.331	51.1	49.9	14.47	2.9	1.003
6800	156.0	120.5	0.328	51.0	49.9	14.47	2.9	1.003
6850	157.5	120.8	0.323	50.7	49.9	14.51	3.0	1.003
6900	159.5	121.4	0.315	50.2	49.9	14.61	3.0	1.003
6950	161.7	122.2	0.308	49.6	49.8	14.69	3.0	1.003
7000	164.1	123.1	0.303	49.5	49.8	14.74	3.0	1.003
7050	166.4	123.9	0.299	49.7	49.7	14.74	2.9	1.003
7100	168.2	124.4	0.300	50.3	49.6	14.70	2.9	1.003
7150	169.9	124.8	0.301	50.9	49.5	14.66	2.9	1.003
7200	171.6	125.1	0.302	51.6	49.4	14.61	2.9	1.003
7250	173.3	125.6	0.303	52.4	49.2	14.55	2.8	1.003
7300	175.0	125.9	0.302	52.8	49.0	14.52	2.8	1.003
7350	176.7	126.2	0.300	52.8	48.9	14.49	2.8	1.003
7400	178.1	126.4	0.296	52.5	48.7	14.49	2.8	1.003
7450	179.3	126.4	0.292	52.2	48.5	14.49	2.7	1.003
7500	180.2	126.2	0.289	51.9	48.3	14.49	2.7	1.003
7550	181.1	126.0	0.286	51.7	48.1	14.50	2.7	1.003
7600	181.9	125.7	0.283	51.4	47.8	14.50	2.6	1.003
7650	182.5	125.3	0.283	51.5	47.5	14.50	2.6	1.002
7700	183.2	125.0	0.281	51.3	47.1	14.49	2.6	1.002
7750	183.8	124.5	0.278	51.0	46.9	14.49	2.6	1.002
7800	184.1	124.0	0.275	50.5	46.6	14.51	2.5	1.002
7850	184.0	123.1	0.274	50.2	46.4	14.54	2.5	1.002
7900	183.6	122.1	0.275	50.3	46.1	14.59	2.5	1.002
7950	181.9	120.2	0.277	50.2	45.9	14.70	2.5	1.002
8000	179.6	117.9	0.280	50.1	45.6	14.82	2.5	1.002
8050	176.9	115.4	0.282	49.8	45.4	14.92	2.5	1.002
8100	173.6	112.6	0.287	49.6	45.1	15.00	2.5	1.002
8150	169.2	109.0	0.293	49.5	44.8	15.02	2.6	1.002

STAGE 3

EngSpd RPM	STPPwr CHp	STPTrq Clb-ft	BSFA_B lb/hph	FulA_B lbs/hr	FulPrA psig	AFRWB1 Ratio	BoostP psig	STPCor Factor
6700	154.2	120.9	0.306	47.0	49.4	15.39	3.1	1.001
6750	153.8	119.7	0.308	47.3	49.5	15.40	2.9	1.001
6800	154.4	119.2	0.311	47.9	49.5	15.21	2.8	1.001
6850	155.3	119.1	0.313	48.6	49.5	15.07	2.9	1.001
6900	156.7	119.3	0.314	49.1	49.5	14.99	2.9	1.001
6950	158.3	119.7	0.313	49.5	49.5	14.98	2.9	1.001
7000	160.2	120.2	0.311	49.7	49.5	14.97	2.9	1.001
7050	162.8	121.3	0.310	50.4	49.5	14.97	2.9	1.001
7100	165.7	122.6	0.311	51.5	49.4	14.93	2.9	1.001
7150	168.2	123.6	0.311	52.3	49.4	14.86	2.9	1.001
7200	170.4	124.3	0.309	52.6	49.4	14.80	3.0	1.001
7250	172.3	124.8	0.306	52.7	49.4	14.74	3.1	1.001
7300	174.2	125.3	0.303	52.7	49.4	14.70	3.3	1.001
7350	176.2	125.9	0.300	52.7	49.4	14.66	3.5	1.001
7400	178.9	127.0	0.296	52.8	49.3	14.63	3.9	1.001
7450	182.8	128.9	0.294	53.6	49.3	14.65	4.3	1.001
7500	186.8	130.8	0.294	54.9	49.3	14.68	4.5	1.001
7550	190.4	132.5	0.294	55.9	49.2	14.69	4.7	1.001
7600	194.1	134.1	0.293	56.8	49.1	14.67	4.8	1.001
7650	197.7	135.7	0.291	57.4	49.0	14.61	4.9	1.001
7700	201.0	137.1	0.289	58.1	48.9	14.51	5.0	1.001
7750	203.7	138.0	0.289	58.7	48.9	14.44	5.1	1.001
7800	206.1	138.8	0.290	59.8	48.8	14.37	5.2	1.001
7850	207.9	139.1	0.292	60.7	48.8	14.34	5.3	1.001
7900	209.0	139.0	0.295	61.5	48.8	14.33	5.3	1.001
7950	209.5	138.4	0.295	61.8	48.8	14.35	5.4	1.001
8000	209.2	137.3	0.295	61.7	48.8	14.40	5.4	1.001
8050	208.1	135.8	0.297	61.8	48.8	14.43	5.4	1.001
8100	206.5	133.9	0.300	61.8	48.7	14.46	5.4	1.001
8150	203.8	131.3	0.302	61.5	48.7	14.47	5.5	1.001
8200	199.4	127.7	0.307	61.1	48.6	14.48	5.5	1.001

