CYLINDER HEAD GASKETS MORRIS EIGHT 1934-38

A few observations following recent discussions regarding localized overheating.

I have noticed quite a few cars where owners have installed Series E engine blocks (or later MM etc) in the 1934-38 cars.
I refer to the Pre-Series, Series I and Series II cylinder head/engine block as 'UB'.

I have not heard of anyone who has installed later cylinder heads to 'UB' engine blocks and therefore I am not including this option here; but I know of several instances where in order to retain the original dynamo cradle/horn/air silencer and water connection arrangements, an older 'UB' type cylinder head has been fitted to a Series E or later engine block.

All 'UB' type engine blocks were manufactured with a water passage between cylinders 2 and 3, but none near to the 26mm diameter distributor hole. It appears to be the case that all later engine blocks were manufactured with both the two water passages near to the reduced 22mm diameter distributor hole, and the water passage between cylinders 2 and 3; this should be checked on any engine block about to be used. If these three water passages are in the later engine block, then provided the correct gasket is used, the 'UB' type cylinder head can be fitted satisfactorily without blocking off coolant flow and causing localized overheating.

All 'UB' type cylinder heads were manufactured with a water passage between cylinders 2 and 3, but none near the distributor hole area. Regarding later type cylinder heads, these appear in all cases to have been manufactured without the water passage between cylinders 2 and 3, but with two water passages near to the distributor hole area. If a 'UB' type cylinder head is fitted to a later engine block, the correct original DK4A (as fitted to 'UB' engines) distributor drive dog must be exchanged for a smaller 21mm diameter dog otherwise it will not pass into the 22mm diameter cylinder block hole. Also the original 'shorter' drive shaft should be used from the 'UB' block. Provided that these exchanges are made, either the 'UB' type gasket or the 'Series E' type gasket will actually fit in place; but as will be noted later, as I understand it neither are satisfactory in this instance.
Traditionally cylinder head gaskets for all Morris 8s have, as far as I am aware, been of the copper/asbestos/copper type. Presumably these now incorporate an asbestos substitute. For the later engines I have also seen listed an alternative composition type gasket but I am not sure precisely what application this was intended for; if these composition gaskets are still available it is possible that they can be altered as required. I recommend a 'Payen' specification pattern copper/asbestos substitute interlayer/copper gasket, as some inferior substitutes have been known to have insufficient thickness of interlayer which can cause uneven bedding down.

So far, so good:-

a) 'UB' cylinder head on 'UB' engine block……use the earlier gasket (Series I / II diagram).
b) Later cylinder head on later engine block……use the later gasket (Series E diagram).

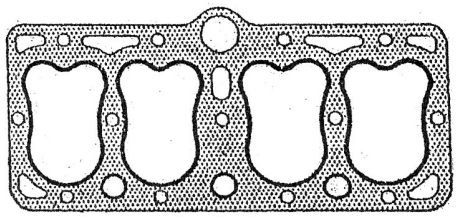
But what about 'UB' cylinder head on a later engine block (block having all three water passages as noted previously)?:-

- If the earlier gasket (Series I / II diagram; Payen AA 680) is used, the coolant will be diverted via the water passage between cylinders 2 and 3 and will enter the cylinder head satisfactorily. But there is a chance that the larger distributor aperture in the gasket could lead to potential failure at the water passages near to the distributor hole.
- If the later gasket (Series E diagram; Payen AA 250) is used, coolant will be blocked (it cannot be diverted in this area) from entering the cylinder head via the water passage between cylinders 2 and 3, and this is likely to cause localized overheating and potential failure.
- Surely we need a 'hybrid' pattern gasket. In effect an early type (Series I/II diagram) pattern but with the reduced size distributor hole

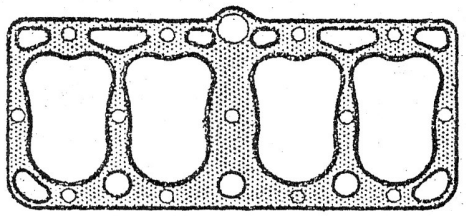
- Unless all the three above mentioned water passages are in the engine block, I cannot see how the situation can be remedied without engineering modifications to the cylinder head or engine block. Therefore without all three water passages in the engine block it would appear advisable that the cylinder heads and engine blocks should not be interchanged.
- It is of course perfectly possible that no symptoms of overheating will become apparent in light use, but there is a definite risk that long-term damage could be caused, and that engine or gasket reliability will be reduced, maybe leading to problems on the road.

FINAL NOTES.

I believe that is important that any gasket on these engines has sufficient 'maximum' width around the distributor aperture. Some I have seen do not, and create a weakness at an important area.
I think a third pattern 'hybrid' gasket in addition to those shown below is required when fitting a UB type cylinder head to a later engine block; in other words a Series I/II pattern gasket but with the smaller distributor hole. It would seem to be advisable that the gasket manufacturer should be asked to make a special copper/asbestos 'hybrid' version.



Morris Eight Series I/II



Morris Eight Series E

FURTHER INFORMATION ON AVAILABLE GASKETS

During 2013 I have been shown copper/asbestos substitute/copper gaskets for Morris 8 engines with water passage holes punched but not swaged over. Regardless of whether or not the interlayer is asbestos or asbestos substitute, I believe these gaskets are not up to standard and should be avoided. I say this because it seems to me that it is important that water passage holes, combustion chamber holes, distributor hole and the outer perimeter are all swaged. This is because the slight additional thickness of the gasket at the swage will create maximum seal where it is needed most when the gasket is compressed and seated; importantly this could mean there will be a tendency to leave any unswaged holes insufficiently compressed causing leakage of coolant. The only areas that could be unswaged without adverse effects would be the head stud holes.

BOB BRYAN 2009
Amended March 2011
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Amended January 2014
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bobbryan@waitrose.com