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dave bushell

Joined: 09 Jun 2004

Posts: 231

Location: Caterham, Surrey

Posted: Fri Aug 29, 2008 7:21 pm Post subject: Loud exhaust note and hunting tick-over

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After a seizure- piston and big end - my fault entirely, I sorted out the bottom end and fitted an acquired rebored barrel and new pistons. When running the engine, the exhaust note is much sharper and twice as noisy as it was previously and it also hunts at tickover which gets worse when the engine gets hot. I have varied the fuel level and adjusted the pilot jet to no avail. There doesn't appear to be any air leaks. The engine pulls well under load. I am loathe to dismantle the engine and compare the porting to the old block. Any ideas anyone?  
Dave

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BRIAN MARSHALL

Joined: 31 May 2004

Posts: 77

Location: East Midlands, U.K.

Posted: Sun Sep 07, 2008 12:53 pm Post subject:

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Hi Dave.

Does the rebuilt engine have noticeably more compression on the kickstart? If so it is perhaps down to a "tuned" block, but the hunting is strange and not something I have ever encountered. I think that I would firstly do all the usual checks for air leaks around carb inlet stub and transfer ports, etc.. If that doesn't reveal anything the next point of call would be to check the timing isn't retarded.

Hope this helps. Regards. Brian.

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dave bushell

Joined: 09 Jun 2004

Posts: 231

Location: Caterham, Surrey

Posted: Sun Sep 07, 2008 4:15 pm Post subject:

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Hi Brian

Thanks for your reply. Yes there is more compression as I would expect from a rebored block and new pistons - the old block and pistons were well worn and the seizure occurred due to shortage of oil on one side. As for the hunting, I have done all the checks for air leaks with the exception of the glands which were in good order when re-assembled and no notches in the flywheel for them to ride up on, also there is no leakage of oil in-between the crankcases which I would have expected if there was a gland problem and the oil is being sucked from the pilgrim pump ok. Timing is spot on and the advance and retard makes no

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difference to the hunting but obviously does affect the running. The starting is good - first or second kick. No fuel starvation, tried various float heights and played around with the pilot jet. This hunting did not occur with the old block and so I suspect that the "new" block may be the culprit. I am thinking of trying a different set of pistons and block (I'm waiting for rings) plus I'll run the bike for another couple of hundred miles before doing the swap to see if it will settle down.

Dave

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Roger Moss

Joined: 31 May 2004

Posts: 369

Location: Leicester UK

Posted: Sun Sep 07, 2008 8:32 pm Post subject: Suggestions

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Hi Dave

If the block ports have been modified, then this might account for the noise if the exhaust port is opening earlier. If this is the case, try lifting the needle 3 notches, go up to 230 on the main jet from the 170 / 190 standard and try fitting a temporary restrictor in the exhaust, say about one inch to give it some back pressure. Some modern silencers are too big and free of impediment. Consider the Howarth with its more tortuous gas route and then the area open on the fish tail. They went well with this restriction.

A modern two stroke has a very small bleed but adventurous port timings. Try it and see and let us know how you get on

Kind Regards

Roger

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dave bushell

Joined: 09 Jun 2004

Posts: 231

Location: Caterham, Surrey

Posted: Sun Sep 07, 2008 9:06 pm Post subject:

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Thanks Roger - I'll give it a try. I've already jetted up to 200; I was running a 180 main jet. The carb is an Amal type 29, up a 1/16" on the standard type 6.  
Dave

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Roger Moss

Joined: 31 May 2004

Posts: 369

Location: Leicester UK

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Posted: Mon Sep 08, 2008 12:30 pm Post subject: Exhaust Restrictor

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Hi Dave We had a similar problem recently with a bike wearing a big straight through "silencer" that hunted / surged. Our guess was that a combination of an improved inlet gas flow had raised combustion pressures and was producing more energy. As original traditional ignition timing was 35 deg BTDC but with the 60 octane fuel of 1928 / 29, then the faster burning 97 octane fuel we have needs some retardation to say 31 BTDC, but if we combine this with an improved inlet flow, so that the cylinder is more completely filled, then the combustion is even faster so about 28Deg BTDC is a reasonable place to start. We do not alter ports but just concentrate on the inlet and transfer, but in the past, many folks raised the ports to improve power, but we think that this route gains power at the expense of the famous Scott torque. If the exhaust is noisy and it is possible that the ports have been lifted a bit, then the carb rejetting is a good start and if we are re jetting, we will always go a little bigger to be safe. You can always come down if it is a bit sooty. The most beneficial alteration we made was to fit a restrictor in the end of the exhaust pipe to give it a bit of back pressure. It cured the surging and made it more quiet. Do try the restrictor with an outlet hole of not more than one inch for a start and let us all know how you get on.

