

■ S-Stage α Bore Up Kit 145cc

GROM(JC92)



■ The "S-Stage α Bore Up Kit" comes with "FI CON TYPE-e" and a large capacity injector with "S-Stage Bore Up Kit".

■ S-Stage Bore Up Kit 145cc(N-10 Sports camshaft attached)

This bore up kit that can be changed the displacement from stock 124cc to 145cc.

By installing with FI CON TYPE-e (injection controller), it realizes more output torque than stock.

The cylinder adopts an aluminum steel sleeve cylinder. Bore diameter: 54mm, compression ratio 11.2:1, Stroke 63.1mm (same as stock)

SP TAKEGAWA M5 temperature sensor (optional) can be attached to the cylinder, to measure the cylinder temperature. (with compact LED thermometer)

■ N-10 Sports camshaft

The optimum profile that maximizes the performance of the stock cylinder head improves the output performance.

By installing it on a stock engine, the output in the high rpm range will be improved.

Relocating the stock decompression system to the sports camshaft will be auto decompression system.

■ Optional parts: N-20 Sports camshaft Now you can enjoy the performance on different driving occasions by exchanging our special parts.

■ About our "Bore Up Kit" installation

By installing the "SP TAKEGAWA Bore Up Kit", the engine output and torque will be greatly increased, so the load on the crankshaft will increase torsion and deflection.

We recommend installing the "crankshaft support adapter" at the same time to reduce the load on the crankshaft.

The "crankshaft support adapter" adds ball bearing support to the end of the crankshaft on the flywheel side, suppressing twisting and bending, and increasing the durability of the crankshaft.

■ Crankshaft Support Adapter for GROM (JC92) item No.01-10-0149

■ FI CON TYPE-e (injection controller) Can be attached to a genuine ECU with a coupler on.

Installing a bore up kit or exhaust parts will deviate greatly from the ideal air-fuel ratio, so it is necessary to correct the fuel injection adjustment (time) with the FI controller. "FI CON TYPE-e" has built in multiple setting data for SP TAKEGAWA engine parts, so you can easily select, change, and modify setting using a PC, mobile or smartphone according to engine specifications.

The injection time can be adjusted up to +5000 μs and up to -7500 μs, so it can be used for a wide range from stock to bore up engines.

The monitoring function for engine speed, engine temperature, throttle opening, and injector opening/closing ratio checked by a computer mobile or smartphone, it is very convenient to use during adjusting. It can be used for SP TAKEGAWA products from stock displacement to "S-Stage Bore Up Kit".

Requirement: FI CON TYPE-e using with computer mobile or smartphone. Caution: Must meet the following conditions.

To download software and applications, it is necessary to be connected to the Internet. Paid for apps.

■ FI CON TYPE-e usage requirement For PC

● Windows (excluding RT) Must be connected to the internet to install SP TAKEGAWA SOFT (FREE)

● Windows 7/8/10/11

Windows standard driver (stack) of Windows 10/11. A built-in adapter is also available. Windows 10 April 2018 Update (1803) or later can be connected in the same way.

Be sure to use the Windows standard driver (stack). Connections with other stacks are not supported.

Your computer must have built-in Bluetooth or a separate external Bluetooth adapter is required.

■ FI CON TYPE-e usage requirement For smartphone

● iOS iPhone 4s or later, iPad 3rd generation or later, iOS 9 or later

Install the SP TAKEGAWA (paid) app from AppStore.

After installing the free FI CON TYPE-e app, you need to purchase paid model data (from about 650 yen) in the app. The app unit price may change without notice.

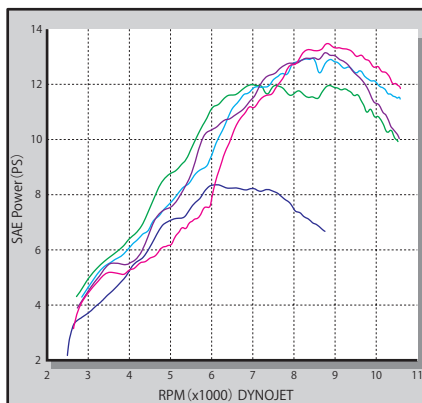
● Android: Bluetooth Version 4.2.2 or later

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Name	S-Stage α Bore Up Kit 145cc
Applicable model	GROM (JC92-1000001~)
Item number	01-05-5461
Price	¥ 121,600 (excluding tax)



Test: GROM (JC92)
S-Stage α Bore Up Kit 145cc+ Air Filter
+ Taper cone exhaust system
■ N-20 Camshaft ■ N-10 Camshaft

S-Stage α Bore Up Kit 145cc
+ Taper cone exhaust system
■ N-20 Camshaft ■ N-10 Camshaft
■ Stock Engine+Stock Camshaft+Stock exhaust system
※ Tested at the condition of our test facility, actual power may vary.

