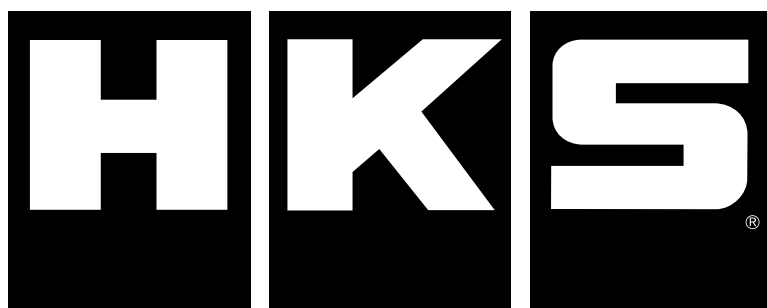


HKS Exhaust System

User & Installation Manual



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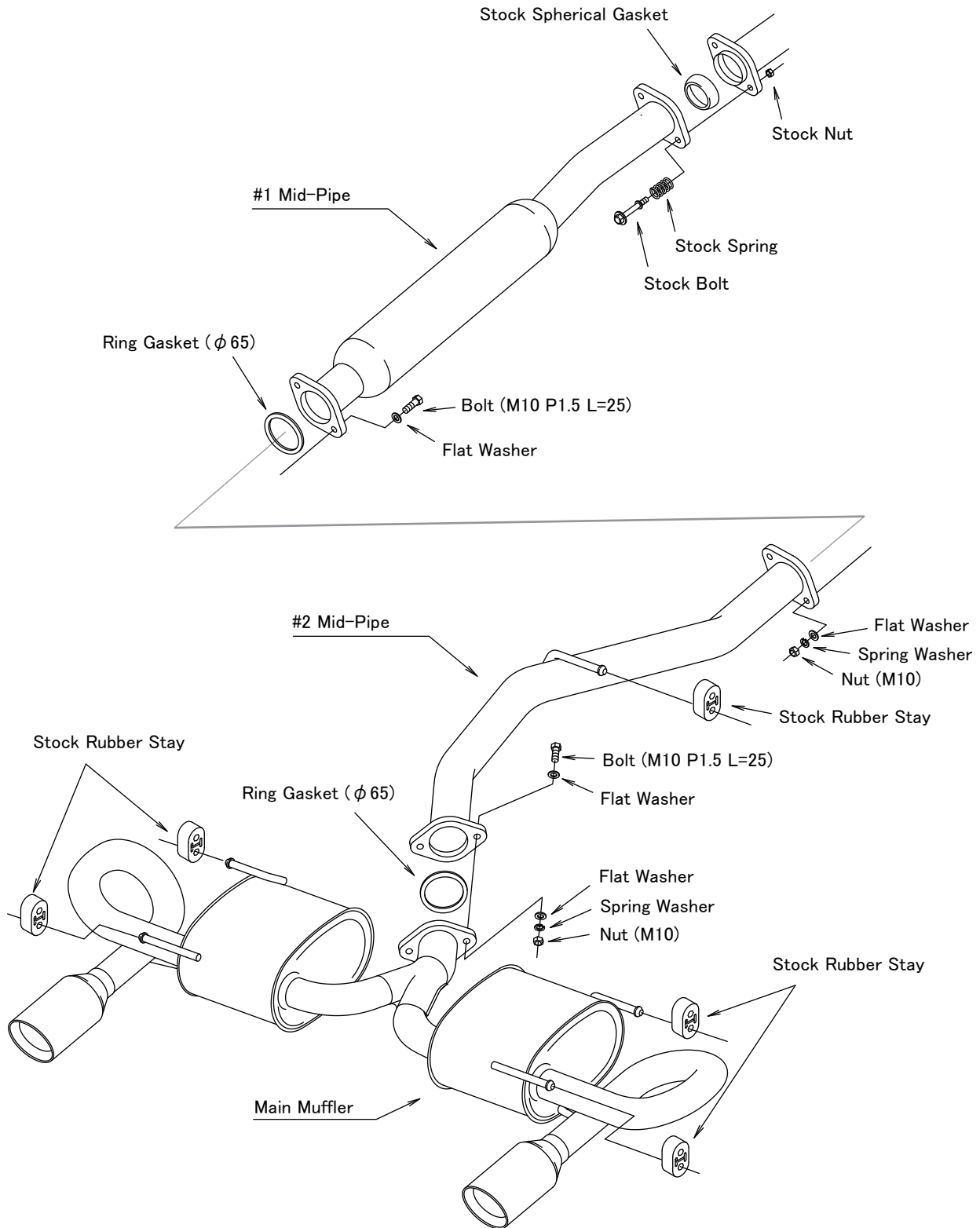
Confirm Before Installation

