Installation manual power upgrade kit

SkiDoo/Lynx ACE 900 turbo 117 to 185 kW

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Lynx ACE 900 turbo 185 kW version during development testing in dyno

185 kW (250 hp) power upgrade kit

Supreme of the extreme !

SkiDoo/ Lynx ACE 900 turbo power upgrade kit

Thank you for choosing the MC Xpress power upgrade kit to your SkiDoo/ Lynx ACE 900 turbo.
The upgrade kit is designed for racing use only.
The upgrade kit is designed to give you the best performance possible together with reliability.
During the development work we have tried to keep the snowmobile as stock as possible to make the installation easy and to keep the sled as untouched as possible.
Read this manual before you start with the installation.
We hope you will get much joy with your new investment.
The turbo snowmobile is only recommended to be used by experienced riders and for racing use only.

- This upgrade kit greatly enhances the performance of the vehicle it is installed upon!
- Professional training should be received by anyone that operates this modified vehicle.
- Installation of this upgrade kit may void any warranty that is provided by the vehicle manufacturer.
- A one (1) year warranty is provided on the parts only. This warranty does not cover any other parts even if the damage is caused by the installation of the upgrade kit.
- MCXpress AB, its distributors, dealers, nor installers will not be held liable for any personal or physical damaged obtained in association with the installation or use of this product.

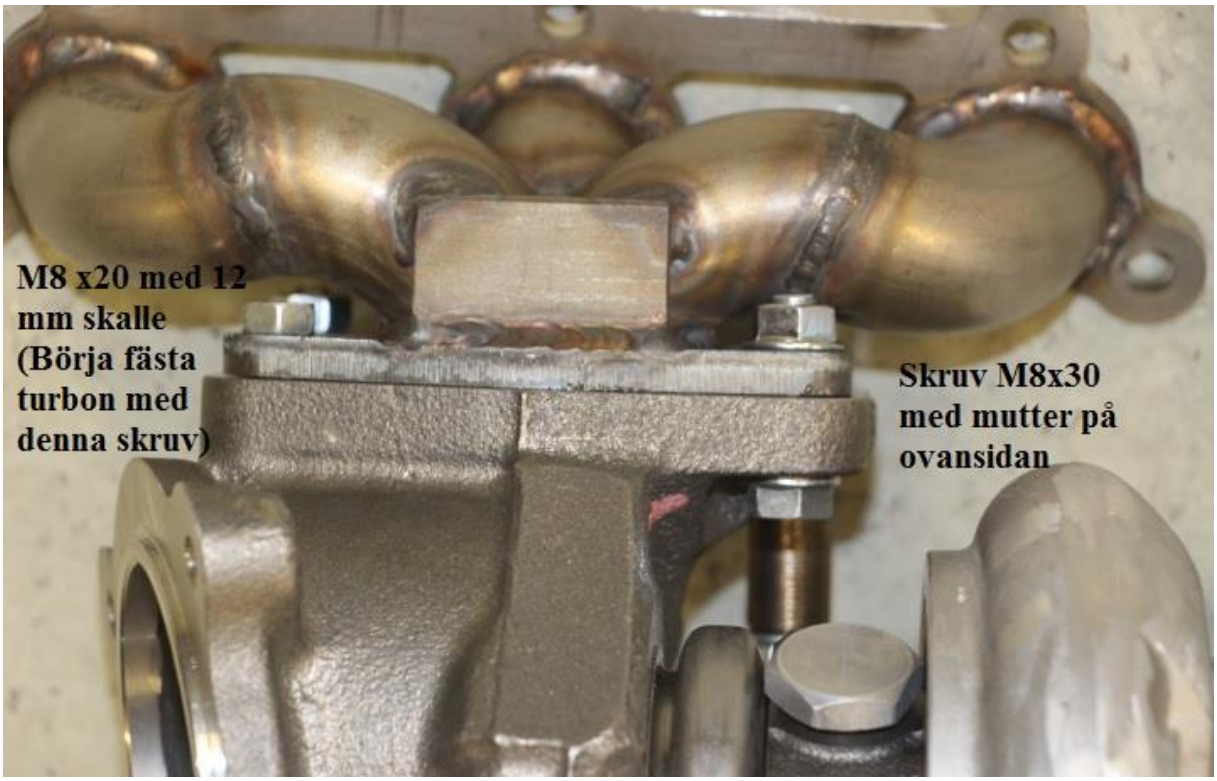
By installation or purchase of this product, the end user and or installer agree that the end user has been informed of this information.