- S-Stage Bore Up Kit 145cc
- Sports camshaft (N-10/N-20)
- Fuel injector(G-1)
- FI CON TYPE-e(injection controller)
- Air Filter Kit

■ S-Stage Bore Up Kit 145cc

This bore up kit that can be changed the displacement from stock 124cc to 145cc.

By installing with FI CON TYPE-e (injection controller), it realizes more output torque than stock.

The cylinder adopts an aluminum steel sleeve cylinder. Bore diameter: 54mm, compression ratio 11.2:1, Stroke 63.1mm (same as stock)

SP TAKEGAWA M5 temperature sensor (optional) can be attached to the cylinder, to measure the cylinder temperature. (with compact LED thermometer)

There are two types of Bore Up Kit: without camshaft and with camshaft.

※If S-Stage Bore Up Kit is attached, FI CON TYPE-e(injection controller) must also be attached at the same time.

■ About our "Bore Up Kit" installation

By installing the "SP TAKEGAWA Bore Up Kit", the engine output and torque will be greatly increased, so the load on the crankshaft will increase torsion and deflection.

We recommend installing the "crankshaft support adapter" at the same time to reduce the load on the crankshaft.

The "crankshaft support adapter" adds ball bearing support to the end of the crankshaft on the flywheel side, suppressing twisting and bending, and increasing the durability of the crankshaft. ■ Crankshaft Support Adapter for GROM (JC92) item No.01-10-0149

■ Sports camshaft There are two types of camshafts, N-10 and N-20. Now you can enjoy the performance on different driving occasions by exchanging our special parts.

The optimum profile that maximizes the performance of the stock cylinder head improves the output performance. By installing it on a stock engine, the output in the high rpm range will be improved. Relocating the stock decompression system to the sports camshaft will be auto decompression system.

■ If Sports camshaft is attached to the states of Stock exhaust system and Stock piston, FI CON TYPE-e (injection controller) is not necessary.

※If you attached a Sports camshaft and SP TAKEGAWA muffler, or if you attached a Sports camshaft and SP TAKEGAWA air filter kit, you need to attached FI CON TYPE-e (injection controller).

■ Large capacity injector (G-1) When installing "S-Stage Bore Up Kit", Sports Camshaft, FI CON TYPE-e, it is necessary to install at the same time.

When installing the S stage bore up kit 145cc, sports camshaft, FI CON TYPE-e (injection controller), the genuine fuel injector does not have enough fuel injection amount for the increased amount of intake air, so this large capacity fuel it is necessary to install the injector at the same time.

※When installing SP TAKEGAWA exhaust system and S stage 145cc (without camshaft) only, large capacity injector is not required.

■ FI CON TYPE-e(injection controller) Can be attached to a genuine ECU with a couplar on.

Installing a bore up kit or exhaust parts will deviate greatly from the ideal air-fuel ratio, so it is necessary to correct the fuel injection adjustment (time) with the FI controller. "FI CON TYPE-e" has built in multiple setting data for SP TAKEGAWA engine parts, so you can easily select, change, and modify setting using a PC, mobile or smartphone according to engine specifications.

The injection time can be adjusted up to +5000 μs and up to -7500 μs, so it can be used for a wide range from stock to bore up engines.

The monitoring function for engine speed, engine temperature, throttle opening, and injector opening/closing ratio checked by a computer mobile or smartphone, it is very convenient to use during adjusting. It can be used for SP TAKEGAWA products from stock displacement to "S-Stage Bore Up Kit".

Requirement:FI CON TYPE-e using with computer mobile or smartphone. Caution:Must meet the following conditions.

To download software and applications, it is necessary to be connected to the Internet. Paid for apps.

■ FI CON TYPE-e usage requirement For PC

● Windows (excluding RT) Must be connected to the internet to install SP TAKEGAWA SOFT (FREE)

● Windows7/8/10/11

Windows standard driver (stock) of Windows10/11. A built-in adapter is also available. Windows 10 April 2018 Update (1803) or later can be connected in the same way.