Part Number : 32018-AF019
Name of Product : LEGAMAX Sports
Application : TOYOTA GR86
SUBARU BRZ

- ★ Please make sure that the kit has all the provided parts listed below.
- ★ Be careful when handling this product; avoid dropping or giving it excessive impact. Otherwise, it may result in product damage or improper installation.

	Parts List / Hardware	QT.
①	Main Muffler	1
②	#1 Mid-Pipe	1
③	#2 Mid-Pipe	1
④	Ring Gasket (ϕ 65)	2
⑤	Bolt (M10 P=1.5 L=25)	4
⑥	Nut (M10 P=1.5)	4
⑦	Flat Washer (M10)	8
⑧	Spring Washer (M10)	4
⑨	Manual	1
⑩		
⑪		

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Thank you for purchasing HKS exhaust system. Please read this User & Installation Manual thoroughly before using this product so that you will understand and use product correctly. Please confirm that the contents are correct before installation on the vehicle.

Foreword

- Replacing exhaust systems entails dangerous work that only mechanics with specialized training should perform in an automobile service shop with adequate facilities. For untrained customers to install an unfamiliar product could be dangerous as it could result in injury and/or severe burns. Please request a specialist service shop to do the installation.
- Do not perform any illegal modifications on this product, such as cutting the pipe and/or removing the internal components of the muffler.
- Our company shall not bear any responsibility should you, the customer, or a third-party cause a breakdown of the product and its auxiliary product through modification or disassembly, or for damages caused by problems resulting from its misuse.
- This product and its parts may be revised without warning to the customer.
- Due to regulations, it is not legal to drive any vehicle with the catalytic converter or any other emission device removed or modified (Unless specified by local regulations).

Product Precautions

- When the engine is turned on or immediately after it is stopped, the exhaust manifold, exhaust pipe, catalyst and muffler are extremely hot. Be extra careful not to touch the section that exits the rear of the vehicle. You may suffer burns if you touch this or any section of the exhaust system. Please note that when you load or unload items from the trunk, your clothing could burn or melt if it touches the tail pipe. Please take caution around the surroundings when you stop or park the car.
- Oil or brake fluid spilt on the exhaust manifold could burst into flames.
- Exhaust gases contain toxic substances. There is always a danger of carbon monoxide poisoning if you continue to work in a poorly ventilated garage or warehouse with the engine running. Always turn off the engine and check for adequate ventilation before working in an enclosed space. Be especially careful when pets and children are near the installation site. Take note of wind direction when running a vehicle near people.
- This aftermarket exhaust improves exhaust efficiency and enhances the performance characteristics of the vehicle. Make certain that the brakes have been serviced completely and verify the brake performance and safety check all under carriage components.
- This exhaust system is designed to have a safe clearance from the road surface with the vehicle at standard (stock) height. Therefore, if the vehicle is modified and body height is lowered to an extremely low level, the muffler could become damaged or may damage other objects when it comes in contact with the road surface or protruding objects. Please do not lower the height of the vehicle to extreme levels because exhaust gas could leak from a damaged exhaust system.
- Even if parts in the emission system are used correctly, there is the possibility of deteriorating sound muffling performance from toxic substances in the exhaust gases or corrosion causing holes in the product depending on the usage of the automobile. If this is the case, please consult promptly with your dealer or service shop. If the product had lost its original capabilities, please have it exchanged with the same product. If corrosion is left untended, this could cause fire from leakage of exhaust gas under the lower part of the chassis. Moreover, the driver could be fined for driving a poorly maintained vehicle.