Begin the installation by taking off the plastic side fairings and the hood.
Remove the intercooler and the upper stay for the intercooler by drilling out the rivets, (see picture below)

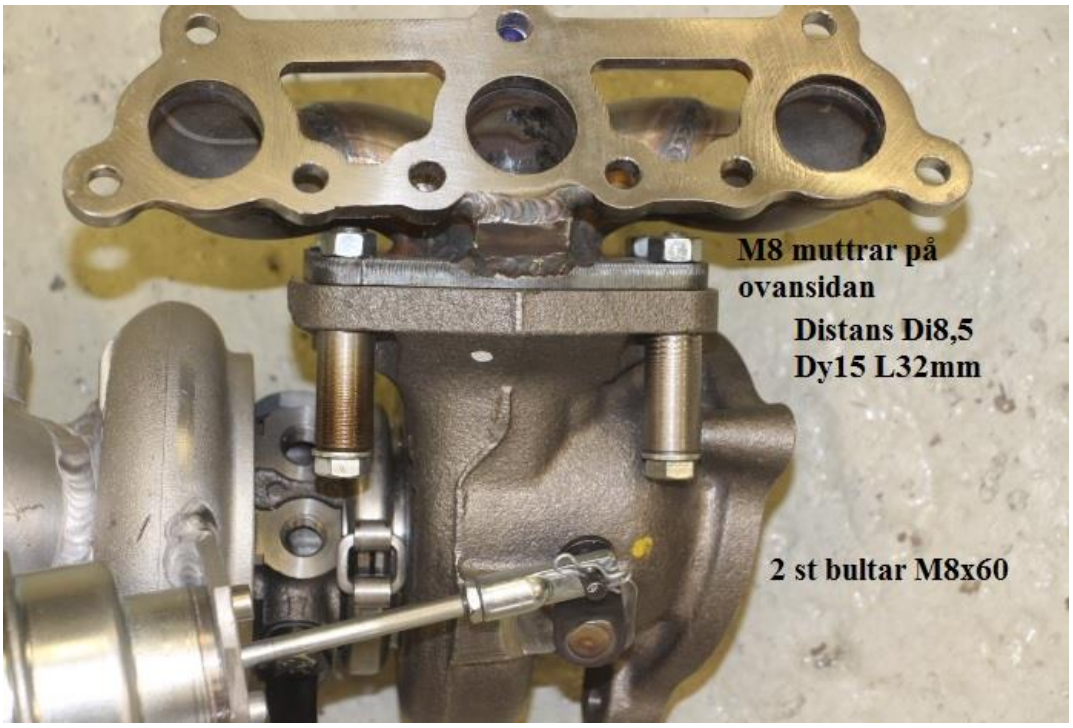
Remove the stock muffler, the oxygen sensor and the exhaust pipe between the turbo and the muffler.
Remove the water pipes from the turbo, and the turbo/exhaust manifold from the cylinder head.

Cut the exhaust manifold bolts 6 mm.

Use the stock exhaust manifold bots for the new headers. But you need to cut them about 6 mm to make them fit. The center upper bolt is longer and included with the kit. (Not showed in this picture) Use the stock gasket.
Then install the turbo to the exhaust manifold. No gasket required thanks to the step flange.

