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Sports Exhaust System (18000-XGS-K0S0)

1. Performance of the standard silencer is as follow:
 1. As the manufacturer's genuine parts silencer, it produces a very low exhaust pressure which normally has never been thought before. Our system is compatible to produce both a low exhaust pressure, far less than that of commonly modified mufflers, and a very effective exhaust noise silencing performance. During the test conducted on engine dynamometer, we tried a straight pipe from the catalyzer down and measured an increase of only several horse power output.
 2. Noise level is just about low enough to clear the noise level regulation in Japan (JASMA) after October 1998 while the exhaust sound gives a sports car feeling.
 3. Only the short coming is that it is rather bulky and heavy which significantly interferes with the air flow under the floor.
2. Objectives for the development of Mugen sports exhaust system.
 1. Lighter weight.
 1. Use of titanium material: Use stainless alloy for the high heat area and titanium material for the lower heat area in order to achieve a balance between the durability and lighter weight.
 2. Optimizing the pipe's diameter: If the pipe's diameter is increased excessively, that will result in power decrease. It also produces banging exhaust noises which in turn will require larger silencer as well as inner silencer which can significantly resists the exhaust pressure. The exhaust pipe diameter appropriate for F20C engine is about between 60mm and 70mm and there is no noticeable change in the maximum power output in this range. (At below

6000rpm, there is no torque change seen even when the diameter of the exhaust pipe was changed, due to the effectiveness of the valve timing control on the V-Tec's low speed range). As a result of our repeated test on the dynamometer, we selected the pipe's diameter of 60,5mm which is the minimum size requirement, and 45mm for the extension of pipe after the junction manifold. (More than 1/2 of the cross section area of the main pipe after the junction section is not necessary and if the diameter is smaller, the silencer could also be smaller). We took a special care for manufacturing the junction section in order to minimize the energy loss and as a result, the system is smaller and 11kg lighter than the standard system.

	Standard System	Mugen System
Weight:	23kg [50.6lbs]	12kg [26.4lbs]

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2. Achieving a good exhaust sound quality for sports cars.
Exhaust noise criteria applied to S2000 after the 1998 regulation is as follow:

Noise Regulation	Before 1998	After 1998	Standard Cars	Mugen Cars
Close to Exhaust:	103db	96db	95db	94db
During Accelleration:	78db	76db	75db	76db

3. We decided the final specification of the exhaust noise quality on the basis of repeated test results by emphasizing the sound volume and quality at the practical speed range at which it requires the exhaust noise volume most for an open-hood sports car. Even though our exhaust noise level meets the '98 noise regulation, we did not make any compromise to produce a good sports car sound volume and rigid sound quality as well.
4. Designing a lower exhaust pressure.
The standard equipment silencer is a silencer of high performance equipped with a return pipe and with a low exhaust pressure resistance. We studied the inner configuration of the silencer and as a result, we were able to further reduce the energy loss after the catalyzer.
5. Use of stainless steel alloy as sound absorbing material.
Sound absorbing material of stainless steel alloy used for GT-NSX and JTCC Accord was selected in order to assure the durability for the sports driving which tends to increase the heat load.
6. High quality TIG welding.

