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BStuff.com Chevrolet Beretta Owners Forum _ V6 Performance _ 3.1 V6 Mod's

Posted by: Codyisin Sep 30 2010, 08:43 PM

I realise the 3.1 isnt that great of a motor and the 3400 has ALOT more options then the 3.1 but some people just dont have the knoledge or experiance to do that kind of swap.. and some of us just dont want to or like our 3.1 to much.. personaly mine was rebuilt pretty recently to me buying it so i cant just trash a perfectly good rebuit motor that most of its abuse its seen has been from me lol

So heres my idea lets start building our pined topics the more available knowledge the more usefull we will become the more usefull hopefully the more we will draw people in.. Because lets face it latly its been PRETTY slow around here id like to see this site prospur as much as any of you..

So lets start off with this what can ACUALY be done to the 3.1l and yes 3.1 not 3100 or maybe we should put both in this thread idk

can u put 3400 intake on? if not what if u swap upper and lower? what about UPD?? (proably wrong word but the crank pully)

So lets add everything we can think of if you have time describe how to do it and then lets pin this sucker!

Posted by: Extreme Sep 30 2010, 09:21 PM

add a turbo LOL. i love my 3.1 just cuz thats what i have and it runs good and has some snot

Posted by: Extreme Sep 30 2010, 09:22 PM

i dont think you can put the 3400 intake on it without using the 3400 heads as well the intake runners are different size and shape.

Posted by: Wanako Sep 30 2010, 09:25 PM

UDP is an option. The best thing to do for these GEN-II motors is to get rid of the horrible flowing intakes and heads. You can swap in the LIM, UIM, and heads from a 3100 or 3400. That alone will give you the best gains in power. This can be done to BOTH the 2.8 and 3.1 MFI.

<http://www.domesticcrew.com/hybrid.html>

I believe that this procedure is necessary get power out of our motors. Our top-ends are so restrictive it's ridiculous.

Posted by: Model A Oct 1 2010, 07:29 AM

Re we talking bolt on's or are we talking about actual mod's?

I assume you are talking performance? I would say the first thing would be to mod the air intake system, the way the stock box "choke's" up on the intake tube is the biggest restriction the 3.1 has, my intake is 2.5" from the second the air enter's all the way to the throttle body, my Cat was the next thing to go, made the car a animal, throw's my check engine light on when I idle for along time. But the second I start driving again it goes out, and only comes back on at a long idle.

Posted by: Alan Oct 1 2010, 12:00 PM

Styluss Customs CAI

http://wot-tech.com/shop/all/gen-2-3-1-ported-manifold-set/prod_128.html

http://mrzperformance.vstore.ca/product_info.php/cPath/23_24_30/products_id/17

http://mrzperformance.vstore.ca/product_info.php/cPath/23_24_30/products_id/96

http://mrzperformance.vstore.ca/product_info.php/cPath/23_24_30/products_id/97

http://wot-tech.com/shop/all/beretta/-corsica-v6-headers/prod_251.html 😊

http://mrzperformance.vstore.ca/product_info.php/cPath/23_24_30/products_id/91

Carcustoms poly upper insert (92+)

http://wot-tech.com/shop/all/87-93-2-8/3-1-beretta/-corsica-performance-chip/prod_3.html

Will post more later. Lunchtime's over.

Posted by: Codyisin Oct 1 2010, 08:08 PM

QUOTE (Model A @ Oct 1 2010, 10:29 AM) ⚡

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bolt on/hybrids/ANYTHING that will creat hp in a 3.1

anyone got any idea how much the custom pushrods for a 3400 top end swap would be? i cant find much on it

Posted by: Wanako Oct 1 2010, 08:43 PM

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<http://www.pushrods.net/> I heard they were damn good. As far as the actual custom length, I don't know. Ask or look around on 60degreev6.com and someone there may have the answer. Come back and tell us cuz i kinda want to know. 😊