Be sure to use the Windows standard driver (stock). Connections with other stacks are not supported.

Your computer must have built-in Bluetooth or a separate external Bluetooth adapter is required.

■ FI CON TYPE-e usage requirement For smartphone

● iOS iPhone4s or later, iPad 3rd generation or later, iOS9 or later

Install the SP TAKEGAWA (paid) app from AppStore.

After installing the free FI CON TYPE-e app, you need to purchase paid model data (from about 650 yen) in the app. The app unit price may change without notice.

● Android:Bluetooth Version 4.2.2 or later

Install the SP TAKEGAWA (paid) app from Google play.

After installing the free FI CON TYPE-e app, you need to purchase paid model data (from about 650 yen) in the app. The app unit price may change without notice.

■ Optional parts: Air Filter Kit It can be stored compactly around the engine and can be installed with stock looks.

By installing it on the stock throttle body, the output performance in the middle and high speed range will be improved. With breather outlet adaptor

■ It is possible to install a stock exhaust pipe or various SP TAKEGAWA exhaust system at the same time.



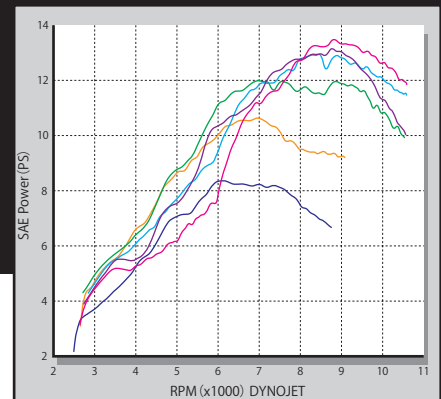
S-Stage Kit 145cc (Sports camshaft attached)



Sports camshaft (N-10)



Air Filter Kit (Red Filter element)



Test: GROM (JC92)
 S-Stage Bore Up Kit 145cc+ Fuel Injector (G-1)
 + FI CON TYPE-e+ Air Filter+ Taper cone exhaust system
 ■ N-20 Camshaft ■ N-10 Camshaft
 S-Stage Bore Up Kit 145cc+ Fuel Injector (G-1)
 + FI CON TYPE-e+Taper cone exhaust system
 ■ N-20 Camshaft ■ N-10 Camshaft
 ■ S-Stage Bore Up Kit 145cc (Without Camshaft)
 + FI CON TYPE-e+ Taper cone exhaust system
 ■ Stock Engine+Stock Camshaft+Stock exhaust system
 ※Tested at the condition of our test facility,actual power may vary.

Name	S-Stage Bore Up Kit 145cc		
Applicable model	GROM (JC92-1000001~)		
Item number	Without camshaft	Item number:01-05-5458	Price ¥ 36,800 (excluding tax)
Price	Camshafts included:N-10	Item number:01-05-5457	Price ¥ 49,800 (excluding tax)

Name	Sports camshaft		
Applicable model	GROM (JC92-1000001~)		
Item number	N-10 camshaft	Item number:01-08-0190	Price ¥ 19,800(excluding tax)
Price	N-20 camshaft	Item number:01-08-0191	Price ¥ 19,800(excluding tax)

Name	Air Filter Kit		
Applicable model	GROM (JC92-1000001~)		
Item number	Black Filter element	Item number:03-01-0039	Price ¥ 3,800(excluding tax)
Price	Red Filter element	Item number:03-01-0040	Price ¥ 3,800(excluding tax)

Name	FI CON TYPE-E (injection controller)		
Applicable model	GROM (JC92-1000001~)		
Item number	05-04-0122		
Price	¥ 63,800(excluding tax)		

Name	Fuel injector (G-1)		
Item number	00-00-0487		
Price	¥ 8,000(excluding tax)		

■ Sports camshaft (N-10/N-20) ■ FI CON TYPE-e(injection controller) ■ Air Filter Kit

■ Sports camshaft There are two types of camshafts, N-10 and N-20. Now you can enjoy the performance on different driving occasions by exchanging our special parts.

The optimum profile that maximizes the performance of the stock cylinder head improves the output performance. By installing it on a stock engine, the output in the high rpm range will be improved. Relocating the stock decompression system to the sports camshaft will be auto decompression system.

