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WBo2 2Y2 Frequently Asked Questions

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Basic Info about DIY 2Y2, and construction

Q: What is **DIY**?

A: DIY means **Do It Yourself**. You get a complete collection of parts (called a **kit**) from us, some instruction (found on [these pages](#), see the [menu](#) above), and there's a [support forum](#). You supply a **soldering iron** (and other basic tools you probably already have), **good quality solder** and most importantly, your existing [construction skills](#). You use your skill to build and test the kit. What do we do? Hopefully not very much because you should have all the skill and information from this site before you start. And if you run into trouble then you can ask the [support forum](#) for help. As much as we love helping people, and the fact we offer a DIY kit is testimony to that, we don't have the time to hold your hand when you build our DIY stuff!

- If you don't have the skill to build it **already**, then **don't** buy the kit! (if you bought it already, [sell it on eBay](#)).
- If you expect **someone else to build it** for you, make sure they're going to use the unit themselves otherwise you'll almost certainly have problems down the track when they **lose interest**.
- We offer **pre-built units** with similar features if you **like the 2Y** but are **hesitant**.
- If you have to ask *"do I have the skills"* then **you don't!**

Q: How is **2Y2** different to the **2Y1**?

A: 2Y2 has a **functional** 4-digit display ([sold as an option](#)) whereas **2Y1**'s display used a Toshiba part we could not obtain in **DIP** format. If you still have an unconstructed 2Y1 then we still have the [2Y1 instructions on-line](#) but note that the **2Y2 display option WILL NOT WORK ON the 2Y1**.

Q: The **complete 2J controller** costs a similar price to the **DIY 2Y2 controller** - why would I bother building a **DIY kit**?

A: 2Y2 uses the *"professional"* circuitry found in all our models EXCEPT the **economy 2J** range - This reason alone is enough for the savvy constructor; a box of **chocolates** for the price of a bag of **jelly beans**! But *DIY is not for everyone*, and **Tech Edge** has always supported DIY (in fact, that's how we started in wideband, producing a DIY kit for the L1H1 controller back in 2002) and we hope to support DIY into the future by producing affordable kits that people like constructing, and which have a high chance of success because we provide good documentation and a [WBo2 community forum](#) where constructors can help each other.

Q: **2Y2** was **not available** for a while - what was the problem?

A: 2Y2, although based on the 2Y1, 2Y2 took us a long time to finish documentation for, this was caused by *not enough man-power* being available in a time where **Tech Edge** was physically restructuring (and this activity goes on while the world's financial systems make our target market less decisive about purchasing). Also, we had the documentation about 90% complete for a few months while we battled *multiple employees being sick* for extended periods. We apologise for these delays.

Q: Where can I get information about **2Y2**?

A: The best place to start is the [2Y2 kit construction page](#) where there are links to resources devoted specifically to **2Y2 construction**. Each page on our website should have a **main menu** at the **very top** of the page, and many pages also have **sub-menus** located below the **main heading** (this is the **[FAQs]** sub-menu page from the Products -- **[2Yx]** main menu). We have found there are some non-standard browsers that don't render out website correctly - we recommend either [Mozilla Firefox](#) or [Google Chrome](#) and *get rid of your non-standard Microsoft Internet Explorer* (Microsoft would have you believe they [invented the internet](#) - what rubbish! - (that said, I do support [Bill Gates' Philanthropy](#))).

Q: Why do you call it a **Lambda meter** (rather than an **AFR meter**)?

A: 2Y2, like all our controllers, measures an electrical current that "neutralises" oxygen in the exhaust. It is actually measuring either the **excess** (*for lean mixtures*) or **deficiency** (*rich mixtures*) of oxygen compared to the **20.9% oxygen** in the atmosphere. So it is measuring the **ratio** of oxygen in your exhaust compared to 20.9% oxygen. This is a ratio of two oxygen levels (and is called **Lambda**) whereas **AFR** is a (*mass*) ratio of **air to fuel**. Don't worry, 2Y is effectively measuring AFR, but because 2Y doesn't know what fuel you are using (*nor does it care*), you have to tell 2Y (or rather **2Y's display**) the type of fuel you're using by supplying the **stoich AFR** for your fuel - this is 14.7 for unleaded (well, it can vary down to 14.2 for E10, but that's another story!).

Just to confuse you (testing if you understand the Lambda vs. AFR concept!) - Engines run well at a particular Lambda - you can vary the type of fuel (say from unleaded to E85) and so you must also change the amount of fuel you supply (thus the AFR changes), but you'll find when the engine is running well with the new fuel, the Lambda will be very similar as for the original fuel (but the AFR is quite different!)

Just remember **AFR(x) = Lambda(x) * AFR(stoich)**, where **AFR(stoich)** is the stoich (where Lambda = 1) value for the fuel and **AFR(x)/Lambda(x)** represents the **AFR/Lambda** point you wish to convert between.

Note, the [2Y1 FAQ](#) has quite different information which may (or may not) be worth looking at.



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