Posted by: Codyisin Oct 1 2010, 08:48 PM

QUOTE (Wanako @ Oct 1 2010, 10:43 PM) ⚡

QUOTE (Codyisin @ Oct 1 2010, 08:08 PM) ⚡

QUOTE (Model A @ Oct 1 2010, 10:29 AM) ⚡

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im all over this if it dont cost much for the push rod's im lookin at \$100 in parts

Posted by: Wanako Oct 1 2010, 08:54 PM

make sure to provide pics or you will be BANNED! 😊

Posted by: Codyisin Oct 1 2010, 09:09 PM

Imao i wonder how much time this will acualy take? the pushrods are the only thing im a little concerned about i dont know much about them but i know someone who does well atleast 4 cyl mustang motors guys a genius when i comes to them sure he could help me out

on a side note were does the front motor mount mount im pretty sure its on the head? that one was a pita to replace and get lined back to not something i wana remove again... also though it wouldnt bolt to the newer 3400 motors? or is that the lower mount that dont?

Posted by: Wanako Oct 1 2010, 10:37 PM

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negatory. it's mounted to the block itself. Then the A/C bracket and compressor itself is mounted on top of that. the motor mounts will give you no problems for the Hybrid swap.

Posted by: Extreme Oct 2 2010, 12:11 AM

swapping 3400 top end on couldnt you use the 3400 push rods ? and i just scraped a complete top end from a running engine 2 weeks ago, well blow head gasket but it was running. i kept the roller lifters/roller lifters and push rods

Posted by: Wanako Oct 2 2010, 01:47 AM

QUOTE (Extreme @ Oct 2 2010, 12:11 AM) 


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I've been told that it's not possible because our cams are not compatible with roller lifters.

Posted by: wicked-irocz Oct 2 2010, 08:33 AM

You need to order custom length pushrods. Its best to mesure them yourself.

Posted by: Extreme Oct 2 2010, 08:52 AM

QUOTE (Wanako @ Oct 2 2010, 04:47 AM) 

QUOTE (Extreme @ Oct 2 2010, 12:11 AM) 

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The cam from the 3400 wont fit ?


Posted by: wicked-irocz Oct 2 2010, 09:01 AM

correct!

Posted by: 91Beretta3.1 Oct 2 2010, 03:30 PM

the measurements for the pushrods if you want to use gen 3 heads on a gen 2 block are 6.250" exhaust and 5.950" intake

Posted by: Wanako Oct 2 2010, 04:02 PM

QUOTE (91Beretta3.1 @ Oct 2 2010, 03:30 PM) 

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Posted by: superdave Oct 3 2010, 07:55 AM

QUOTE (91Beretta3.1 @ Oct 2 2010, 05:30 PM) +

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I have 5.95 and 6.26 assuming a stock cam is used. Those should work fine with a 2030 or H260 but anything bigger will need to be measured for on the engine.

OP, do yourself a favor. When you put the gen3 heads on the gen2 block. use headgaskets for a 3.1 camaro. It'll bump the compression up to where it should be, also fixes the quench issue that gen2's have.

Smith brothers made my pushrods for around \$75

Posted by: Codyisin Oct 3 2010, 08:56 AM

cant say i ever expected a reply from super dave lol so im probly lookin at 200 all together for parts then might be worth it ill have to make a trip the the jy in a few days to see if they have any 3400's

Posted by: Wanako Oct 3 2010, 03:24 PM

QUOTE (Codyisin @ Oct 3 2010, 08:56 AM) +

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I know right? He's like a major authority on anything 60*V6.

Thanks for the info Dave. I did not know about the gaskets.



Posted by: Codyisin Oct 3 2010, 04:00 PM

QUOTE (superdave @ Oct 3 2010, 10:55 AM) +

QUOTE (91Beretta3.1 @ Oct 2 2010, 05:30 PM) +

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Which year 3.1 tho super dave? orileys has 3 differnet gaskets listed based on the year of the 3.1

Posted by: superdave Oct 3 2010, 08:32 PM

any 2.8 or 3.1 camaro headgasket will work. They are .040" compressed thickness instead of the .060 that the FWD engines use.