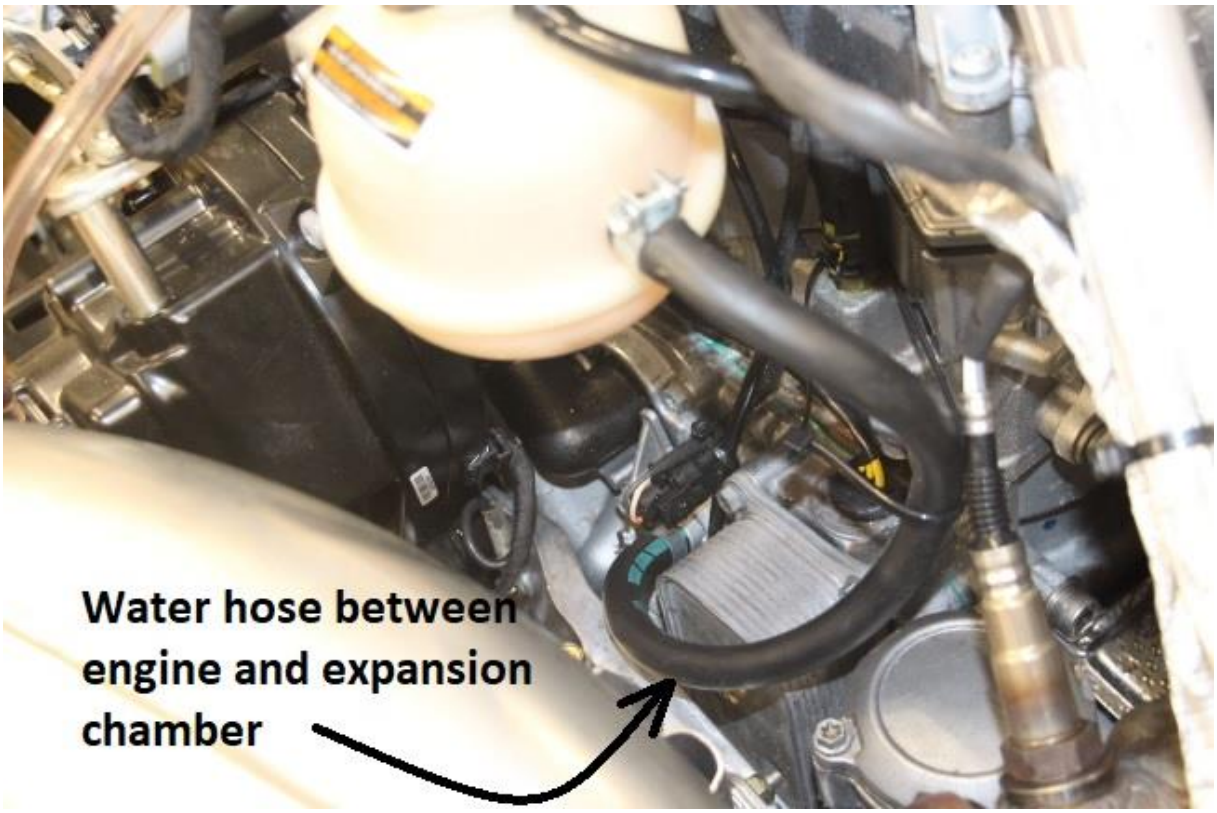


Turbo bolts seen from the front. Begin by installing the M8x20 mm bolt without the nut.

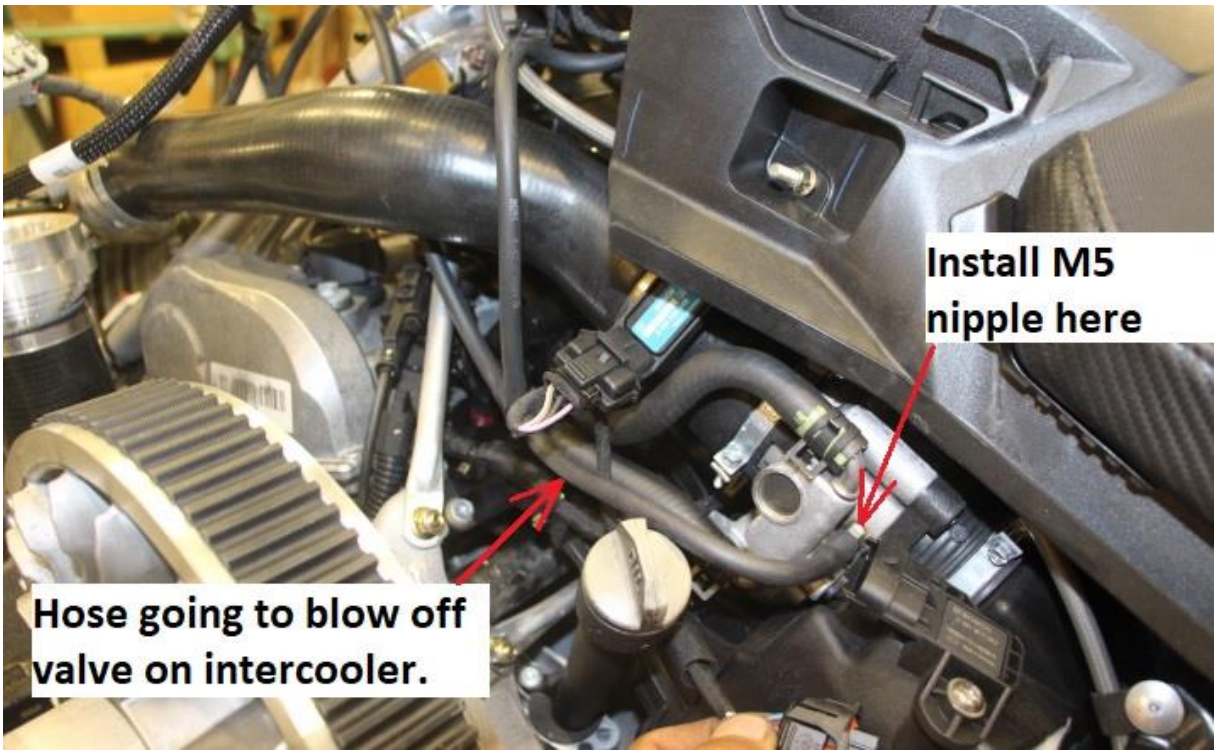


To get a better and less heat sensitive bolt joint between the turbo and the exhaust header, the rear bolts shall be installed like this (The picture is from behind the turbo)

Install the oil return line to the turbo. And install the oil inlet to the turbo. You might have to bend the stock oil inlet line a little to make it fit perfect with the new turbo.
Install the air engine ventilation hose directly to the nipple on the air inlet on the turbo. (Remove the water pre-heater system on the ventilation hose inlet)
Install the exhaust pipe out of the turbo now. No gasket required here thanks to the step flange.