I know from experience with my racer that the exhaust has a very important effect on the performance of the engine and the different "Straight Through" modern pattern four stroke type silencers may just not be really correct for the Scott. For vintage era bikes, I would suggest contacting Ken Lack who is making a batch of Howerth silencers with fishtails. None of us are here forever and when Ken can no longer produce, there might be a few who regret not taking advantage while they could. Kind Regards  
Roger

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eyeguy

Joined: 27 Aug 2006

Posts: 49

Location: London and IOW

Posted: Mon Sep 08, 2008 6:08 pm Post subject: Re: Exhaust Restrictor

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Roger Moss wrote:

For vintage era bikes, I would suggest contacting Ken Lack who is making a batch of Howerth silencers with fishtails. None of us are here forever and when Ken can no longer produce, there might be a few who regret not taking advantage while they could. Kind Regards  
Roger

Again, why are we not, as a club, considering stockpiling these items?  
I rode my Scott into central London today, in the rush hour. With no spares I won't be able to do that in the future and my bike will gather dust and become useless. There has to be movement in order to gain momentum...

A tutto gas

Paul

1948 Shipley and Silk Scott special

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Roger Moss

Joined: 31 May 2004

Posts: 369

Location: Leicester UK

Posted: Mon Sep 08, 2008 7:32 pm Post subject: Howarth Silencers

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It is all about money! If the club bought the 6 sets Ken is making for stock, then Ken could use that cash to make something else and so it goes on. Made in modest batches, things are cheaper per piece, but it needs cash to fund the batches. R

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eyeguy

Joined: 27 Aug 2006

Posts: 49

Location: London and IOW

Posted: Tue Sep 09, 2008 7:12 am Post subject:

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then we should be grown up and apply a club levy. If we can afford to own a Scott we can afford, say, £100 each to help ensure the future of the Scott.

ATG

Paul

1948 Shipley and silk scott special

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dave bushell

Joined: 09 Jun 2004

Posts: 231

Location: Caterham, Surrey

Posted: Sun Sep 14, 2008 8:54 pm Post subject:

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LOAD EXHAUST NOTE AND HUNTING TICK-OVER UPDATE

I followed Roger's advice and fitted a restrictor to give a 1" dia. outlet. This eliminated most of the tendency to hunt at tick-over but did not reduce the sharpness of the exhaust noise by very much. Retarding the ignition did little except reduce the responsiveness of the engine.

Being not entirely happy with the outcome, I decided to remove the barrels and pistons and check for any "tuning" that had been carried out. (I had bought the rebored barrels and new pistons from a club member earlier this year). The

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porting on the barrels compared to my other barrels did not appear to have been interfered with but on measuring the pistons I found that, although the gudgeon pin and piston body height were normal, the deflector height was +0.040" higher than a standard piston. This obviously has raised the compression ratio, and although the pistons didn't hit the head, they did close down the spark plug gap! I don't know who manufactured the pistons, but they are very similar to pistons that I had purchased from Tim Sharp for my Brum Scott, i.e. no oil grooves around the body of the pistons. On my Brum I had to fit two gaskets to prevent the pistons hitting the cylinder head! I wasn't sure at the time whether the pistons were taller or whether the cylinder head that I had fitted ( a Scott rally purchase) had been machined down).

I can either machine 0.040" off the top of the pistons - it would be a straight cut - or fit a compression plate. I have two plates available, one 0.022" thick made of copper, and one 0.040" thick made of aluminium. If I fit the latter, do I need some form of gasket, other than the head gasket, on the other side of the plate, or should I fit two head gaskets which combined , would obviously be greater than the extra 0.040" in piston height. I don't like the sharp, and to my ears, louder exhaust note for a road going machine if I stick with these higher compression pistons.

In the mean time, I have fitted a well worn pair of pistons and barrel and the exhaust note has returned to it's original level and the tick-over no longer hunts.

Your opinions will be gratefully received.

Dave

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Roger Moss

Joined: 31 May 2004

Posts: 369

Location: Leicester UK

Posted: Mon Sep 15, 2008 10:05 am Post subject: Thanks Dave

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Grateful thanks for the progress report. All experience is valuable  
I wonder if the pistons were originally short stroke which are 0.0625" taller above the gudgeon pin but identical below.  
I sometimes have to re machine the radiused crown sides on silk pistons as they can be a bit irregular  
Kind Regards  
Roger