

2004 SkiDoo Rev 600 stock evaluation and performance improvements

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Dyno testing Brian Tyler's new REV600 in September required main jet adjustment. The Mikuni Slide Rule is excellent for this, and we usually assume stock calibration is good for zero F sea level. Stock mains are 380 so we installed 330 mains. 93 octane pump gas was used. 04REV601 shows the box-stock numbers.

Since this gave us .70+ lb/hphr BSFC we elected to drop this into the mid .60's with 310 main jets (remember this was 68 degree F air!). Mid .60's lb/hphr is usually 92 octane safe for reasonable lengths of time at full throttle. Three HP was gained, but crisp jetting like this requires that high test pump gas always be used and attention paid to coolant and tuned pipe temperatures. This means limiting WOT to reasonable levels (e.g.: no multi-mile lake runs at WOT). See test 04REV602 for the results.

For Test 04REV6D2 we removed the stock reeds/ reed cages and installed Vforce Delta III's, with 310 mains left in place. Note that HP improved slightly, but fuel flow was a bit lower than we had with stock reeds. We jetted up to 320's and we actually picked up HP as shown in test 04REV603. The net result, with matching fuel flow the Vforce reeds maybe added one HP throughout the power band. We left the Vforce reeds in for the rest of the test session.

We removed the shelf from inside the airbox. Test 04REV604 showed zero performance improvement from gutting the box. Early sleds tested by DynoTech (in the '80's and '90's) almost always benefited from removing sound-deadening baffles from the airboxes. Today, manufacturers are working hard to achieve max HP with minimum noise (i.e. removing the baffles from the huge RX1 airbox resulted in *less* airflow CFM and HP) and in this case there is no HP benefit from increasing intake noise.

We removed the stock muffler from the Rev 600 and installed a nickel plated replacement cannister sent to us by Bender Racing. This was seven pounds lighter than stock and four decibels louder. The Bender can matched the stocker's HP output. Test 04REV605.

Advancing timing is easy to accomplish with the Rev600. Using the dealer's (Wyoming County H-D) computer, we tweaked the timing an extra three degrees from stock. This is a great free HP improvement, and seems reasonable for trail riders who run 92 octane gas and limit their time at WOT. If you buy "bar" gas and enjoy droning on for miles on the lakes at full throttle, do not advance your timing like this. Test 04REV606.

Bender Racing also sent us a DynoPort "Rev 600 Big Volume Single" pipe. The DynoPort pipe made identical HP with either the stock quiet muffler or with the lighter but louder Bender can. Test 04REV607. The DynoPort instructions suggest removing insulation from stock pipe and installing it on theirs. We did not do this, but expect that short blast HP peak would slide up to 8200-8300 if the DynoPort pipe were insulated—and even a bit higher if ignition timing is left stock. The 4-5 HP improvement is exceptional considering historically how excellent the SkiDoo stock singles have performed.

2004 SKI DOO REV 600 TUNEUP

04rev601 bone stock, 330 mains per Mikuni Slide Rule for 68 degree F air

EngSpd RPM	STPTrq Clb-ft	STPPwr CHp	AirTmp degF	BSFC lb/hph	Fuel B lb/hr
6600	56.9	71.5	68	0.86	59.9
6700	57.2	73.1	68	0.84	59.2
6800	58.7	76.2	68	0.79	58.6
6900	59.8	78.6	68	0.77	59.1
7000	60.6	80.8	68	0.78	62.8
7100	67.9	91.8	68	0.75	68.1
7200	67.6	92.7	68	0.76	69.5
7300	68.6	95.3	68	0.75	70.3
7400	72.3	101.9	67	0.71	71.3
7500	73.6	105.2	68	0.72	74.4
7600	73.6	106.4	68	0.73	76.7
7700	74.2	108.4	68	0.73	77.3
7800	75.4	112.1	66	0.72	77.7
7900	75.3	113.3	66	0.71	79.8
8000	76.3	116.2	66	0.71	80.4
8100	75.3	116.2	67	0.72	80.9
8200	72.1	112.5	67	0.74	83.7

04REV602 310 mains installed to lower BSFC (see text!!)