- It is the legal responsibility of the driver to safely upkeep his/her car. Periodic inspection and service is essential for safety and to prevent pollution. Be certain that routine inspections are made as well as periodic inspections and parts replacement if necessary.
- While the product of our company uses carefully selected materials, and the product is manufactured under strict quality control standards in consideration of durability, the product could corrode and develop holes at an unexpectedly early stage if the vehicle is driven under adverse conditions. Moreover, the product could be hit by small rock and other road debris that may damage or cause holes in the product. Please be very careful because this could cause leakage of exhaust gases.
- The law prohibits the removal of the catalytic converter or removing the interior components of it. Please refrain from such action as this could lead to environmental pollution.
- Exhaust components on automobiles sometimes reach very high temperatures. Do not leave the vehicle over dry grass or other flammable materials with the engine running or even after immediately turning off the engine.
This could cause a fire. Please stop or park your vehicle in an area where there are no flammable objects under the vehicle.
- When using your vehicle, refrain from revving or idling the engine for extended periods of time. This could cause deterioration of the sound muffling material in the muffler. The heat from stagnant exhaust could cause breakdowns of electrical parts and auxiliary parts in the engine compartment.
- Do not store or leave vehicle in humid areas or where salt is prevalent. This could cause deterioration and corrosion of parts.
- Avoid applying excessive load, as it may result in damage, deformation, or serious accidents.
Do not stand on, sit on, or otherwise apply body weight to the product.
- Please understand that using your vehicle in various types of races, circuit runs and other special use could markedly lower the durability of the product.
- During high-load sports driving, such as circuit driving, the tail section of the muffler may, in rare cases, come into contact with the bumper due to driving conditions, individual vehicle variations, thermal expansion, and other uncontrollable factors.
Such contact may cause scratches, deformation, or heat damage to the bumper surface.
herefore, when performing sports driving, appropriate heat protection measures, such as heat-resistant tape or heat shielding sheets, must be applied.

Installation Precautions

- When installing the product, make sure all instructions are followed precisely. Use a torque wrench and tighten the screws to the regulation (factory) torque so as to prevent the screws from loosening while the vehicle is in operation.
- Exhaust manifolds and catalytic converters can become extremely hot during usage. Coming in contact with a hot exhaust system may result in severe burns. Only work on the vehicle after it cools down. Please use heat-resistant gloves during service to prevent burns.
- Rust may make it difficult to loosen the nuts and bolts on the exhaust system. Use a spray-type lubricant and the correct tools to loosen the nuts and bolts and refrain from using excessive force that may cause the nuts and bolts to break. Always use heat-resistant gloves to prevent injury to hands.
- Exhaust system replacements are usually performed underneath of the vehicle. It is dangerous to replace the system if the lifted vehicles is in an unstable condition. Be certain to work safely by using a specified lifting machine for vehicles. Never work underneath of the vehicle lifted only by a standard car jack, as this could be extremely dangerous.
- Replacing of an exhaust system entails simultaneous tightening of nuts and bolts located separately, and working in situations where a heavy system is supported from below. Therefore, working alone could be very dangerous. Always work with two or more persons.

- Be careful to maintain the proper clearance when installing a new exhaust system. Please be particularly careful when working near brakes, fuel line, drivetrain and electrical systems.
- If you find cracks and other deterioration in the rubber exhaust hangers, replace them with the vehicle manufacturer's new standard parts.
- After the standard (stock) exhaust system is removed, disassemble them into shortest possible pieces and store them horizontally to allow for and moisture dissipation.
- In some instances it may be necessary to cut the stock exhaust into two pieces to remove it. The stock exhaust was installed before the rear suspension was installed on the vehicle.
The replacement HKS exhaust system will bolt directly on and does not require any modification (to the vehicle or the exhaust system).

Installation Procedure



WARNING

Protect against injuries & burns.

※ "stock parts" in this manual refers to the manufacturer's genuine parts.

NOTE

- Do not reuse the gasket.
- All rubber stays for hanging should be reused in the stock parts.

1. Remove Stock parts

- (1) Remove stock mid pipe and main muffler.
- (2) Remove the stock rear bumper.
- (3) Remove stock rear bumper side covers on both right and left sides.

