

Water Tap Thread

Roger Hulett

Joined: 31 May 2004

Posts: 87

Location: South West France

Posted: Tue May 22, 2007 9:30 am Post subject: Water tap thread

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How do you repair the stripped thread in the cylinder block for the water tap. My local engineer (French) says that a Helicoil can not be put in because there is insufficient metal to hold it securely.  
Roger Hulett

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efr215

Joined: 06 Nov 2004

Posts: 121

Posted: Tue May 22, 2007 1:49 pm Post subject:

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If your block is like my DPY engine then the stripped thread is/was 1/8" BSP.

If so what about making a threaded sleeve out of 5/8" A/F hexagon, (17mm A/F for the metric lovers), with a 1/8" BSP thread on the inside and 1/4" BSP on the outside?

The block will have to be tapped out of course and the sleeve inserted with a drop of Loctite.

The sleeve needs to be carefully made as there is a barely 0.011" each side between the crest of the 1/8" BSP thread and the root of the 1/4" BSP thread.

If the use of hexagon is considered undesirable then a similar sleeve can be made without the hexagon. In this case a split 1/8" BSP plug with a tapered drawbolt through it to tighten it in the sleeve will have to be made. When the sleeve is screwed in flush and the Loctite given time to set the drawbolt can be slackened and unscrewed. In this way with the tap re-fitted the repair will be invisible, it's just more work.

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Roger Hulett

Joined: 31 May 2004

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Posted: Tue May 22, 2007 4:09 pm Post subject:

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I suspect my water tap hole has been bored out already as the tap has a 12mm thread which I believe is .472inch which is I think 1/4 BSP. Can I go up a further size and tap out to 1/4 BSP and if so what do you recommend.  
Thanks Roger

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efr215

Joined: 06 Nov 2004

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Posted: Tue May 22, 2007 6:36 pm      Post subject:

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I've just been and had another look at my barrel, (it's on the bench). The centre of the hole on mine is just shy of 3/8" from the gasket face, the thickness of the casting between that face and the water space is about 1/8" give or take a flake of rust or two so if your barrel has been opened out to 12mm you are running out of metal.

All is not however lost if you can do a bit of silver soldering. I am suggesting that you make a 1/8" BSP bush with a diameter that will go into the ruined thread and silver solder onto this an oval flange, (oval, just 'cos it's pretty), previously curved to match the profile of the barrel plus a soft gasket and drilled for a pair of screws. You might think it advantageous to smooth the area of the cylinder casting around the hole but a thick soft gasket should do the trick. You will of course need to drill and tap a pair of holes into the block to match those on the flange.

A little tip here for silver soldering operations: If "Tippex" liquid paper is painted on those areas where it is desirable that the solder does not run it will create a most effective "dam" even when everything has got red hot. No, it don't make no sense to me either but it works!

It would of course be possible to turn a "top hat" and file and bend the "brim" to shape but most commonly available brasses are "short" and will weaken or even break if treated thus. A scrap of 1/8" (3mm) brass sheet however will not and it would be infinitely easier to get a fair curve on before soldering it to the bush.

That said if the ruined hole is 12mm then there is enough metal for a 60% thread if re-tapped 3/8 BSP, however the O.D. will then be 0.656" and 0.375" - 0.328" = 0.047" and that 'aint a lot! It is always possible to move the centre of the hole "up" the block and even offset the new hole to retain its relative position but there is only 3/16" or so of wall thickness so you are getting into the area of needing special, (fine pitch), threads if you were to go much larger in thread diameter. On balance I'd avoid that route.