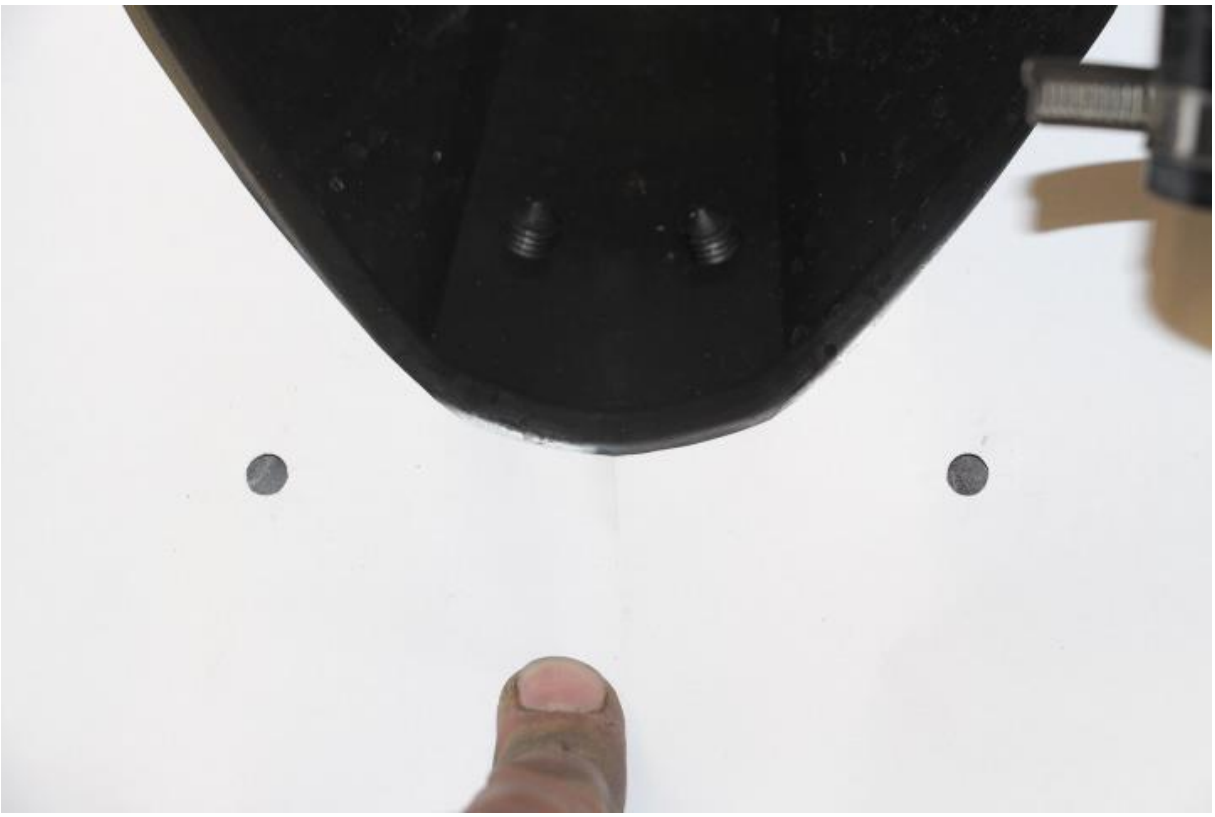


Install a water hose between the engine and the expansion chamber water tank.



Remove the throttle body from the plastic air intake manifold.
Install the small nipple included with the kit on the throttle body by making an M5 thread in the throttle body like the picture. Use a 4,2 mm drill. (4,0 mm drill will also work fine)

