



The Digi Sync

Digital Vacuum Gauge
For Carburetors and Throttle Bodies

TheDigiSync.com



OWNER'S MANUAL:

2-CHANNEL

4-CHANNEL

6-CHANNEL

Overview:

The Digi Sync is designed to allow users to balance the carburetors or throttle bodies on fuel injection vehicles. It is a digital peaking manometer which analyzes the peak-to-peak values of the vacuum pulsations and does not use inline restrictors that dampen the vacuum pulsations. Therefore, The Digi Sync has a significantly higher accuracy with less noise than any traditional fluid manometer or mechanical vacuum gauges.

Carb/Throttle-Body balancing will improve the response, smoothness, mileage, performance and running temperature of your engine. Digital synchronization is better because it is more accurate and does not pose the risk of sucking manometer fluids into your engine.

Contents:

- The Digi Sync (2, 4, or 6 channel)
- Storage Tub
- Magnetic cling option (magnet installed inside the case)
- Set of 5/32" vacuum hoses with ¼-turn quick connectors
- Set of replacement vacuum caps with retaining clips
- Set of 5mm and 6mm adapters (**ONLY finger tight!**)

Operating Instructions:

- 1) Locate intake vacuum ports on your vehicle and remove the vacuum caps, or hoses, as necessary. Attach the supplied vacuum hoses to the ports.
Depending on your engine, you may need to temporarily install 5mm or 6mm adapters during synchronization.
*Important reminder: Ensure these are only finger tightened. **The use of tools for tightening may cause breakage!***
- 2) If your fuel petcock is vacuum operated, draw a vacuum on the petcock line and then use vice-grips to clamp the line to ensure fuel flow.
- 3) Connect the supplied vacuum hoses to The Digi Sync using the attached ¼-turn quick connectors.
 - a. Only tighten the quick connectors finger tight. **Do NOT use tools or overtighten!**
 - b. Do **NOT** plug or cap-off unused vacuum lines on The Digi Sync unit. Leave them open.
 - c. Keep The Digi Sync above the carburetors so that fuel does not run into the vacuum lines.
Tip: Stick The Digi Sync to any metal surface. e.g. Your metal gas tank.
Be aware that engines and exhaust may get hot enough to melt The Digi Sync and hoses.
- 4) Turn on The Digi Sync and wait a few moments for it to finish self-calibration.
The LCD screen will display all readings in the same order/arrangement as the vacuum hoses.
- 5) If your bike is air-cooled, position a fan so it blows cool air over the cylinder head and/or radiator.
- 6) Warm the engine until it will idle reliably without choke (if present).
The engine should not be at full operating temperature at this point as it may lead to overheating later.
- 7) Refer to your vehicle's maintenance manual and set the idle as specified.
- 8) Adjust each carb/throttle-body:
 - a. All carburetors should be adjusted to match the reference carburetor. This is the carburetor that is fixed and is not adjustable.
 - b. Each adjustment should be approximately 1/8th turn of a screw.
 - c. It is best to blip the throttle after each adjustment to allow the vehicle to relax into its new setting.
 - d. It is normal for it to take several iterations to sync all carbs because each adjustment affects the others.
 - e. Engine idle speed should be monitored and adjusted when necessary to maintain specified RPM.
 - f. **The best engine performance is achieved when The Digi Sync readings are within 1-2 kPa from one another. However, on some machines that may be difficult to accomplish.**
- 9) Once complete, do the following:
 - a. Set the idle speed according to the service manual.
 - b. Remove the supplied vacuum hoses from the vehicle's vacuum ports.
 - c. Replace all vacuum plugs that were removed from the vehicle. If 5mm or 6mm adapters were used, then replace them with the original screws to seal the ports.

10) Units – With firmware version 3.1 or later, The Digi Sync will always power-up showing vacuum in units of kPa. To cycle through the units displayed, press and firmly hold the button for at least 2 seconds.

Cautions, Warnings, and Disclaimer:

- Engine and exhausts can become dangerously hot!
- Be careful with any spilled fuel. It is dangerous both as a fire risk and fume inhalation.
- Work in a well-ventilated area.
- Inspect all hoses to ensure they are not touching anything that will melt them and that they are not flattened or kinked.
- The Digi Sync is NOT waterproof. Do NOT submerge in any liquids or spray with chemicals.
- Anyone using The Digi Sync should have adequate knowledge regarding the mechanics of their vehicle, particularly, but not limited to, safely removing the fuel tank. If you feel unable to safely do this, or any of the other related tasks, hire a professional.
- By using The Digi Sync, the user agrees to assume ALL risks and shall NOT hold The Digi Sync team responsible for any damages or losses inflicted upon yourself, others, or equipment while using this product.
- *If you are uncomfortable with the steps in these instructions, seek guidance from or hire a professional.*

Questions & Answers:

- Any or all of the channels may be used at one time. Unused channels should be left OPEN (not capped).
 - The Digi Sync can be operated in any orientation: vertical, upside-down, etc...
 - Automatic calibration is performed every time The Digi Sync is turned on.
 - Hose extensions may be added if all hoses are identical lengths.
 - Range & Accuracy/Resolution of vacuum gauge:
 - kPa: -81.5 to 0.0 in increments of 6.9
 - mBar: -814.6 to 0.0 in increments of 69
 - Inch of Mercury (inHg): -24.1 to 0.0 in increments of 0.04.
 - PSI: -12.0 to 0.0 in increments of 0.05
- Tip: These values represent the accuracy of The Digi Sync. However, when synchronizing carbs and throttle bodies, it is easiest to only focus on comparisons between neighboring values.***
- The RPM readout is only accurate on warm engines that have one piston per carburetor or throttle body.

Troubleshooting Tips:

It's always a good idea to sync after adjusting your valves. Ideally, you should balance carbs/throttle-bodies after you have serviced the rest of your bike.

Air leaks between the air box and carbs, carbs and cylinder head inlets, exhaust system, or any blockages in these systems will affect the carb/throttle-body balance and should be rectified beforehand.

If one carb has a significantly different reading to the others there can be several reasons:

- Make sure the supplied vacuum hoses are not kinked, flattened, or loose.
- Ensure there are no leaks in the intake ducts or joints.
- There may be another engine fault or engine compression leak.

If you use an extension fuel line with a remote tank keep it roughly at the same height as your fuel tank would normally be.

The carbs/throttle-bodies are very sensitive to adjustment. Even adjusting the locknuts, if any, can affect the readings.

Warranty:

The Digi Sync digital manometer is guaranteed against defects in materials and workmanship for a period of one year from the date of purchase. We will repair or replace the equipment (at our option) provided you have followed these instructions and not abused your device.