■ If Sports camshaft is attached to the states of Stock exhaust system and Stock piston, FI CON TYPE-e (injection controller) is not necessary.

※ If you attached a Sports camshaft and SP TAKEGAWA muffler, or if you attached a Sports camshaft and SP TAKEGAWA air filter kit, you need to attached FI CON TYPE-e (injection controller).

■ FI CON TYPE-e(injection controller) Can be attached to a genuine ECU with a couplar on.

Installing a bore up kit or exhaust parts will deviate greatly from the ideal air-fuel ratio, so it is necessary to correct the fuel injection adjustment (time) with the FI controller. "FI CON TYPE-e" has built in multiple setting data for SP TAKEGAWA engine parts, so you can easily select, change, and modify setting using a PC, mobile or smartphone according to engine specifications.

The injection time can be adjusted up to +5000 μs and up to -7500 μs, so it can be used for a wide range from stock to bore up engines.

The monitoring function for engine speed, engine temperature, throttle opening, and injector opening/closing ratio checked by a computer mobile or smartphone, it is very convenient to use during adjusting. It can be used for SP TAKEGAWA products from stock displacement to "S-Stage Bore Up Kit".

Requirement: FI CON TYPE-e using with computer mobile or smartphone. Caution: Must meet the following conditions.

To download software and applications, it is necessary to be connected to the Internet. Paid for apps.

■ FI CON TYPE-e usage requirement For PC

● Windows (excluding RT) Must be connected to the internet to install SP TAKEGAWA SOFT (FREE)

● Windows 7/8/10/11

Windows standard driver (stack) of Windows 10/11. A built-in adapter is also available. Windows 10 April 2018 Update (1803) or later can be connected in the same way.

Be sure to use the Windows standard driver (stack). Connections with other stacks are not supported.

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■ FI CON TYPE-e usage requirement For smartphone

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● Android: Bluetooth Version 4.2.2 or later

Install the SP TAKEGAWA (paid) app from Google play.

After installing the free FI CON TYPE-e app, you need to purchase paid model data (from about 650 yen) in the app. The app unit price may change without notice.

■ Optional parts: Air Filter Kit It can be stored compactly around the engine and can be installed with stock looks.

By installing it on the stock throttle body, the output performance in the middle and high speed range will be improved. With breather outlet adaptor

■ It is possible to install a stock exhaust pipe or various SP TAKEGAWA exhaust system at the same time.



Sports camshaft



FI CON TYPE-e (injection controller)



Air Filter Kit (Black Filter element)

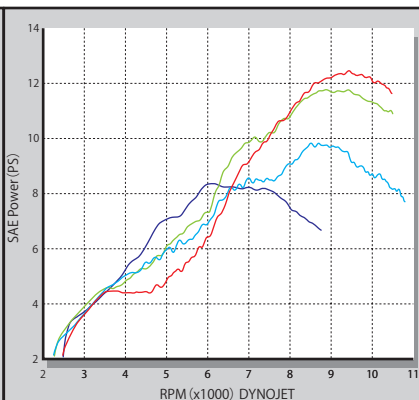
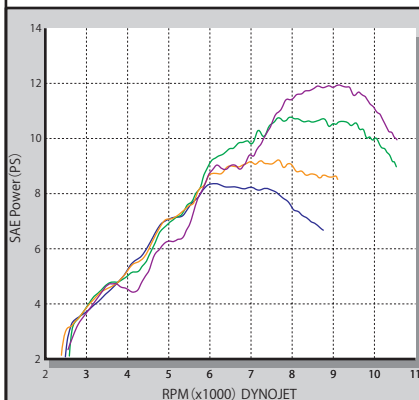


Air Filter Kit (Red Filter element)

Name	Sports camshaft
Applicable model	GROM (JC92-1000001~)
Item number	N-10 camshaft Item number: 01-08-0190 Price ¥ 19,800(excluding tax)
Price	N-20 camshaft Item number: 01-08-0191 Price ¥ 19,800(excluding tax)

Name	FI CON TYPE-E (injection controller)
Applicable model	GROM (JC92-1000001~)
Item number	05-04-0122
Price	¥ 63,800(excluding tax)

Name	Air Filter Kit
Applicable model	GROM (JC92-1000001~)
Item number	Black Filter element Item number: 03-01-0039 Price ¥ 3,800(excluding tax)
Price	Red Filter element Item number: 03-01-0040 Price ¥ 3,800(excluding tax)



Test: GROM (JC92)
Stock Engine + Sports camshaft + FI CON TYPE-e + Taper cone exhaust system
■ N-20 Camshaft ■ N-10 Camshaft
■ Stock Engine + FI CON TYPE-e + Taper cone exhaust system
■ Stock Engine + Stock Camshaft + Stock exhaust system
※ Tested at the condition of our test facility, actual power may vary.