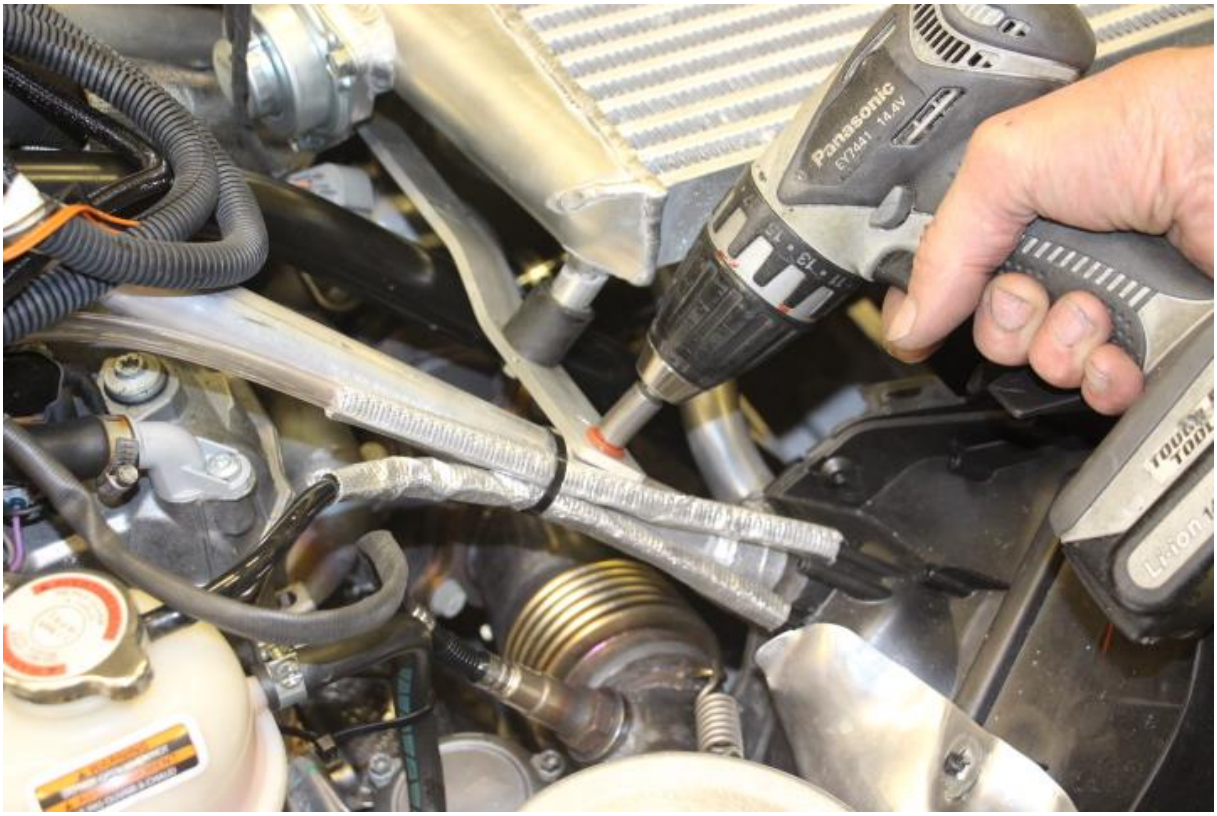
Install the throttle body to the plastic air intake manifold.
We recommend to put some super glue on the throttle body rubber to get a stronger connection against the plastic intake manifold to prevent it from blowing off.



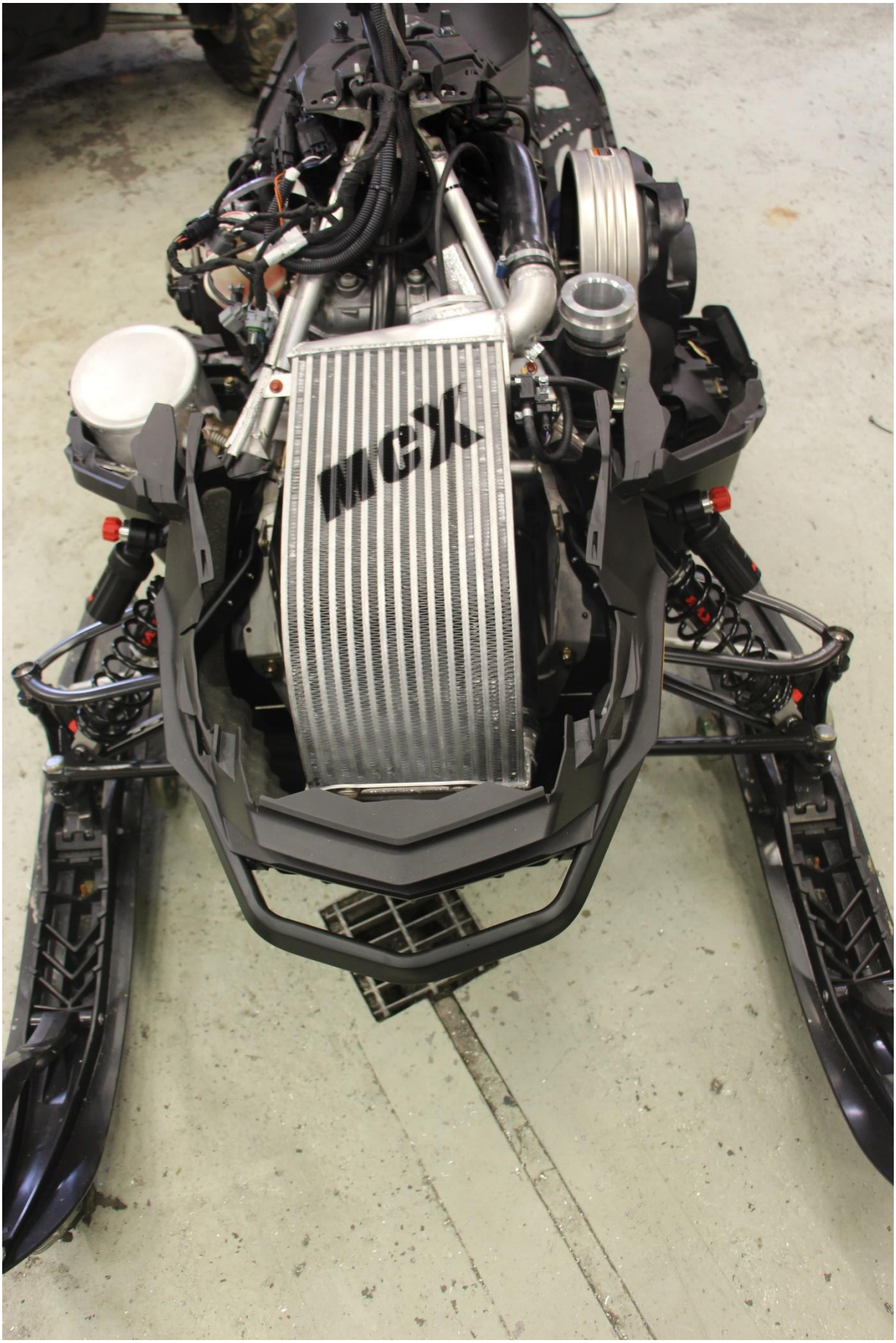
Now it is time for intercooler installation.
Use the template and drill two holes in the plastic.