EngSpd RPM	STPTrq Clb-ft	STPPwr CHp	AirTmp degF	BSFC lb/hph	Fuel B lb/hr
7300	71.8	99.8	68	0.69	67.5
7400	73.4	103.4	68	0.68	68.4
7500	73.5	104.9	68	0.67	68.7
7600	74.5	107.8	68	0.66	69.3
7700	76.9	112.8	68	0.65	71.3
7800	76.5	113.7	68	0.64	71.4
7900	76.6	115.3	68	0.64	72.3
8000	76.9	117.2	68	0.65	74.4
8100	76.7	118.3	68	0.65	75.7
8200	76.3	119.2	68	0.68	78.7
8300	67.2	106.2	69	0.76	79.1

04REV6D2 install Vforce Delta III reeds (note reduced fuel flow)

EngSpd RPM	STPTrq Clb-ft	STPPwr CHp	AirTmp degF	BSFC lb/hph	Fuel B lb/hr
7300	70.1	97.5	67	0.67	64.1
7400	70.2	98.7	67	0.67	64.4
7500	73.5	105.2	67	0.64	65.5
7600	73.9	107.1	67	0.63	66.3
7700	75.6	110.8	67	0.63	67.9
7800	76.1	113.1	67	0.63	69.7
7900	76.2	114.4	67	0.63	69.9
8000	76.1	116.2	68	0.63	70.9
8100	76.3	117.7	68	0.63	72.3

8200	76.2	119.1	68	0.64	74.4
8300	75.7	119.7	68	0.65	74.8

04REV603 increase mains to 320 to compensate

EngSpd RPM	STPTrq Clb-ft	STPPwr CHp	AirTmp degF	BSFC lb/hph	Fuel B lb/hr
7200	73.2	100.3	67	0.66	65.1
7300	72.7	101.2	67	0.66	65.2
7400	72.6	102.2	67	0.65	65.4
7500	74.7	106.6	68	0.65	67.7
7600	77.2	111.8	68	0.64	69.5
7700	77.5	113.7	68	0.64	70.2
7800	77.5	115.2	68	0.65	71.4
7900	77.3	116.2	67	0.65	72.9
8000	77.3	117.7	67	0.67	75.7
8100	77.1	118.8	67	0.69	78.8
8200	77.4	120.8	68	0.68	78.1
8300	74.1	117.2	67	0.69	77.8

04REV604 remove shelf from inside airbox

EngSpd RPM	STPTrq Clb-ft	STPPwr CHp	AirTmp degF	BSFC lb/hph	Fuel B lb/hr
7300	72.7	101.1	66	0.66	65.1
7400	72.5	102.2	66	0.65	65.3
7500	73.3	104.7	66	0.64	65.8
7600	76.4	110.6	66	0.64	68.2
7700	77.6	113.8	66	0.64	70.9
7800	77.2	114.7	66	0.66	73.2
7900	77.2	116.1	67	0.66	73.6
8000	77.2	117.6	67	0.67	75.7
8100	77.3	119.3	66	0.65	75.8
8200	77.1	120.4	65	0.67	79.6
8300	75.5	119.3	65	0.68	79.5

04REV605 install Bender Racing silencer

EngSpd RPM	STPTrq Clb-ft	STPPwr CHp	AirTmp degF	BSFC lb/hph	Fuel B lb/hr
7200	73.6	100.9	67	0.7	66.2
7300	74.5	103.6	67	0.69	67.3
7400	74.7	105.3	67	0.69	67.8
7500	76.7	109.5	66	0.66	71.2
7600	76.9	111.3	65	0.67	71.1
7700	76.5	112.2	65	0.66	71.2
7800	77.7	115.5	65	0.67	73.1
7900	77.8	117.1	66	0.68	75.3
8000	78.5	119.6	67	0.66	74.4
8100	78.2	120.6	67	0.67	75.9
8200	76.7	119.7	67	0.72	80.2
8300	70.5	111.4	67	0.77	78.7

04REV606 advance ignition timing (see text!!)

EngSpd RPM	STPTrq Clb-ft	STPPwr CHp	AirTmp degF	BSFC lb/hph	Fuel B lb/hr
7200	75.3	103.2	64	0.66	67.4
7300	76.8	106.8	64	0.66	67.6
7400	78.8	111.1	64	0.65	68.9
7500	79.6	113.6	64	0.64	69.6
7600	80.5	116.5	65	0.65	72.2
7700	82.1	120.2	65	0.61	72.2
7800	81.9	121.6	65	0.62	74.5
7900	82.1	123.5	65	0.65	79.1
8000	81.4	124.1	65	0.65	78.5
8100	79.2	122.1	65	0.66	78.9
8200	66.6	103.9	65	0.79	81.1

04REV607 install DynoPort single pipe

EngSpd RPM	STPTrq Clb-ft	STPPwr CHp	AirTmp degF	BSFC lb/hph	Fuel B lb/hr
7200	71.1	97.5	63	0.69	64.2
7300	70.6	98.1	62	0.68	63.9
7400	72.1	101.6	62	0.67	64.7
7500	73.8	105.4	63	0.66	66.6
7600	76.3	110.4	63	0.65	68.8
7700	78.1	114.4	62	0.64	70.1
7800	80.1	118.8	62	0.62	72.2
7900	82.3	123.8	62	0.61	74.4
8000	82.3	125.4	61	0.62	76.7
8100	83.5	128.8	62	0.61	77.4
8200	82.1	128.2	61	0.62	78.9
8300	75.5	119.4	62	0.73	84.2