Test: GROM (JC92)
Stock Engine + Sports camshaft + FI CON TYPE-e + Air Filter + Taper cone exhaust system
■ N-20 Camshaft ■ N-10 Camshaft
■ Stock Engine + Stock Camshaft + FI CON TYPE-e + Air Filter + Taper cone exhaust system
■ Stock Engine + Stock Camshaft + Stock exhaust system
※ Tested at the condition of our test facility, actual power may vary.

FI CON TYPE-e (injection controller)

GROM(JC92)

FI CON TYPE-e(injection controller) Detail

Can be attached to a genuine ECU with a couplar on.

■Preset MAP

You can select preset fuel adjustment maps that have been set according to the engine specifications.
You can easily change the settings using your PC or smartphone.

■Warning

Various settings needs higher knowledge, for expert use only.

If you have any problem or question about the contents, please do not work on your own, consult a dealer with skilled mechanics.

Basically, setting should be done in a factory equipped with a chassis dyno-meter and O2 sensor.

Never perform setting with your smartphone while driving. It is very dangerous.

■Fuel injection duration adjustment

It can be adjusted between a maximum increase value of 5000 μ s and a maximum decrease value of 7500 μ s on each 500rpm engine speed and every 5% throttle opening angle.

■Simultaneous monitor with engine temperature display function

The dedicated software for PC or smartphone has a simultaneous monitor function

In addition to the tachometer screen and throttle opening graph screen that are very convenient for setting, the fuel injection rate of the engine temperature injector is also digitally displayed.

■Pit lane limiter function

In addition to the above rev limit function, if you do not want to increase the engine speed such as pit lane speed regulation etc.,the limiter can be operated only when the "ON" by connecting the additional bottom switch (to the white lead in the spiral tube of the main unit and grounding the body) ※ Please provide extending wire to the switch.

■Real search function

Connect to a PC or smartphone with the engine started.Information of the running engine is reflected on the screen of the computer or smartphone at the same time.

The reading speed / throttle opening is reflected in the mass of the fuel map graph, and that high-lighted to make the adjustment point clear and very convenient for setting.

■Rev limit function

You can set the Maximum engine speed.It's other than that limiter-cut, it can be set even at low speed.

It can be used effectively when you don't want to increase the engine speed, such as tuning engine rev measures and break-in.

■Digital acceleration pump

This product monitoring the speed of the accelerator opening by TPS signal.

When the rider wants quick acceleration and the throttle is opened quickly, injection asynchronously the increase injection other than that set value.

The similar function as the acceleration pump of the racing carburetor.

■Tachometer output lead wire.

1 revolution, 1 pulse, 5 volts is output in purple lead wire in the spiral tube of the main unit.

※When installing, the bracket harness needs to be modified.

■Table below for compatible products that have been confirmed as of April 2020.

Medium DN Tachometer T2 (White LED) (05-05-3210)	Φ48 small DN Tachometer12500rpm (05-05-0083)	Φ48 small DN Tachometer12500rpm(REV) (05-05-0071)
Φ48 small DN Tachometer (Orange LED) (05-05-0078)	Medium LCD Speed & Tachometer (05-05-0053)	Black & Green electrical Tachometer (05-05-0092)

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Not compatible parts

H.I.D kits and LED headlights kit made other than Takagawa. The ballast / inverter (voltage converter) generates high-voltage noise that adversely affects the digital circuit, and may cause product failure or malfunction.Do not use an performance ignition device (ignition coil or plug wire) as it may cause malfunction or product failure due to increased radiation noise associated with increased ignition voltage. It is possible to use it with Takagawa's hyper ignition coil. Do not use other performance generator or similar products, it may cause a malfunction due to insufficient power generation or voltage waveform.



Name	FI CON TYPE-e (injection controller)
Applicable model	GROM (JC92-1000001~)
Item number	05-04-0122
Price	¥ 63,800(excluding tax)