I have one out in the garage, if i get a chance tomorrow i'll get the part number off of it.

Posted by: Codyisin Oct 3 2010, 09:51 PM

hmm so kinda an off question does superdave have a beretta? howed he end up on here? i know hes like the authority for our motors from some old topics ive read

but thank you super dave for both replys and looking for the part number for me! i just want to make sure if i do this i end up with the right parts and being as tho i found out 3 different gaskets figured id better ask to make sure ones not bad or something! so will the 3400 head lower compression? that why the thinner gasket it needed?

so the gasket is the same for the 3.1 in the beretta's and the 3.1 in the camaro's? other then thickness? that amazes me since ones fwd and ones rwd

Posted by: Wanako Oct 4 2010, 01:31 AM

QUOTE (Codyisin @ Oct 3 2010, 09:51 PM) ☞

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I don't think Dave's ever had a Beretta. Although, he had one of, if not THE, meanest and fastest FWD N/A 60*V6 in the continent.

<http://www.motortopia.com/cars/1991-chevrolet-cavalier-4554>

http://60degreev6.com/forum/garage_vehicle.php?do=view_vehicle&id=8



Oh and Dave, I'm not very technical on motors so I ask, is using the .060" head gasket make that much of a difference than the .040"? Out of curiosity, would you happen to know what the compression ratio

would be for each? It'd be interesting to know what kind of difference it makes.

Posted by: superdave Oct 9 2010, 09:49 PM

the 60degree one is the closest to being accurate, lol

No, i never owned a Beretta but i've worked on way too many.

the 60 degree v6 engines are divided up into 4 generations, generations 1-3 (aside from the 3.4 DOHC) have the same basic head bolt configuration, water jackets deck height etc... that's why the generation 1 RWD 2.8/3.1 camaro headgaskets can be used on the generation 2 and 3 blocks. The RWD Iron head engines use a thinner head gasket because the combustion chambers on the iron heads are way bigger than the fastburn aluminum heads (48.5cc VS 26.4cc). This helped them get the compression up to around 8.9:1 which is about the same as the FWD Gen2 engines.

the gen2 FWD engines used a .060 thickness head gasket because back in the 80's, 8.9:1 compression was the norm due to the low octane unleaded fuel available at the time, the engineers weren't as concerned about quench as they should have been. Quench is the distance between the piston and the head, typically you want .040" for the best performance. Gen2 pistons go to about 0 deck, meaning they sit level or very close to it. This makes the distance between the head and piston .060". By using the thinner headgasket on a stock 3.1 you change the compression from 8.9:1 up to 9.4:1. When using Gen3 heads that have a slightly larger combustion chamber (28.6cc VS 26.4cc) it takes you from 8.7:1 compression up to 9.1:1.

If you really want to have some fun, the pistons from the RWD engines would put you up to 11.4:1 with the thinner headgaskets, you'd need a good cam to make the best use of that though, the stock one isn't the best for a performance build.

i found that headgasket in the garage but forgot to write down the number, i'll bring it inside when i get home from work tomorrow.

Posted by: Extreme Oct 9 2010, 10:14 PM

11.4:1 is too high to run with a turbo i suppose ? sounds like a good way to build a N/A motor, i may try to find another beretta cheap just to play with and build a 3.1 using the rwd pistons, and newer 3400 top end. sounds like it could be pretty mean

Posted by: ronaconda Oct 10 2010, 09:10 AM

This thread has very much piqued my interest!!!

So if running the RWD pistons takes the ratio to 11.4/1 with the thinner gaskets, what would it be with the thicker gaskets...closer to 11/1??? And what cam would you suggest for that ratio???

Posted by: Codyisin Oct 10 2010, 06:05 PM


honestly i expected this thread to fail from the begining just cause several others along these lines have but seems superdave to braught some intrest into it..!!

this is great i think its is exacly what this fourm needs more topics like this with valuble info geting pined!

thanks for all the information super dave this is fantastic! im very tempted to really tear into the 3.1.. how much horse power would a 3.1 with rwd pistons and a thinner head gasket make? what about with a 3400 top end?

at this point is it still more worth it to stap a 3400 in? hmm this make me wonder what about a 3400 with 3.4 rwd camaro pistons?

