

## SOME NOTES RE CYLINDER HEADS YOU MAY FIND HELPFUL

*These notes are not intended to instruct the reader how to complete the task in hand it is assumed as you are undertaking the job that you are a competent mechanic with the appropriate tools and workshop manuals to hand. They are simply a few pointers that may be of interest.*

*Threads, the three tapped holes on the top of the Commando cylinder head for the headsteady are 5/16 BSF, As are the rocker feeds on all the twins.*

*The three tapped holes in the base of the cylinder head are 3/8 BSF. These three threads should be checked carefully and helicoiled if in doubt, there is barely adequate engagement here and the threads often pull.*

*The exhaust threads should also be examined carefully and helicoiled if any wear is apparent or future trouble is likely.*

*There are ten fixings for the head to the barrel and all these should be tested before fitting the head, by this I mean screw all nuts up studs and bolts into barrel checking they all go down freely to a depth that leaves less length showing than the thickness of the respective component, the threads can bind, particularly into the cast iron barrel and often the torque applied is being lost to tight threads, often a tap is required to clean out the threads into the barrel, these are BSC. (26 T.P.I.).*

*The three nuts fitted from the underside do not, by the way, have washers.*

*Heat insulating washers are used under all four spring seats, unless a high lift cam is used, in which case springs should be checked for coil binding, normally the heat insulating washers are used only on the exhaust spring seats when any cam with more lift than standard is used.*

*The valve guides on all heavy twins are nominal 5/16" bore. Outside diameter nominal 1/2" From the first twin to the penultimate 750. The very last 750 with the RH6S head, and all 850 are 5/8 nominal O.D.*

*Valve guide seals should be fitted to all inlet guides on machines with a pressure fed head. The seal should not have a spring fitted, that seal is from a car engine and was not used on production commandoes.*

*Valve seats are pretty tough and should give decent mileage even with unleaded fuel.*

*Oil leaks on 850 heads that appear from the front 2 or 3 fins up from the head to barrel joint are probably caused by porosity, it is possible to impregnate the bare casting with a sealing resin, it is also possible that the vacuum created by fitting a one way breather valve may help. Occasionally a similar leak can be caused by oil finding its way up the 5/16" studs from the pushrod tunnels, removing the two studs, 067561 and replacing them after applying a suitable thread sealer should eliminate that possible cause.*

### **Torque's.**

*All 3/8 head bolts 30 lbs./ft*

*All 5/16 head bolts 20 lbs./ft*

*The two 5/16 nuts at the front from the top 20 lbs./ft.*

*The 3/8 nuts tightened from the underside 30 lbs./ft.*

*The oil feed banjo bolts 12 lbs./ft (be careful these snap easily)*

*The exhaust cover nuts 8 lbs./ft again be careful, the studs snap easily, and the covers distort, it is worth while flattening the exhaust covers on 1200 wet and dry.*

*It is important to nip the ten head holding down fittings regularly until it is found they no longer move.*

*Whilst mentioning torque settings, it may be that you cannot access all fittings with a torque wrench, one way you can get around this is to tighten a bolt to the required setting, any bolt, then feel its tension with the spanner you are going to use, that normally does the trick, on our not too critical applications.*

*There is another point that may be worth mentioning regarding the exhaust pipe roses, these should be tightened, and re-tightened several times, each time the head gets hotter the nuts will tighten further, once it is really hot and the nuts are pulled up as tight as you can get them, (the proper spanner 063968 is more or less mandatory) then they should be lockwired, the fins on the nuts are easily drilled although a center drill is handy, and we have recently developed a special nut for the exhaust rocker cover, stainless steel of vaguely similar appearance to the standard nut, but incorporating three little holes for lockwire, so two of these, part number 067552M may also be of use.*