NOTE

Please follow the automobile manufacturer's work procedures when removing stock parts.

2. Modification of stock rear bumper side cover

- (1) Mark the cutting line on the stock rear bumper side cover of both sides referring to Fig. 1 and Fig. 2.

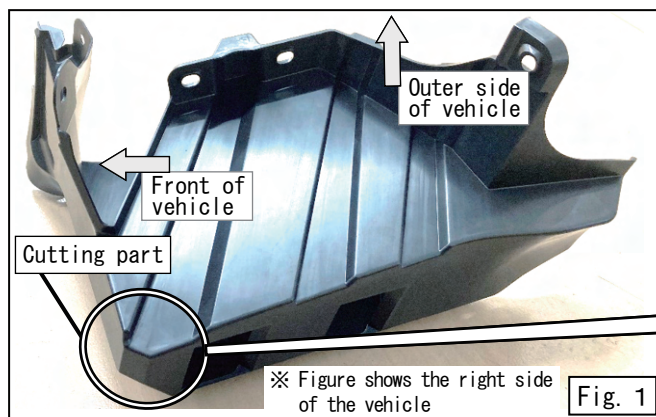


Fig 1. Stock rear bumper side cover

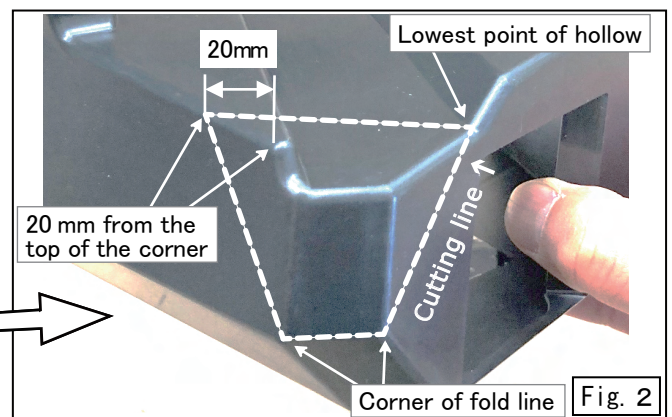


Fig 2. Where to cut and the detailed part of the processing

- (2) Cut the stock rear bumper side cover of both right and left sides along the line with the cutting position. (Fig. 3)
Remove the burr on the cut surface by using the cutter knife or file.
(Recommended hand tools: Hand saw, electric saw, and so on.)

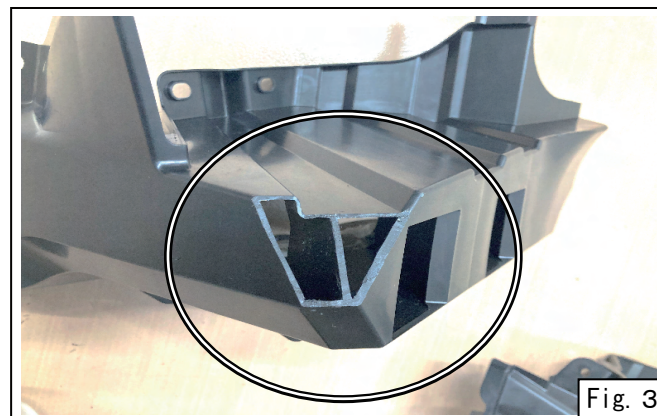


Fig 3. Rear bumper side cover after cutting process



CAUTION

If it omits the cutting process, it may melt the rear bumper side cover due to contact with the muffler when using the product.

3. Temporary assembly of #1 Mid-Pipe

- (1) Align the #1 mid-pipe in the proper position.

Insert the stock spherical gasket between the rearward flange of the stock front pipe and the frontward flange of the #1 mid-pipe. Pass the stock spring through the stock bolt. Pass it through the hole of the flange from the back, then tighten the stock nut from the opposite side for assembling temporarily.

NOTE

Reuse stock parts for bolts, springs, and nuts.

4. Temporary assembly of #2 Mid-Pipe

- (1) Align the #2 mid-pipe in the proper position.

Attach the stock rubber stay on the hanging hooks.

- (2) Insert the provided ring gasket ($\phi 65$) between the rearward flange of the #1 mid-pipe and the frontward flange of the #2 mid-pipe.