Install all 4 rubber mounts to the intercooler.

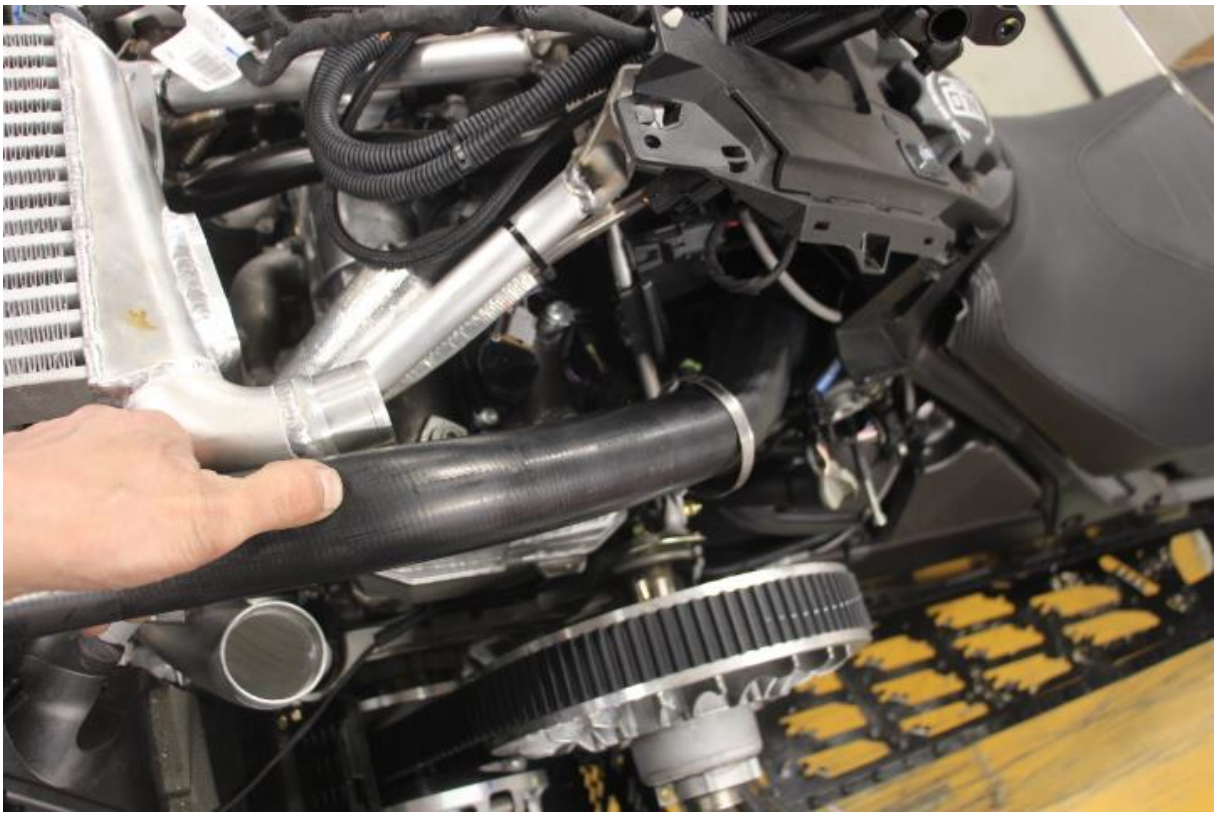
Install 2 M6 nuts from under to keep the intercooler in place.



