



## Fitting Guide/Instructions

### THE WELD "IN"



To be fitted preferably, on the inside of a bend, or, in the primary divergence cone of the exhaust system (primarily for very high performance engines ie, CIK reed and rotary engines). It must be sited far enough from the engine, so as not to get too hot, but as it needs to reach 300 to 350 degrees C or higher, ( not too much higher), it can't be too far away.

**FOR GENERAL KARTING USE**, suggested fitting positions in photograph format, are available on the web site. For other usage and fitting, refer to [www.kartbay.com.au](http://www.kartbay.com.au), or if there is no example, email [gduff1973@internode.on.net](mailto:gduff1973@internode.on.net), and allow a few days for an answer, also supplying your name and a contact phone no.

### A basic "rule" for Karting applications is:

- Draw a horizontal line, with text, on the inside of the bend.
- Draw another line 10mm above the first line, and as near to the flex end as possible, site the weldin on the upper line, taking care that access is okay for the welding method to be employed.
- An 11mm hole is first drilled in the exhaust header, (or a 25mm hole in a muffler), having made sure again, that access for welding is possible all around the weldin.
- Site the weldin over the hole, central, and weld on. On normal steel headers and mufflers/pipes, bronzing is the preferred method, but TIG is best for stainless pipes/headers.

Filing of the weldin to fit the weld face is not always beneficial. Depth of penetration of the probe is a consideration, especially in a header, and it is not always necessary to insert the sensor it's full distance. The sensor is temperature dependant. Most weldins are supplied "stepped" and can be fitted into a 25mm hole. This is only normally done when fitting into a muffler. Refer to tech help, if unsure. For unknown applications, the FITTING SITE may be determined by using an INFRARED temp unit, which are now easily purchased at a reasonable price. This needs to be checked whilst running under load. 300-350C is a desired temp.





## THE SENSOR

PLEASE REMEMBER the sensor is a fragile item, and should be handled with care!  
For 2 stroke use, the sensor is "modified", but for 4strokes, the factory shielding must remain, so at time of purchase, it is easier to be supplied the correct sensor at point of sale. Where temperature is a problem, i.e, not hot enough at the siting position, sensors are available that have "preheating". As these require a 12 volt supply, they are only used in larger engines, with their own charging system

## THE GAUGE



The Gauge is to be sited where easily seen, but preferably not with the LED's pointing directly towards your eyes, as they are VERY bright.

For use at night, tape or a deflecting shield, needs to be applied to cut down the light intensity.

The bright LED's are necessary for certain conditions i.e. the sun over your shoulder. For a kart, on the steering wheel, above the "other" data system, is an ideal placement.

It is not necessary to use the mounting bracket supplied, as the unit is small enough to mount almost anywhere, a simple matter of "sticking" the velcro to the required mounting position, and attaching the gauge.

A zip tie around the gauge unit is a safety precaution to ensure the secure attachment of the unit. The electronics of this unit are very robust, and failure of the electronic components is very unlikely.

The integrated circuit, the "chip", if faulty, is easily and cheaply replaced. All other exterior components, cables etc, are also replaceable, with a minimum of technical skills, and a minimum of cost, making the unit easily and cheaply fixed. A fault/remedy guide is available on the web site.

There are 9 high brightness LED's along the bottom of the gauge, going from the LEFT, 4x red (lean), 2x green, and 3x orange/amber (rich).

Check in the tuning hints for further info.

## THE SENSOR LEAD

THE SENSOR LEAD is on a kart, is run around the left side of the kart, away from all ignition sources.

The Sensor Lead is mounted and sited away from IGNITION interference, and on small race equipment, the sensor and it's leads, should be kept as far as practically possible from ignition leads and rotors, as high voltage inductance is not a desirable item for integrated circuitry, and careful siting almost eliminates electronics failure.



## THE BATTERY PACK

The Battery Pack is a sealed unit, comprised of nickel metal hydride batteries, for long life. The pack is supplied part charged, and requires about 4 hours on the charger. Velcro is supplied to aid fitting, but in a bad vibration or ride situation, additional security can be obtained by adding a "ziptie" around the unit. The pack will last many hours, and charging on the way to and from the track, is usually enough to keep the pack "topped up".

## THE CHARGER

The Charger is made to plug into a cigarette lighter socket, (or into the battery adaptor that is supplied with the unit). It is important that the charger is plugged into the power source first, and the telltale led is illuminated, before plugging in the battery pack, as the battery pack on it's own, will also light the led.

The power source can be your car cig lighter socket, or a 12 volt battery, via the adaptor.

The charger runs quite HOT, but as the pack nears it's peak charge, approx 5.7 volts, it will cool off.

The charger is designed to decrease the charge rate near peak voltage. It is not recommended to leave the battery pack on the charger indefinitely, but a full day shouldn't cause a drama.

Approx 16 hours are required to charge from dead flat.



## THE MOUNTING BRACKET

The Mounting Bracket is supplied as a convenient place to mount the gauge unit if there is not a suitable location. It can be, for example, be filed /ground to fit below an Alfano, therefore mounting the gauge higher on the steering wheel.