

ANY QUESTION

ANSWERED ✓

If we don't know the answer, we'll find the person who does

Q Help, I'm running out of brakes

While I don't pretend to be any kind of Marc Marquez, I have started attending trackdays on an old 2002 Yamaha YZF-R1 I bought for the purpose. It's been a great education for my riding, but now I find that it doesn't take long for the braking power to start tapering off, with the front lever getting closer and closer to the handlebar. I've already fitted braided hoses, and that helped a little – but it's still not enough. I have thought about fitting a more modern front end, with radial calipers and a master cylinder, but it's hard to justify the expense. Any ideas, please?
Kev Clark, Surbiton

starts to get hot (as it will do on-track) and the small bore cylinder can't pump enough fluid, leading to longer lever travel and less braking.

Yamaha themselves recognised the problem, and later went to a 16mm master cylinder. That's now a fairly average size for a road-bike master cylinder, but may still not be enough for track riders. You would probably do better with something around 19mm, in a more efficient radial design than the conventional master cylinder on your bike.

A variety of aftermarket options are available – and if you go down this route it'll be considerably cheaper than replacing the whole front end, with the hassles that can bring – even supposing the new front end's master cylinder is up to your requirements. At Venhill we offer a variety of master cylinders in different sizes, including Frando at around £188 and Magura from £300.



The R1's brakes have room for improvement

A Answered by Max Adams, Venhill
Assuming you've got quality track-spec pads and your calipers are in good condition, the next step is your master cylinder. The early R1 had a 14mm-bore master cylinder, which gives good feel and converts smaller lever input into good braking power. The problem comes when everything

KIT CHOOSER

Q I want a classic-styled helmet

I have a new Harley, and would like a new helmet to go with it. I'd prefer something with classic lines in a full-face style. What's out there?
Rab Fallon, Leith

(£219.99). That shape is also available in carbon fibre (£349.99). I've seen a prototype of Held's new lid, which should cost around £166. Another imminent option is the AGV X3000, which has the looks that made the brand so popular in the '70s, and goes from £299.99 up to the limited-edition Ago rep at £549.99. As with any lid, comfort is paramount, so see if you can find somewhere to try them on. A classic look doesn't have to mean a classic fit!

A Answered by Keith Roisetter, Infinity Motorcycles
If you're hankering for a classic look with a classic name, the Bell Bullitt (£399.99) should be up your street. Perhaps more of an 1980s car-racing look, but almost as classic is the Nexx XG100 Purist



£399.99 Bell Bullitt

£219.99-£349.99

£299.99-£549.99

Bell Bullitt

Nexx XG100 Purist

AGV X3000

Q Why does my MoT tester fail my plate?

It seems to me that every other bike on the road has a small number plate – replacing the massive, ugly, blackboard-sized things fitted as standard. However, my MoT tester refused to pass my bike with the smaller plate I had made for it. Is he picking on me?
Darren Kenning, Worcester

A Answered by Pete O'Dell, The Motorcycle Works
Rather than singling you out, your tester has one eye on keeping his licence to conduct the Driver and Vehicle Standards Agency test. While an MoT tester has an amount of discretion it doesn't extend into this area, as number plate regs are set. If your tester passes you on an illegal plate, he could have his test licence taken away.

A bike plate must have characters 64mm tall and 44mm wide (except for number 1 and letter I). The font must be 10mm thick, with 10mm between characters. The vertical space between age identifier and letters must be 130mm, and there has to be an 11mm margin around the whole lot. You can see the size of a plate is set and it's pretty large. Many riders change their plates once they are away from the test centre, but you're taking your own chances with the police.



Yup, this number plate size is ugly as hell – but it's also the only legal option

Q Why is bike oil so expensive?

Why, when I can get five litres of oil for my car for less than £20, am I paying £40 for bike oil? Can't I just put the former in the latter?
Brian Falconer, Bristol

A Answered by Saul Towers, Flitwick Motorcycles
If you put cheap car oil in your bike you're asking for trouble. For example, the friction modifiers used in car oils will cause a motorcycle's wet clutch to slip, and it goes on. It is vital you use the recommended oil for your bike, so you will sadly have to swallow the cost. Besides, not all car oils are cheap! Ask anyone who owns a performance diesel, for example.

MCN LAW

Your legal questions

Q Run off the road – who pays?

I had a smash after I lost control of my Honda Fireblade because some moron ran me off the road and fled the scene. I had whiplash injuries, a broken collarbone, and damaged my bike and leathers. I put a claim into the Motor Insurers' Bureau (MIB) because I read something you previously wrote about them. They've come back saying they reject the claim on the basis that just because the driver didn't stop doesn't mean they were negligent in causing my accident. He swerved into my lane, causing me to take evasive action. What do you suggest I do?
Dave Birt, Suffolk

'If you can establish driver negligence, you should be fine'

A Government body the MIB will compensate victims of negligent, uninsured and untraced drivers. For a claim to succeed, you must persuade them you sustained an injury as a result of the negligence caused by or arising out of the use of a motor vehicle on a road or other public place. The 'user' can be a driver, employer or principal on whose behalf the vehicle was driven. A 'road' is defined in the Road Traffic Act 1988 as "any highway and any other road to which the public has access". 'Highway' includes a public bridleway or footpath. If you can establish driver negligence, you should be fine. The MIB is right that the fact the driver left the scene is not evidence of negligence in causing the accident. But if you were established in your lane you were clearly there to be seen, so the driver either did not look or did not look properly and undertook the manoeuvre unsafely. You may want to get a solicitor to look at the papers, as there is a six-week deadline to appeal the rejection.

