



HI.PREMA, High Precision Manometer

Pressure of karting tyres is a very important parameter for fine-tuning a kart; the right pressure enables you to make the most of the tyres and avoid excessive wear during a race. So, you can see how pressure is really an important factor for kart set up. In particular track conditions, the right tyre pressure helps you to get winning results, differently it can ruin the tyres in a matter of a few laps. Just think, when you test the vehicle on a wet circuit. You must have different pressure for such conditions. Here you work with very low tyre pressure and with a 0.01 bar difference between each wheel; when the tyre is cold, different pressure is set so as to get best pressure and the same value when they've heated up, so that the wheels work in the same way and don't unbalance kart response. From such simple ideas Prisma Electronics has designed a digital gauge that enables you to get the above-mentioned set up accurately. A letter with 0.01 bar and a chance to memorise on a display the pressure values when the tyre is cold and after having been warmed up for a total of 15 tests. This way tyre pressure can be kept under control during test runs and you can see kart behaviour immediately. This is a very practical solution during tests; for example when the kart returns to the paddock the driver can check the pressure himself. All you have to do is memorize it in the manometer and after the mechanic can assess how they've worked. Another important feature is the calibration; the Hiprema pressure gauge doesn't need any calibration. Each time you switch it on the software in the manometer carries out the operation automatically and accuracy is checked, this thanks to electronic modern technology and a pressure sensor suitable for motor sport application. www.prismaelectronics.com

Figura 2



Figura 3

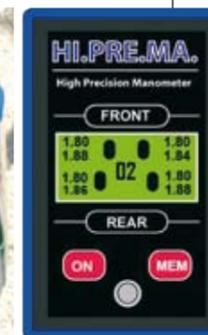


Fig.1: Hiprema Pressure Gauge
Fig. 2: measuring pressure with a pressure gauge - Fig. 3: Example of pressure assessment on gauge.



The first time you pump up the tyres after having mounted them onto the rim is most important (also for safety reasons). Use a belt around the rubber to avoid exceeding 4 bar, be very careful not to stretch the ply.

safer value, say one or two tenths of a bar above the pressure value that we want to use. So the tyre will have time (even if not much, it is however useful) to relax and we can see a more accurate working pressure. On the contrary, if we keep an eye on it, we'll see that when the time comes to adjust pressure definitely, the given pressure will most likely be different from the pressure we first set. Doing this, we can be sure that the pressure used is the required pressure but what's more it will be the same for each tyre, something that will worsen kart behaviour even more than if you used the wrong pressure.

PROFESSIONAL INSTRUMENTS

Now that we have seen how important it is and what we could say almost a "delicate" job it is to set the right tyre pressure, we can understand the importance of the instruments used to get accurate results: manometers. As we are talking of high precision to half a tenth of a bar (some are very accurate to two hundredth) and around 0.5

bar, it is understood that this time too it is always better to get professional instruments. So try avoid getting manometers sold at ironmongers' or the shop round the corner. It's not just by chance that tyre manufactures like Vega have their own list, even a manometer specifically made for karts, and very good it is too. You can find all the tools and devices you need at shops specialised for selling karting accessories, here you will find a wide range of manometers, or pressure gauges, even digital, with a scale that goes up to 2, 2.5 bar (just what we want) and cost varies from just over 100 euro for the best with digital reading. The modes with hands sunk in glycerine avoid "banging" at the end of the scale, which could alter accuracy in reading. This is something that could be avoided anyway by being very careful, and let's never use a pressure gauge when the tyre is down "just like that" when the probability of having pressure way above maximum limit on scale. In this case you could use (it is better) to use the manometer or pressure gauge used at the "ironmonger's".

ADJUSTING AND TESTING

Nevertheless, in the usual situations lived by kart drivers in paddocks, it is almost impossible to find manometers that live as they would in a clinic: the bump, bangs and improper use are very common indeed. This is why it is

important to check every now and then that the gauging is correct and true. To do this though, you don't have to go to a recognised international set up for weight and measures, all you have to do is a parallel match, measuring the pressure of a tyre with our pressure gauge and our friend's pressure gauge. If the results are not the same watch out. Do another countercheck, and the see if you can adjust with the measures that the instrument we have offers. For example. Often the hand has a register at the bottom, turning the screw we can correct any error there may be, Already if when not working the hand aren't exactly on the zero we should start having some doubt. Also, you can find cheaper pressure gauges, where, due to the weight of the mechanism and the needle, you can change the measurement according to the way hold them, their tilt. In this case we can see from the start when the needle is exactly on the zero and hold it in that position while measuring the pressure. To conclude, even if we were really convinced about how important tyre pressure was, maybe we didn't think that also the way to measure the pressure could be an important operation that needs to be done with great care and, some experience in mechanics can make all the difference. And if you still aren't convinced, try to see the reaction your friend has when compare his manometer and yours, if there should be difference in reading: he'll be the first to go and check, perhaps even panic, to see that it isn't his that's wrong...

IT IS IMPORTANT TO CHECK EVERY NOW AND THEN THAT THE GAUGING IS CORRECT AND TRUE... ALL YOU HAVE TO DO IS A PARALLEL MATCH, MEASURING THE PRESSURE OF A TYRE WITH OUR PRESSURE GAUGE AND OUR FRIEND'S PRESSURE GAUGE

A pressure gauge for karting is a highly accurate instrument and a very delicate one too: it must be able to measure tiny differences around 0.02 bar, but if it isn't used properly it can ruin setting. Some models come with a glycerine bath (right), which helps the needle stay in place.



Zeroing manometer

Some pressure gauges come with zero adjustment or setting, that is, a screw that enables you to change the position of the needle respect to the zero to get small movements of the same... How many times have you happened to see a manometer where the needle starter moving before or after the zero? Considering how important tyre pressure is in karting, where even a 0.1 bar makes the difference, this test is

fundamental. The adjusting screw is usually situated close to the pin that holds the needle. Remove the glass on the instrument to adjust the position of the needle (usually on these instruments with adjusting screw) there is a ring nut that turns, and which holds the glass in place) and adjust the screw so as to bring the needle back to its start position. It is an easy operation, which allows you to carry out precise measuring.



This is what a pressure gauge whose needle doesn't match zero looks like: the reading will be wrong!



Turning the adjusting screw used for zeroing it, the needle can be put onto the zero on the device. This is what the needle position should be like after having adjusted it.