STAGE 4

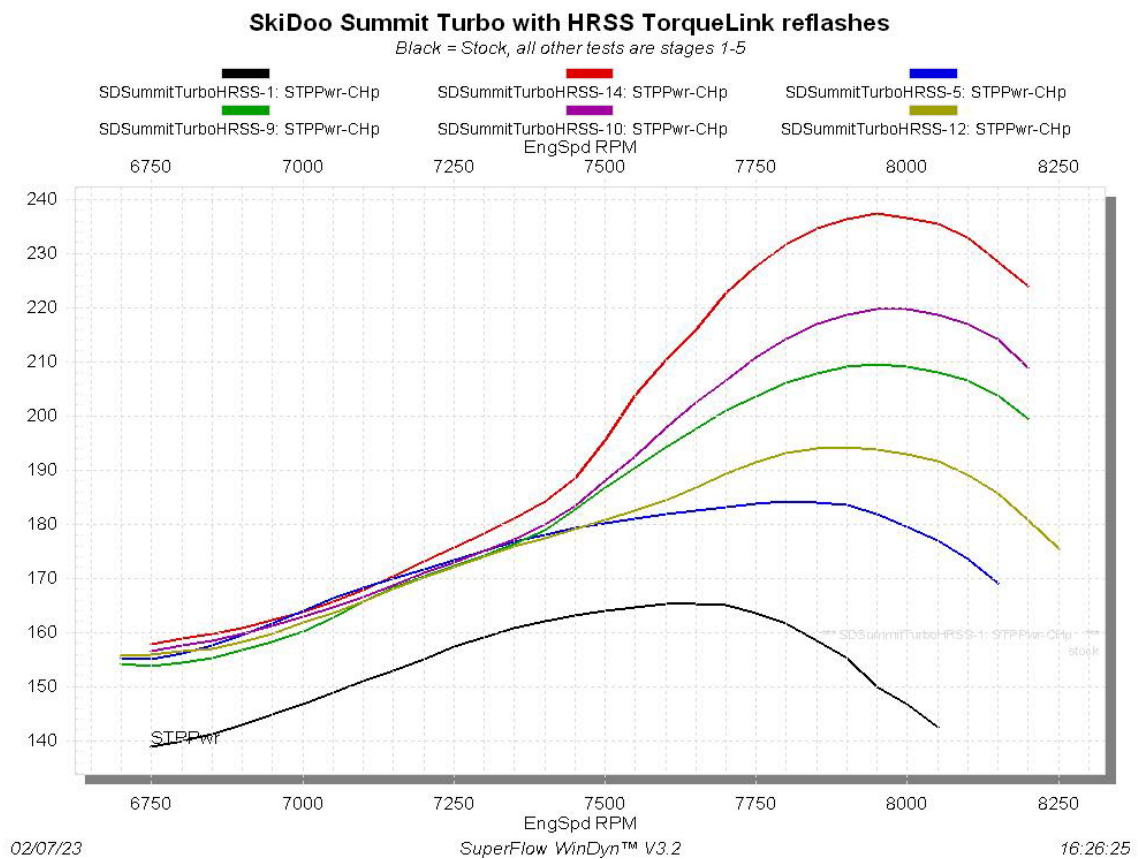
EngSpd RPM	STPPwr CHp	STPTrq Clb-ft	BSFA_B lb/hph	FulA_B lbs/hr	FulPrA psig	AFRWB1 Ratio	BoostP psig	STPCor Factor
6750	156.6	121.8	0.318	49.8	49.6	14.96	3.2	0.999
6800	157.7	121.8	0.318	50.3	49.6	14.92	3.1	0.999
6850	158.5	121.6	0.318	50.5	49.6	14.92	2.9	0.999
6900	159.8	121.6	0.318	50.9	49.7	14.99	2.9	0.999
6950	161.2	121.8	0.319	51.5	49.7	15.04	2.9	0.999
7000	162.9	122.2	0.320	52.3	49.7	15.05	2.9	0.999
7050	164.6	122.6	0.320	52.8	49.6	15.02	2.9	0.999
7100	166.6	123.2	0.320	53.4	49.6	14.95	2.9	0.999