Andrew Campbell
Solicitor and author of the MCN Law column for the last ten years

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EXPERT'S GUIDE TO

CHASSIS GEOMETRY

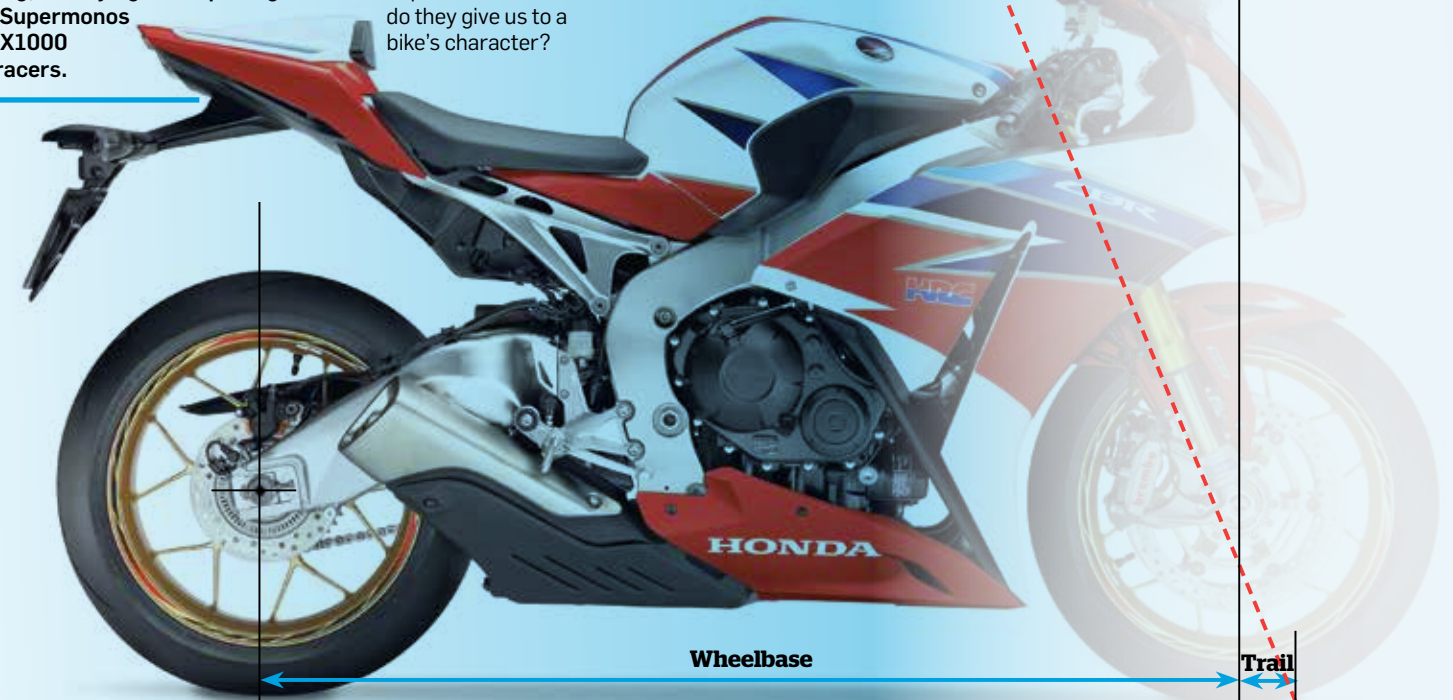
You at the back of the maths class – pay attention



THE EXPERT

Si Martin
Si has a TEC Diploma in Motorcycle Engineering from Merton College, and 30 years' experience building, modifying and repairing bikes from Supermonos to CBX1000 café racers.

Riding by numbers; the vital statistics that define your ride. Wheelbase, rake and trail are usually included in a bike's spec sheet, so they must be important – but what clues do they give us to a bike's character?



Now, this would have made school geometry lessons interesting

THINGS YOU NEED TO KNOW...

Wheelbase

This is the length of the motorcycle as measured between the centre of the tyre contact patches, directly below the wheel-spindle centres. It's a nominal figure that varies as fork compression moves. It also varies with the arc of the swingarm. In general terms, long bikes (up to 1600mm, at the touring/cruiser end of the spectrum) are prioritising stability, and short bikes (typically around 1400mm) sacrifice some of that stability for agility.

brakes and the front end compresses, steepening the angle. Accelerate, and the bike squats on its rear suspension while the steering angle relaxes.

Yoke offset

This refers to the yoke assembly that connects the forks to the steering head, and is the distance from a line drawn between the fork centres, back to the steering stem centre. If the forks are parallel with the steering stem and the wheel spindle is mounted centrally in the fork leg, this is also the wheel

offset. In racing, altering offset via adjustable yokes (or simply swapping yoke sets) is often a crucial part of the set-up procedure.

Trail

A line drawn down through the steering pivot will hit the road forward of a line drawn vertically through the front wheel spindle. The distance between these two points is trail – literally, the distance by which the front tyre contact patch 'trails' behind the steering pivot axis.

When a front wheel is deflected, by either



An exact science? A lot of calculations went into this

irregularities in the road or rider input, the side thrust generated on the contact patch 'pushes' the wheel back to its aligned position, behind the steering axis – creating the bike's inherent straight-line stability.

However, when a rolling wheel is lent over, the tyre's rounded profile causes it to follow an arc in the direction of lean. It is the balance of these contradictory forces that underpin the effect and feel of steering inputs into a motorcycle.

The steering characteristics are primarily dictated by tyre profile, trail and rake angle.



Yoke offset plays a vital role in your handling

Next week

Don't be baffled...