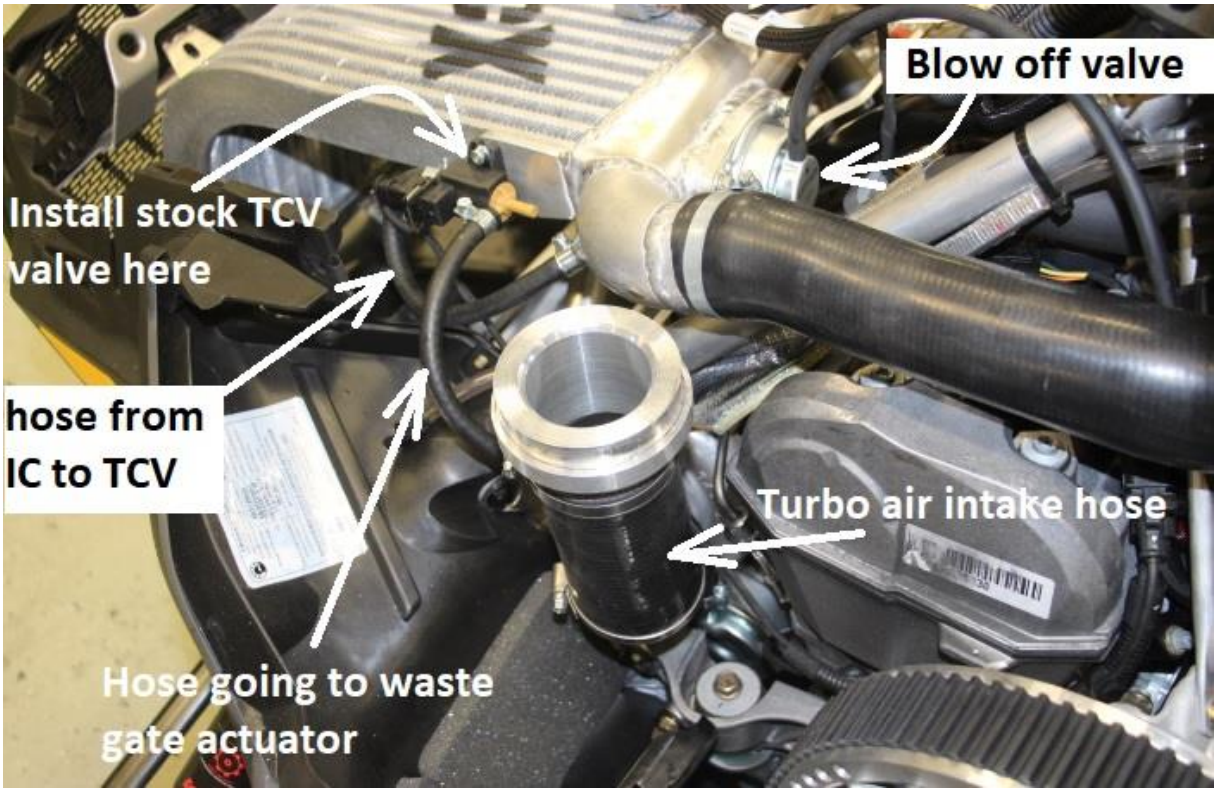
Install the upper stay for the intercooler. Use the self drilling bolts supplied with the kit



Install the air hose between the turbo and the intercooler



Cut the stock intake hose between the intercooler and the throttle body.

