From: Randy Norian <rg500delta@mac.com>
Subject: **Re: Port edges**
Date: July 5, 2005 10:52:04 AM CDT
To: jim lyon <jdwlyon@yahoo.co.uk>

here's what I was told-

think of a bullet- aerodynamics. Ideally, you'd like a bullet to have a long, tapering tail, like a streamliner.

But, we don't have room for that. The bullet can only be so long. you taper the tail of the bullet inward, and then you just chop it off, sharp. the air detaches cleanly from the surface of the bullet (as it ends suddenly) and continues to close behind the bullet.

That's a boat-tail bullet, are you familiar with the shape?

common sense may tell you that it'd be better to round off the tail of the bullet, like a porsche 928, or like an egg. WRONG!

the air will stick to the surface of the bullet (laminar flow) as long as it can. it'll start to round the corner.. however, it cannot follow the rounded shape for long. it detaches at some point, and you get a real nasty turbulent flow behind the bullet. (ie: a musket ball)

the joke was, the porsche 928 was more aerodynamic going backwards, than it was going forwards

thing of a Honda CRX. it slopes like a bullet, then chops off sharply at the backside. that's not a mistake, that's the most effective thing to do, when you cannot make a correct closing shape.

Now apply that to a port. The port that ends suddenly, airflow detaches cleanly from it and continues to flow into the cylinder, as it was aimed.

If you put a big radius on the port exit, the airstream will attempt to stick with it, and to round the corner. You get a nasty, 'dirty' spray coming off the port. Better to end a port with a fairly sharp edge (while still being nice to rings) It doesn;t take a huge chamfer to keep your rings alive. It is very important to keep them clean, dirt wears them and makes their edges sharp, and they become much more likely to snag. So use a good air filtering system!

I have this on pretty good authority from a couple of sharp fellows.

Randy N

On Jul 5, 2005, at 9:24 AM, jim lyon wrote:

> Hi Randy,
> Seeing as it didn't create even a ripple when
> I posted it, as seem quite clued up, perhaps you might
> be able to help on this?
> Cheers,
> Jim
>
> Regarding one of the Gordon Jennings' articles on
> Erik Johnson's website.
>
> http://edj.net/2stroke/jennings/

"Top end Rebuild " pdf on the 4th page down (P98 of the article, left hand column, 2nd para [sorry, but it won't copy & paste!])

@ one point Gordon Jennings was saying that he really didn't care that much for port chamfers as while it was @ a less extreme angle, chamfers still produced a sharp edge which damaged rings. GJ went on to say that he preferred to put a 1 m.m. radius on the port edges, as he felt this also gave a stronger wave action. Though he admitted that, from the point of view of longer ring life, a slightly larger radius might be preferrable. Anybody got any experience-views on what would be preferable for a fast road bike, whilst still retaining good ring life? - TIA

Cheers,
Jim

Randy Norian

come to the 2005 Autobahn Rendezvous! Details at
http://homepage.mac.com/rg500delta/autobahn2005/

RG500Delta web site
http://homepage.mac.com/rg500delta/RandysAddiction/

RG stuff and other junk
http://homepage.mac.com/rg500delta