Posted by: Wanako Oct 10 2010, 07:41 PM

QUOTE (Codyisin @ Oct 10 2010, 06:05 PM) 

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My guess is with all of that, you'll be up to maybe 160-180HP, which I think is quite decent for a Gen-II 3.1. This is just a guess. I don't have any evidence at all to support.

Posted by: superdave Oct 10 2010, 08:40 PM

It's always worth it to go with a full gen 3 engine swap, but for those who don't have access to a cherry picker hybrids seem to work well. You just have to understand the limitations of the gen2 engine and either accept them or throw a bunch of money at it to try and correct them. The gen3 is a much better starting point because of the better oiling system, roller valvetrain, stronger block, cross bolted main caps and better aftermarket support.

I wouldn't use the RWD pistons with stock gen2 heads, you will see a torque increase for sure but your overall power increase will be minimal. You'll be fighting detonation under load and the engine will live a very short life.

Port flow makes power which is why the gen3 stuff is so much better. It's been a while but i seem to remember a 30% flow difference between the 2 generations. I think Wanako is correct, 3.1 with RWD pistons and a stock 3400 top end should be around 170-180 HP @ the crank. Add in a Comp 260H cam and a set of headers and 200+ HP shouldn't be a problem. Computer tuning is the key to getting the most out of it, that unfortunately is where most builds fall short.

The part number on that head gasket doesn't cross with anything i've found however i saw the 3 choices that Autozone gives. I'd go with 512SD, they are a little more expensive than the cheepies but they'll last a lot longer.

3400 with 3.4 RWD pistons and .040" head gaskets is 13.3:1 SCR, with 3500 heads on a 3400 it's down to between 11.5:1 and 12:1. 3.4 DOHC pistons have been done, they take a 3400 up to around 14:1 SCR.

Posted by: Codyisin Oct 10 2010, 08:49 PM

i had hurd superdave is the master but DAMN!!! dudes got brain's! lol so what would the setup with the 3400 and those 3 builds have for hp?

hey superdave how about i just bring my car and the beer and u build me a beast 🤪 lol jk jk

Posted by: superdave Oct 13 2010, 07:49 PM

bring beer and lots of cash.. power ain't cheap 🤪

those 3 builds, dunno.. depends on a lot of other factors like the cam, headers, porting, upper intake etc... You just need to figure out how far you want to take the engine and your budget.

I'd start small and work your way up, a 3400 top end on a 3.1 with Camaro headgaskets and a Comp 260H cam is a very solid combination. You can even use your stock exhaust manifolds at the cost of maybe 5 HP. You'll have a good running engine that will get better gas mileage and have an extra 50 HP or so depending on the tune.

It's too bad you are so far away, i have a ton of 3.1 stuff that i need to get rid of. lol

*edit, I just remembered another good option for the 3.1 or a hybrid. Stock 3100 pistons have a slightly smaller dish than the 3.1 piston and they pop out of the deck .020. If you use those with stock .060 headgaskets in a 3.1 with 3.1 heads that takes your static compression up to 9.82:1 with perfect quench. On a hybrid it would be about 9.5:1 with perfect quench as well. You cannot use them with the camaro headgaskets, there is a good chance that you'll have piston to head contact at high RPM's.

Posted by: tad72 Oct 19 2010, 11:12 PM

what would the comp be if you just used the head gasket off a camaro with sotck gen 2 heads?

Posted by: superdave Oct 20 2010, 04:08 AM

QUOTE (tad72 @ Oct 20 2010, 01:12 AM) 📌

what would the comp be if you just used the head gasket off a camaro with sotck gen 2 heads?

9.4:1 Or very close to that depending on the casting of the 3.1 head.

Posted by: tad72 Oct 20 2010, 07:14 PM

cool if i used a 260 lift cam with the comp cams 1.6 rockers and the camaro head gasket on the gen 2 motor would there be any clearance issues?