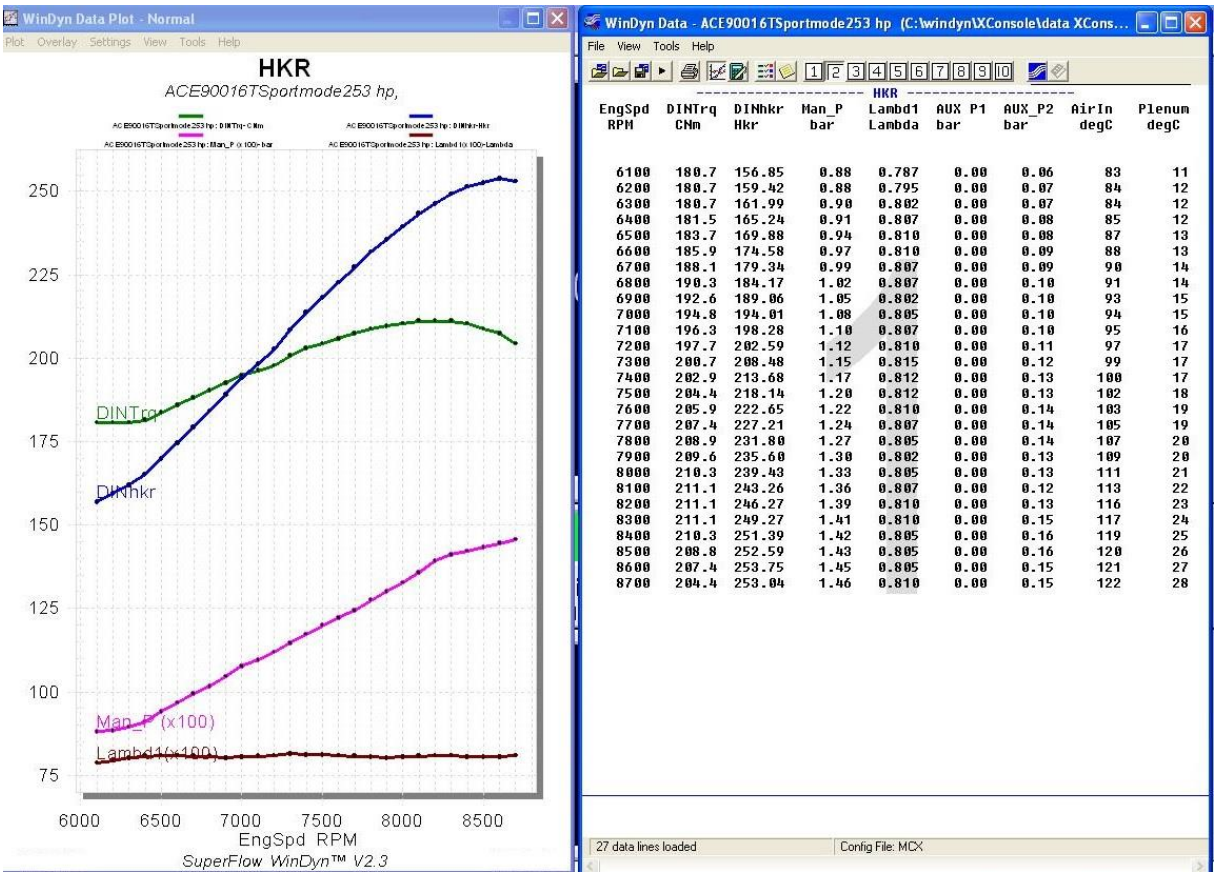


Install the TCV (=turbo control valve) and the hoses to and from the TCV like the picture. Install the turbo air intake hose on the turbo, but do not tighten the lower hose clamp yet. Tighten the clamp after you have installed the hood and placed the aluminum joint so it fits inside the hood air intake.

Install the new muffler. But first you will have to cut a little to make the exhaust outlet to fit the chassis. (see picture)

Install the oxygen sensor and the muffler. Use the stock springs

Install the new bigger injectors.
And send in the stock ECU to MC Xpress for re-flash.



HKR

EngSpd RPM	DINTrq CNm	DINhkr Hkr	Man_P bar	Lambd1 Lambda	AUX P1 bar	AUX_P2 bar	AirIn degC	Plenum degC
6100	180.7	156.85	0.88	0.787	0.00	0.06	83	11
6200	180.7	159.42	0.88	0.795	0.00	0.07	84	12
6300	180.7	161.99	0.90	0.802	0.00	0.07	84	12
6400	181.5	165.24	0.91	0.807	0.00	0.08	85	12
6500	183.7	169.88	0.94	0.810	0.00	0.08	87	13
6600	185.9	174.58	0.97	0.810	0.00	0.09	88	13
6700	188.1	179.34	0.99	0.807	0.00	0.09	90	14
6800	190.3	184.17	1.02	0.807	0.00	0.10	91	14
6900	192.6	189.06	1.05	0.802	0.00	0.10	93	15
7000	194.8	194.01	1.08	0.805	0.00	0.10	94	15
7100	196.3	198.28	1.10	0.807	0.00	0.10	95	16
7200	197.7	202.59	1.12	0.810	0.00	0.11	97	17
7300	200.7	208.48	1.15	0.815	0.00	0.12	99	17
7400	202.9	213.68	1.17	0.812	0.00	0.13	100	17
7500	204.4	218.14	1.20	0.812	0.00	0.13	102	18
7600	205.9	222.65	1.22	0.810	0.00	0.14	103	19
7700	207.4	227.21	1.24	0.807	0.00	0.14	105	19
7800	208.9	231.80	1.27	0.805	0.00	0.14	107	20
7900	209.6	235.60	1.30	0.802	0.00	0.13	109	20
8000	210.3	239.43	1.33	0.805	0.00	0.13	111	21
8100	211.1	243.26	1.36	0.807	0.00	0.12	113	22
8200	211.1	246.27	1.39	0.810	0.00	0.13	116	23
8300	211.1	249.27	1.41	0.810	0.00	0.15	117	24
8400	210.3	251.39	1.42	0.805	0.00	0.16	119	25
8500	208.8	252.59	1.43	0.805	0.00	0.16	120	26
8600	207.4	253.75	1.45	0.805	0.00	0.15	121	27
8700	204.4	253.04	1.46	0.810	0.00	0.15	122	28

Dyno test on sport mode.
98 octane fuel in Europe recommended and premium only in USA / Canada.
If you flip the switch to the standard mode, the turbo pressure will be about 1,25 bar and the power about 225 hp.

Clutching: It is actually possible to drive the sled with the stock clutching. The rpm will rise about 1000 rpm from stock, but the peak power has also rised in rpm about as much thanks to the more efficient turbo system and intercooler.