BROCKHOUSE INDUSTRIAL ENGINES

Have just made sure that my copy of the Morris 8 Brockhouse Engine Manual does not give any torque settings for our engines, for what it is worth the following may be of interest. Be aware of using torque settings supplied by bolt manufacturers who very often assume that all components are new or articles in DIY magazines which are often based on the overhaul of one engine from a production run of 100,000 and usually cover themselves by saying "it worked for me". These can be helpful if used with discretion but should not be taken as Gospel. YOU NEED TO KNOW YOUR ENGINE. From experience I can offer the following: - This family of engines has been used as auxiliary power units for firefighting pumps, field generators, water pumps, GPU'S (ground power units) in military tanks, ships and landing craft all being required to be built to different specifications as well as for road transport. Also to be taken into account is one of three locations where these engines were reconditioned and carry the Morris Motors brass label. I have four of these engines, the one currently in my President I overhauled 30 years ago after buying it from Ruddington WD surplus after it was returned for overhaul in the service exchange system. It came out of a tank and the cylinder head studs were M10 x 1.5, 12mm longer to accept extended nuts and 10MM through the head to stop the head fretting in the clearance holes due to the loads imposed by the hydraulics.

My number two is one that I overhauled from Jacksons of Owston Ferry about the same time and was issued to the US forces. It carries the specification number AN (ARMY/NAVY) 00146/2A. This uses head studs 3/8" unc into the block and 3/8 unf head nuts. My contact at Bovington assured me at the time that this was to suit the American tool kits which were compatible if the Wisconsin engine was fitted. My other two, both now reconditioned, have 3/8" bsw into the block and 3/8 bsf nuts, one of these carries the Morris Motors label, the other is stamped WD RECON BM 56. It has been suggested that this was a government licensed overhaul centre possibly BSA. So check all your fastenings, don't assume what it says in the print is always correct, a 3/8" unc will screw into a 3/8 bsw thread but the thread angle is different and it will not accept the same torque. Whether the head studs are grade 8.8, 10.9 or 12 you will only know by testing so I make all new studs from grade 12 (Cap head Allen bolts) of the same thread as the block and screw cut them in the lathe to suit the corresponding thread, using grade 10.9 nuts. If you are really unlucky the head may have been fitted with Helicoils and what thread they are is any one’s guess, they do a good job but you need to know their history. If you do decide to torque up into castings from tables other than those specified or endorsed by the manufacturers, then I would reduce the stated value by 15-20% as a casting is an unknown animal. The Brockhouse Manual advises to tighten all cyl head nuts by crooking the finger over the extreme end of the recommended spanner until all nuts are nipped and then tighten fully in sequence. Welcome to the minefield.

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