

VFR Discussion → VFR TECH → Modifications



5th Gen Frankenviffer

Started by redmarque, Jul 27 2007 08:35 AM

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SEBSPEED

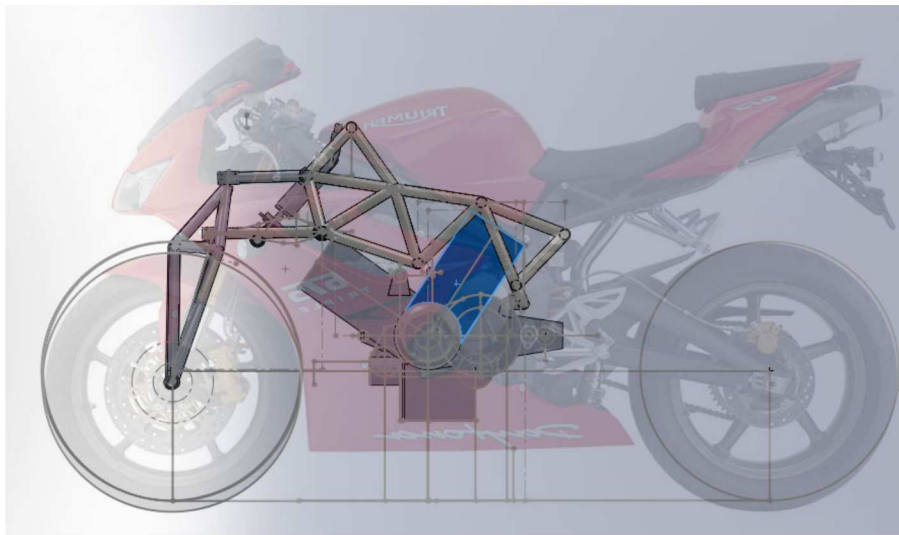
Posted 14 October 2009 - 05:24 AM

Super idea Rob, thanks for bumping this! Is the bike legal yet? Roadworthy at least?

redmarque

Posted 19 October 2009 - 04:31 PM

Easy answer... NOPE... BUT after learning alot from MKI
MKII HossackViffer is slowly developing in 3D (big learning curve!)



Featuring fully revised trellis frame with new engine mount design
new Hossack suspension geometry and fork design
revised/calculated front shock location using CBR954 model (Tony Foale has updated his Funny Front End software to include shock calcs)
Existing engine, swingarm, wheels, brakes, cooling system and electrics will be transferred to MKII (code named NADA)

Been trying to keep my head down reading:

[The racing motorcycle: A Technical guide for constructors Vols 1 + 2 \(http://www.amazon.co.uk/Racing-Motor-Cycle-Technical-Constructors/dp/0951292927\)](http://www.amazon.co.uk/Racing-Motor-Cycle-Technical-Constructors/dp/0951292927)

I had hoped to slip on further with MKII before anyone noticed 🙄 but then again! 😊

Red

Pete McCrary

Posted 19 October 2009 - 04:44 PM

My 2¢ from working with a guy with an A&P ticket:

4130/4140 should be gas welded (oxy acetylene) or TIG'ed. 4130/4140 is a fairly porous steel and has been known to crack if you braze it. The brass will get in the pores of the steel and expands at a greater rate than the steel.

Personally, I like brazing. My one golden rule when doing any welding (regardless of the method) is to treat the pieces just like you're getting ready to paint them. i.e., make sure they are practically antiseptic.

The more I mess with MIG, the less I like it. You just get too much distortion with the sudden application of molten metal. Gas welding or brazing heats things up nice and evenly.

Given any thought to silver solder like they use to do on the Rickman frames?

Tony Foale seems to be a fairly accessible guy. When I bought his software and didn't get the unlock codes immediately, he called me himself and asked if there was a problem.

Looking good!!!!!!!!!!!!!!!!!!!!!!

One last thing as far as a little "trick" for making parts by hand. I do AutoCad all day. I don't have access to a CNC machine. What I do quite often is draw the piece I want to make, and then print to Avery 5353 paper. 5353 is 8½" x 11" sticky back paper (like labels). Stick your drawing on whatever you trying to whittle down or drill and have at it. You can get the Avery label paper at any Office Max or Office Depot.

redmarque

Posted 19 October 2009 - 05:07 PM

Thanks Pete, I hadn't planned on using 4130 - just going to stick with 1.5mm CDS mild tube reasoning being that it will bend before it fractures.

Also will be hopefully Tig welding myself this time but using a fixture/jig that will allow almost all the welding to be done without taking it out! Had loads of distortion and miscalculation on my part last time - hopefully the new engine mounts will allow any distortion issues!

Yes i've been using the poor man's CNC too! - but use 3M spray mount to hold A4 paper onto the metal once printed from CAD

MIG - I call it "messy" mig! not a patch on Tig for structural welds - fine for car bodies etc though

Tony's a nice guy - from my experience if your going to send him an email regarding chassis,suspension or anything else make sure you've done your homework first!

Veefer800Canuck

Posted 19 October 2009 - 07:21 PM

Thanks for the update. But the Frankenviffer is stating to seriously look like a Daytona 675.

.....not that there's anything WRONG with that..... 😊

redmarque

Posted 20 October 2009 - 03:47 AM

veefer800canuck, on Oct 20 2009, 01:21 AM, said:

But the Frankenviffer is stating to seriously look like a Daytona 675.

Yes - a new direction... the 5th Gen lump maybe fairly big and heavy by modern standards, but I'd like to see handle in a smaller package like.. a daytona 675!