Put the flat washer onto the provided bolt and pass it through from the front side. Attach the provided flat washers, spring washers, and nut in this order from the opposite side for assembling temporarily.

5. Temporary assembly of Main Muffler

- (1) Align the main muffler in the proper position.

Attach the stock rubber stay in 4 places on the hanging hooks.

- (2) Insert the provided ring gasket ($\phi 65$) between the rearward flange of the #2 mid-pipe and the frontward flange of the main muffler.

Put the flat washer onto the provided bolt and pass it through from the front side. Attach the provided flat washers, spring washers, and nut in this order from the opposite side for assembling temporarily.

6. Installation of the modified rear bumper side cover and rear bumper.

- (1) Install the modified rear bumper side cover and rear bumper.

NOTE

Please follow the automobile manufacturer's work procedures when installing the stock parts.



CAUTION

It may not be able to attach the main muffler when installing the modified rear bumper side cover before installing the main muffler.

7. Assemble the entire system

- (1) Make sure all flanges fit firmly. Check the position and clearance between each pipe, muffler, underfloor, cross member, or other surrounding parts.

Tighten the bolt and nut that are temporarily assembled with specified torque in the order from the front side of the vehicle to the rear side.

Tightening Torque	M10	$T = 29 \sim 34 \text{ N}\cdot\text{m}$ ($T = 3.0 \sim 3.5 \text{ kgf}\cdot\text{m}$)
	Stock Bolt	$T = 18 \text{ N}\cdot\text{m}$ ($T = 1.8 \text{ kgf}\cdot\text{m}$)

* The ring gasket will not be able to reuse again due to deformation once tighten the bolt by specified torque.

- (2) Check the position and clearance between the tailpipe and bumper are correct. Re-tighten the coupling sections if necessary. Insufficient clearance may cause abnormal sounds or the resin-made bumper may melt by heat.

- (3) Check the position and the clearance between the main muffler and the rear bumper side cover of the right and left sides is correct.

The cutting line is designed to secure the clearance of approx. 45 to 50 mm in the traveling direction of the vehicle as shown in Fig.4

Process again the rear bumper side cover on both sides, if the clearance is under 45 mm depending on the condition of the product, vehicle, or level of processing.



CAUTION

If it omits this process, it may melt the rear bumper side cover due to contact with the muffler when using the product.

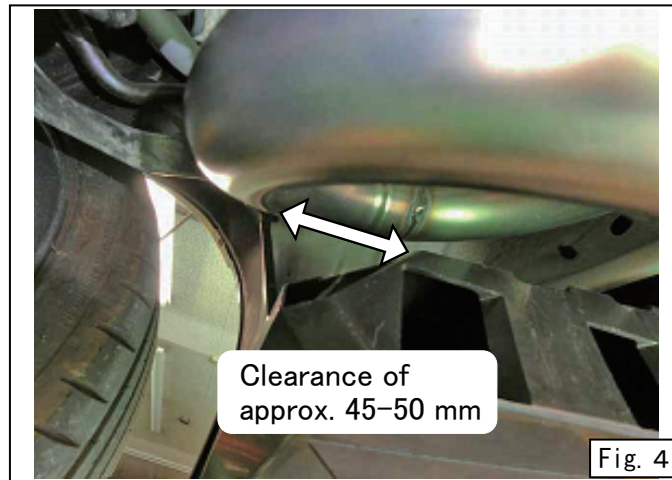


Fig 4. Clearance between rear bumper side cover and main muffler after modification

8. Verifying a Correct Installation

- (1) Check the clearance for each section by shaking the muffler after installing the product.
- (2) Start the engine, idle for a while, and rotate up to approx 2500 rpm. Then, inspect that there is no leaking of the exhaust air and abnormal sounds from the flange at each section.
- (3) Drive for a while, then inspect that there is no leaking of the exhaust air and abnormal sounds from the flange at each section.
- (4) If there are any problems found in the (1) to (3), install the product again from the beginning.



HKS Co., Ltd.

7181 Kitayama, Fujinomiya,

Shizuoka 418-0192, JAPAN

<https://www.hks-power.co.jp/en/>