

Untitled

dave bushell

Joined: 09 Jun 2004

Posts: 231

Location: Caterham, Surrey

Posted: Tue Jun 24, 2008 4:48 pm Post subject: Pistons

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I've noted that replacement new pistons from our various suppliers do not have grooves cut into the circumference below the piston rings as in the original Hepolite or Scott supplied pistons. Does this mean that Scotts got it wrong and the grooves are not necessary - or is it maybe due to improved lubricants that they are no longer necessary?

Dave

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Roger Moss

Joined: 31 May 2004

Posts: 369

Location: Leicester UK

Posted: Tue Jun 24, 2008 8:44 pm Post subject: Pistons

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During the early part of the last century, it was an accepted practice to put grooves in the piston and to let the piston skirt emerge quite a way out of the bottom of the barrel. I was interested to see this quoted again in a 1914 book by Dr A M Low "A manual of the coming form of internal combustion engine" (price one shilling and sixpence) It was previously owned by T B Ward of Ward Motors, 32 Hustler Street, Bradford. and loaned to me by Titch Allen. I would suspect you are correct, Dave, to point out that the lubricants, like the fuel, was significantly inferior to that we have today. We have also learned that we should pay much more attention to the texture of the walls of the barrel, as if it is too smooth, the rings just squeegee off the oil and leave insufficient lubrication. There was a fashion at one time to consider that a good bore should be honed to a mirror finish. Very unwise. I prefer a fairly fine bored finish then to finish with a flex hone to give a cross hatched oil retaining finish and to radius the corners of the ports.

If you are interested, check out the info on the website at

[http://www.brushresearch.com/flex-hone-tool.php?gclid=CNLW\\_sd4jzQCFQqyEAod0TCGVw](http://www.brushresearch.com/flex-hone-tool.php?gclid=CNLW_sd4jzQCFQqyEAod0TCGVw)

Like many other design features on the Scott, they were just continued through the years rather than re evaluate as conditions changed.

The most interesting pistons I remember seeing came out of a Fiat 1500 and these had a series of circular grooves turned in of very big radius but shallow. The engineers amongst us can liken it to the "Broadnose" tool finish used on planers when making marking out tables. Roger

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efr215

Joined: 06 Nov 2004

Untitled

Posts: 216

Location: Leigh-on-sea, Essex

Posted: Tue Jun 24, 2008 9:59 pm Post subject:

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Once upon a time I had a 1936 manufactured DM2 National Oil Engine Co. diesel in a narrowboat, the brute weighed well over a ton, the flywheel alone weighed 300lbs., capacity was 2.5 litres and produced all of 14bhp @ 1,000 rpm whether you needed it or not!

The thing relative to this post is that the bores, (wet liners), were chrome plated on iron and covered all over in small dimples about 0.002", deep presumably for oil retention.

It seems it worked too as I have good reason to believe that they were the original liners and pistons even after having spent their life lugging a 70ft motor and butty up and down the cut for half a century including a world war and remember maintenance on the cut was always almost optional.

Just a thought but if it worked on a diesel with its twenty to one compression ratio I wonder what dimples might do for the bores in a Scott?

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dave bushell

Joined: 09 Jun 2004

Posts: 231

Location: Caterham, Surrey

Posted: Wed Jun 25, 2008 9:18 pm Post subject:

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Hi Roger and efr215

Thanks for your responses. I agree with not having a polished bore. An old motor engineer that I once knew, told me that after he received cylinder block that had been honed to a fine finish, he would degrease it and then dunk it in water and leave it outside until it had got a fine layer of rust in the bores which he then cleaned off before fitting the block. I guess in those days he didn't have a flexible hone!