7150	168.8	124.0	0.318	53.8	49.6	14.85	2.9	0.999
7200	170.9	124.7	0.316	54.0	49.6	14.74	3.0	0.999
7250	173.0	125.3	0.312	54.0	49.6	14.67	3.1	0.999
7300	175.1	126.0	0.308	54.1	49.6	14.63	3.4	0.999
7350	177.2	126.6	0.306	54.3	49.5	14.61	3.6	0.999
7400	180.0	127.7	0.303	54.6	49.4	14.58	4.0	0.999
7450	183.4	129.3	0.300	55.1	49.4	14.58	4.4	0.999
7500	188.0	131.7	0.298	56.2	49.2	14.58	4.8	0.999
7550	192.5	133.9	0.296	57.1	49.1	14.56	5.1	0.999
7600	197.8	136.7	0.294	58.1	49.1	14.53	5.3	0.999
7650	202.5	139.0	0.291	58.9	49.0	14.47	5.5	0.999
7700	206.6	140.9	0.287	59.3	48.9	14.40	5.7	0.999
7750	210.9	142.9	0.283	59.7	48.8	14.31	5.9	0.999
7800	214.3	144.3	0.278	59.6	48.8	14.24	6.1	0.999
7850	216.9	145.1	0.274	59.6	48.7	14.19	6.2	0.999
7900	218.7	145.4	0.271	59.4	48.7	14.18	6.3	0.999
7950	219.8	145.2	0.270	59.3	48.7	14.18	6.4	0.999
8000	219.8	144.3	0.269	59.2	48.7	14.21	6.5	0.999
8050	218.7	142.7	0.269	58.9	48.6	14.23	6.6	0.999
8100	217.0	140.7	0.270	58.6	48.5	14.25	6.6	0.999
8150	214.3	138.1	0.274	58.7	48.4	14.25	6.7	0.999
8200	208.9	133.8	0.278	58.2	48.3	14.26	6.7	0.999

STAGE 5

EngSpd	STPPwr	STPTRq	BSFA_B	FulA_B	FulPrA	AFRWB1	BoostP	STPCor
RPM	CHp	Clb-ft	lb/hph	lbs/hr	psig	Ratio	psig	Factor
6750	157.9	122.9	0.330	52.1	49.7	14.63	3.2	0.999
6800	158.8	122.7	0.327	52.0	49.7	14.62	3.0	0.999
6850	159.7	122.4	0.324	51.9	49.7	14.62	2.9	0.999
6900	160.9	122.4	0.321	51.7	49.8	14.64	2.9	0.999
6950	162.2	122.6	0.318	51.7	49.8	14.68	2.9	0.999
7000	163.9	122.9	0.315	51.7	49.8	14.70	3.0	0.999
7050	165.7	123.5	0.312	51.8	49.7	14.71	3.0	0.999
7100	167.8	124.1	0.309	52.0	49.7	14.71	3.1	0.999
7150	170.4	125.2	0.307	52.5	49.7	14.69	3.2	0.999
7200	173.1	126.3	0.306	53.0	49.7	14.65	3.4	0.999
7250	175.7	127.3	0.305	53.7	49.6	14.62	3.7	0.999
7300	178.3	128.3	0.305	54.4	49.6	14.59	4.0	0.999
7350	181.1	129.4	0.304	55.1	49.5	14.55	4.4	0.999
7400	184.2	130.7	0.302	55.8	49.4	14.51	4.7	0.999
7450	188.4	132.8	0.300	56.6	49.2	14.44	5.3	0.999
7500	195.5	136.9	0.296	58.0	49.0	14.34	6.0	0.999
7550	203.8	141.8	0.288	58.8	48.9	14.25	6.5	0.999
7600	210.4	145.4	0.280	59.0	48.8	14.17	6.8	0.999
7650	215.9	148.2	0.273	59.0	48.7	14.10	7.0	0.999
7700	222.7	151.9	0.263	58.5	48.6	13.94	7.5	0.999

7750	227.6	154.2	0.255	58.2	48.6	13.80	7.8	0.999
7800	231.6	155.9	0.251	58.1	48.5	13.69	8.1	0.999
7850	234.6	156.9	0.247	58.1	48.4	13.62	8.3	0.999
7900	236.4	157.1	0.246	58.2	48.3	13.59	8.4	0.999
7950	237.4	156.8	0.245	58.3	48.3	13.58	8.4	0.999
8000	236.5	155.3	0.245	58.0	48.3	13.60	8.5	0.999
8050	235.5	153.7	0.246	58.0	48.2	13.62	8.5	0.999
8100	232.9	151.0	0.249	58.1	48.2	13.65	8.5	0.999
8150	228.4	147.2	0.256	58.5	48.1	13.68	8.5	0.999
8200	224.0	143.5	0.251	56.2	48.1	13.68	8.6	0.999





HRSS tech Tyler and owner Branko celebrating with Blue Moon Ale.