

A new era of carburetor has arrived!

What is "PE"? Full control on a carburetor? PE3IG2 I'm amazed at the magical full control that JAM uses!

An ignition system has appeared that can be described as a "revolution in carburetors." It allows for more precise ignition control. Using a throttle position sensor, it is possible to set it using a 3D map. It not only increases the power of the engine, but also changes the flavor. We spoke to the man who should be called the first to develop this American-made ignition device as a model-specific kit in Japan.



The unit (ECU) that controls the ignition of the PE3IG2 is small enough to easily fit under the seat. I didn't measure the weight exactly, but it feels lighter in the hand than it looks. The manufacturer says it weighs less than 1 pound (about 450g). This vehicle-specific kit was made by Naruke of JAM, and allows you to experience fine, detailed changes. The harness coupler, which is responsible for more delicate engine control, is for CAN communication with the connected computer.

A revolutionary ignition system has been introduced for carburetor vehicles. It has a range several times larger than conventional controls, allowing for precise ignition settings like those of injection vehicles. With fuel injection devices now commonplace, it was thought that there would be no further major evolutions in carburetor-equipped engines, but now a new era has arrived. We spoke to Kiyoyuki Naruke, president of Jam, a limited company that develops and sells the system, to find out more about what it is.

"It all started about three years ago. There was an article in an American industrial newspaper about a young company called Performance Electronics, which designs and manufactures control systems and also works on unmanned exploration vehicles. I became interested and went to check out their website, and discovered that the people at the company also love motorsports, and in addition to full-control injection systems, they had developed an ignition control system for carburetors. This system removes the injection control capabilities from full-control systems and instantly and precisely controls the ignition like a full-control system. So I immediately contacted them and said that I wanted to sell this product in Japan."

As an official importer of high-performance injection controllers and rapid bikes, Naruke is well versed in injection control and has a wealth of experience and knowledge.

“That is why I immediately realized the usefulness of a system that brings the carburetor closer to the capabilities of an injection vehicle. The ignition control, which was simple even with genuine and aftermarket products, has been changed to have more detailed sensing than genuine and aftermarket products and is controlled by a computer.”

With this PE3IG2, you can connect the analog ignition control to a computer and quickly and easily make detailed settings to suit the engine's condition. If you attach a TPS (throttle position sensor) to the carburetor, you can also set the advance value with a 3D map. For example, you can deal with symptoms such as a torque valley during rotation increase or a problem where the engine does not keep up when the throttle is opened suddenly, even if you have no other options. You can now use the engine's capabilities that you have been unable to use and have given up on until now in a wider range. Not only can it be used to simply increase power, but it can also improve engine starting, smooth out characteristics, and change the flavor of torque. The rev limit can be set as desired, and it can be used on two-plug and two-stroke vehicles. Another advantage is that it does not require a dedicated ignition coil, so you can use the original ignition coil. It also has a data logger function. Of course, the appropriate carburetor diameter and exhaust system are required, but the data can also tell you if there is something wrong with them. With this system, the conventional wisdom about carburetors will become a thing of the past.

No matter how good this product made by Performance Electronics in North America is, it needs to be made into a kit for each vehicle model in order to be accepted in Japan. That is what Naruke-san is doing. He has completed it through various trial and error. That is why this system is an original “JAM” developed jointly by Naruke-san and Performance Electronics.” Currently, there are models such as the GPZ900R, ZRX1100/1200 series, XJR1200/1300, and GSX1100S, and more are planned to be added in the future.

"Carburetors haven't changed much for a long time. I think many people have given up, thinking it can't be helped because it's an old system. But bike riders are always looking for change and evolution. We want to have more fun. We want to expand the possibilities. Carburetored bikes aren't over yet."

When riding old bikes, you may have vaguely accepted that it was just like that, but now you can use digital data to clearly adjust it. There are many people who have problems with their bikes, such as being difficult to ride, difficult to handle, or not being interesting enough. A new light has been shed on this.



JAM Project & Factory President Yoyuki Naruke, the representative of "JAM" who does ECU tuning, carb setting, engine overhaul, and even vehicle sales. He caters not only to those who enjoy circuit driving but also to those who are particular about street driving.



President Naruke's favorite bike and demo bike

The settings are done using the latest dyno machine, which has dedicated measurement modes for all carburetor, injection, and electric motor vehicles. JAM also sells and installs the DIMSPORT "DYNO BIKE," which is equipped with a speed-variable RAM fan and a variable running resistance load device.

Not only have the front and rear wheels been changed to 17 inches, but the entire suspension of the Z1000J has been changed. The engine has been modified with an increased displacement, a Mikuni TMR carburetor, and a new muffler. A TPS (throttle position sensor) has been installed on the TMR carburetor, and the PE3IG2 has been set up with a 3D map to make it easy to use on the street. The PE3IG2 is amazing because it can even control the charge voltage of the ignition coil.



Article's author took demo bike out for ride. Below is his evaluation.

There are some latest models that are not as smooth as this one. I was surprised even at idling. The intake and exhaust are not genuine, and the displacement is increased, making it stable, which is unusual for a modified air-cooled 4-cylinder engine. It starts easily too. Even when I put it in first gear and engaged the clutch at a speed close to idling, the low-rpm torque slowly started to move forward. I drove through the slightly crowded city at low speeds, accelerating and decelerating in line with the car, until I entered the highway. Even when I opened and closed the throttle and accelerated and decelerated repeatedly, the torque did not suddenly become strong, and my body did not move forward, so it was so smooth that I was surprised. To be honest, there are also latest injection models that have a sudden torque rise, or what is called a thump. It's not that the torque is not thick enough to make you feel it, but rather that this behavior, despite the powerful torque from the low-rpm range, makes it hard to doubt the effectiveness of the PE3IG2. Entering the highway, I opened the throttle even wider and pulled it up to the high RPM range. There was no clear torque valley along the way, there was no sudden change at a certain RPM and no increase in acceleration, the torque was flat all the way. So it was easy to ride, with just a movement of the right hand, from any RPM range, leading to smooth acceleration. Before I knew it, I had reached the speed limit. After the test drive, I asked Mr. Naruke if the speed numbers displayed digitally were wrong, the kind of speed that you can't write down without realizing it. It's really easy to ride as a street model that can be driven around town. On the other hand, it's not surprising that some people think it's not interesting because it doesn't have the wild excitement that you'd expect from an air-cooled 4-cylinder engine. But just as you can create a smooth ride without any peaks or valleys, the PE3IG2 can easily create the wild performance you like.