

A PREVIEW OF MAJOR POINTS IN THIS BOOK

- A well-built, normally aspirated street flathead will meet or exceed the original factory specifications for power, reliability, smoothness and appearance. Page 1-9.
- Flathead Fords can be conveniently categorized into three families or generations. The cylinder heads provide a quick look identification of the generation. Page 2-2.
- Some second generation flatheads had steel pistons paired with steel sleeves. The sleeves can be removed and conventional aluminum pistons used. Rebalancing is required. Page 2-9.
- Factory blocks had factory installed hardened exhaust valve seats from 1934 to 1951, and hardened intake valve seats from 1939 to 1949. Pages 3-4 and 9-8.
- Blocks with cracks in the valve pocket area or center main cap web area are not recommended for rebuilding. Cracks between the head stud holes and the adjacent water passages are no problem, and no repair is required. Page 3-9.
- Stock flathead connecting rods are forged steel and are suitable for severe service. Page 5-12.
- Flat top pistons should not be used for any application without a matching flat combustion chamber head configuration. Page 7-6.
- All engines including the flathead benefit from an effective oil filter. The stock or optional bypass-type oil filter is adequate and desirable. Page 8-8.
- Properly torqued deck plates and main caps should be used during cylinder boring and honing operations to enhance cylinder roundness and ring seal. Page 9-2.
- An unusual feature of all Ford flatheads is that the centerlines of the camshaft, crankshaft and cylinder bores do not coincide requiring special care in machining setup. Page 9-3.
- Balancing is mandatory for rebuilt engines when the replacement rotating assembly parts are not exact duplicates of the originals. Original parts were matched to weight limits that often can not be met with replacement parts without re-balancing. Page 9-4.
- Most flathead Ford head retainer studs or bolts are wet and thread sealer should be used for all installations to prevent coolant “weeping” in service. Page 9-6.
- After initial head installation, at least three warm up, cool down, and re-torque cycles are required for a good head-to-block gasket seal. Page 9-7.
- The factory specified a modern high performance “3-angle” valve seat configuration in 1949, which is suitable for all flatheads. Page 9-8.
- SAE 20W50 racing oil meets the requirements of most flathead Fords. Page 9-10.
- All engines including the flathead benefit from an effective air filter. The stock air filters (all types) are not adequate for touring and consideration should be given to using a modern high capacity pleated paper unit for longer trips. Page 9-11.
- Determining flathead compression ratio requires special techniques. Page D-4.
- For proper cooling, it is extremely important to start with a clean block. Page E-1.
- Do not use the 1948 and earlier heads (or head gaskets) on 1949 and up engines. Cooling is compromised. Page E-3.