If a suitable Eaton supercharger appears on Ebay then i'll be incorporating that too - with no standard airbox and tank to deal with placing can be thought out better.

Bodywork is the other reason - making bodywork is a very lengthy process, this way standard fairings should fit with modification.

Red

SEBSPEED

Posted 20 October 2009 - 05:11 AM

Looking nice Red!

Do you mind sharing what you learned about the chassis & handling from MKI, now that you're admittedly revising it? 🤔

Meaning, did it work? Work ok? If not, what bad things did you notice?

redmarque

Posted 20 October 2009 - 06:36 AM

Good question Seb. 🤔

I think the lessons learned from MKI are:

1. In frame design and construction you must try and minimise and allow for distortion in the design.
2. Make sure that everything critical i.e. that the steering axis and wheel alignment are spot on and perpendicular to each other.
3. Creating a fixture/jig that will allow you to get into weld tight spots without needing to be a contortionist.
4. That the shock absorbers used are from a similar application to which you are going to use them. (Taking into account there travel and damping characteristics)
The CBR 600 F4i shock I used for the front was a direct acting one therefore over damped for a linkage system.
5. Source and measure everything component before starting construction - if in doubt re-measure several times.
6. When selecting materials for structural parts use the correct grade and condition (heat treatment) for the application. (John Bradley's books go into great detail on this)
7. Leaving things till later only causes more problems for instance the steering head tube and bearings I used from a Kawasaki GT550 had a specific length limiting the Hossack geometry and forcing the handle bar location to be higher than I would have liked. This also changed the anti-dive effect. When brakes were applied I couldn't discern any dive which even for my limited experience felt very strange. MKII will have 30mm of dive before anti-dive kicks in.
8. Packaging everything around the engine and location of heat sensitive components can be a headache too. I now have great respect for the big manufacturers in getting everything to fit somewhere!

Things which I liked about the bike were how light it felt compared to my stock 98 and was very stable even with 15 Degrees rake. MK II will be 18 Degrees rake, purely to remove the need to have the drag links back to the handlebars.

Veefer800Canuck

Posted 20 October 2009 - 11:50 AM

Wow, that's a long laundry list!

Good luck with Ver 2.0! Post up now, so you can have a cheering section to spur you along!

JES_VFR

Posted 21 October 2009 - 10:00 PM

But I thought the point of this whole exercise was to give the VFR the Ultimate alternate front end. I thought the challenge was to build up something special around a mighty VFR motor, not just slap something on an I2/3/4/5/6 whatever motor.

I know a custom bike builder in the area, that told me the following.

"Vtwins are easy to make choppers out of their a dime a dozen, Inline fours are next since once you do one the next one is the same, but the most challenging bike to customize is a V4. Do one of them right and you have something really special"

I personally feel that he is more than right.

Quasiff

Posted 01 December 2009 - 02:52 PM

redmarque, on 20 October 2009 - 06:36 AM, said:

Good question Seb. 🤔

Things which I liked about the bike were how light it felt compared to my stock 98 and was very stable even with 15 Degrees rake. MK II will be 18 Degrees rake, purely to remove the need to have the drag links back to the handlebars.

My first post here. Hope there's no protocol about intro's that I'm missing.

The drag link question. I made a prototype experimental thing which required a large change in angle of the steering head with bumps and a rearward location of a fixed axis handlebar, so came up with a drag link system I called the Middleton Link. It effectively eliminates bump steer in a Hossack where the handlebar is not close to coaxial with the steering axis. Using it would mean you can use whatever rake angle you like and any handlebar position within a very large range, even a different handlebar axis angle. The only stipulation is that both axes should be arranged to be on the vertical centre plane of the bike when the steering is straight ahead. If you're interested I can send you a picture of how it works, but I guess that I can't send a PM having only one post. An email address would do.

I plan building a Hossack myself for my track only special (currently has conventional cheap tele forks) and will use the Middleton Link here too if I get around to it.

redmarque

Posted 05 December 2009 - 05:54 AM

Is that you Arthur? How's your GPZ hossack conversion designs coming along?

Edited by redmarque, 05 December 2009 - 05:55 AM.

Quasiff

Posted 05 December 2009 - 06:13 AM

redmarque, on 05 December 2009 - 05:54 AM, said:

Is that you Arthur? How's your GPZ hossack conversion designs coming along?

That's me. All I have is 2 TRX250 quad steering ball joints. No further on with the design due to other priorities.

Do I know you? I recognise the Redmarque name but don't know where from.

redmarque

Posted 05 December 2009 - 06:16 AM

Quasiff, on 05 December 2009 - 06:13 AM, said:

redmarque, on 05 December 2009 - 05:54 AM, said:

Is that you Arthur? How's your GPZ hossack conversion designs coming along?

That's me. All I have is 2 TRX250 quad steering ball joints. No further on with the design due to other priorities.

Do I know you? I recognise the Redmarque name but don't know where from.

Yes Arthur i'm Andy Saunders from the Chassis list. Tell me about not enough time at the moment! 😊

jamey2466

Posted 12 May 2010 - 10:02 AM

wow that is a lot of work to that bike you do great work. iwould love to see it when it is all done. this is my 1984 vf100f that i have done. and my 1986 vfr700 hope you like them as much as i like yours

Attached Thumbnails



(<http://www.vfrdiscussion.com/forum>

/index.php?app=core&module=attach§ion=attach&attach_rel_module=post&attach_id=4852)



(<http://www.vfrdiscussion.com/forum>

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