

Important Information and Tips On Using the Motion Pro SyncPro 08-0411

The Motion Pro SyncPro 08-0411 intake synchronizer is a very popular and useful tool. After years of development, testing and tweaking we are confident in the performance and accuracy of the SyncPro. However, this tool does require correct set up and use to function properly. Many of the calls we receive from users experiencing difficulties with the SyncPro are due to improper set up and/or incorrect use. The following are some tips and tricks to help you get the best performance from your SyncPro as well as suggestions on how to instruct your customers on the proper use of the SyncPro.

First and foremost, and what should be the starting point of any new tool is to please **READ THE INSTRUCTIONS....** The SyncPro is not complex, but it is a precision instrument that requires proper set up and operation to function properly. The SyncPro comes with four pages of very detailed, necessary instructions and it is vital that a new user become familiar with them before using this tool.

Second, we get a lot of calls from highly experienced, qualified mechanics who are unclear on the use of the SyncPro. These veterans look at the SyncPro, see that it looks similar to the old mercury carb synchronizer and make the mistake of assuming that it works the same way. The SyncPro may be similar in form to a mercury carb tuner, but it functions very differently.

This is probably a good time to talk about how the SyncPro works, as there seems to be a lot of misconceptions about how it functions. Just as a quick recap, a mercury tool relies on the weight and density of mercury to measure manifold pressure. A mercury tool is open to the atmosphere at both ends and relies on the weight of the mercury to achieve its measuring range. This made for a simple tool that was easy to use and understand. However, mercury is very toxic and several states, including our home state of California, have banned its use and sale. After a lot of research and testing, Motion Pro found a way to make a liquid based carb synchronizer that does not rely on mercury, but, as a result, it functions very differently. All the channels on a mercury tuner draw from a common reservoir. On the SyncPro, each channel is completely separate. The SyncPro fluid is specially formulated to function in the SyncPro and is not compatible with mercury tuners. Each of the chambers on the SyncPro are sealed at the end opposite from where the hoses connect to your motorcycle, and a separate adjustment is provided for each channel. The reasons for this are explained further below.

There is an air space between the calibration screw and the SyncPro fluid, which is the single most critical part of the functioning of the SyncPro. The air in this small area expands and contracts in response to the vacuum from the intake on your motorcycle and allows the fluid to move up and down to indicate the level of vacuum being applied on each channel. If the air space is larger, the same amount of vacuum will cause the air in that space to expand more, and the fluid will move a greater distance. This means that the tool will have a lower vacuum limit, but will be more sensitive. If the air space is smaller, the fluid will move less in response to the vacuum being applied, raising the vacuum limit of the tool, but making it less sensitive. In designing this tool, we focused heavily on what volume of air space gives the best performance in terms of a balance between sensitivity and the vacuum range that the tool can measure, and we settled on an air space of approximately 6-8mm in a new SyncPro. The amount of air space in the piston chamber cannot be changed without changing the total amount of fluid in that channel.

The calibration screws serve a dual function. Their primary purpose is to balance small differences

in each of the channels, but they can also affect the vacuum limit of the tool. If the screws are turned anti-clockwise all the way out, the tool will have a slightly higher vacuum limit because the fluid at the measuring end of the tube will be lower. The opposite applies if the screws are turned all the way in; the tool has a slightly lower vacuum limit because the fluid will be pushed up higher at the measuring end of the tool. One of the most important aspects of using the SyncPro is to calibrate the tool before each use following the instructions included with the tool.

If the tool is used properly and the vacuum limit of the tool is not exceeded, a user can expect the SyncPro to provide many years of trouble free use. The most common failure problem is exposing the tool to more vacuum than it is set for. This will cause fluid to be lost from the tool, and that all-important air space in the chamber gets larger. As mentioned before, when the air space is larger, the vacuum limit is lower, making it easier to lose more fluid, increasing the air gap again, which lowers the vacuum limit, and on in a downward spiral until all of the fluid is gone and the tool is useless. Or, the fluid will get so low that air is drawn into the tubes, and then the SyncPro will have large gaps in the fluid in the columns, again rendering it useless.

Luckily, refilling a SyncPro that has lost its fluid is an easy task, and Motion Pro has a complete refill kit including new sealing o-rings and grease for only a few dollars (P/N 08-0415).

So, if you have a technician or customer who comes to you with problems with a SyncPro, now you have a lot of information to assist them. The single most important thing to look at is the fluid level in the chambers. If that air space is larger than 8mm, or the fluid levels vary widely across all the chambers, you know the tool was not used properly.

Lastly, Motion Pro is here to help. If you experience difficulties using the SyncPro that cannot be resolved with the instructions and the above information please call and ask to speak with one of our technicians.