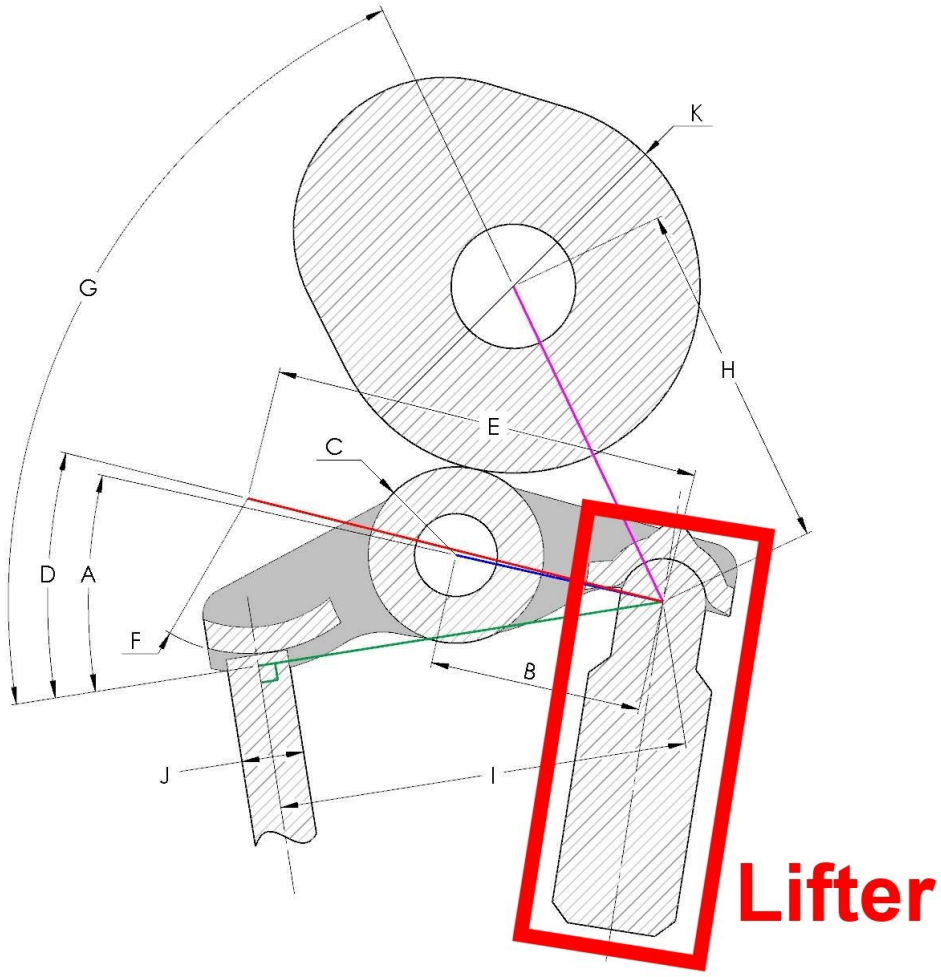
Solid Lifter Conversion

We have found on a high lift cam at high RPM we are coming to the limit of the Hydraulic lifters on the M160 Smart Engine.

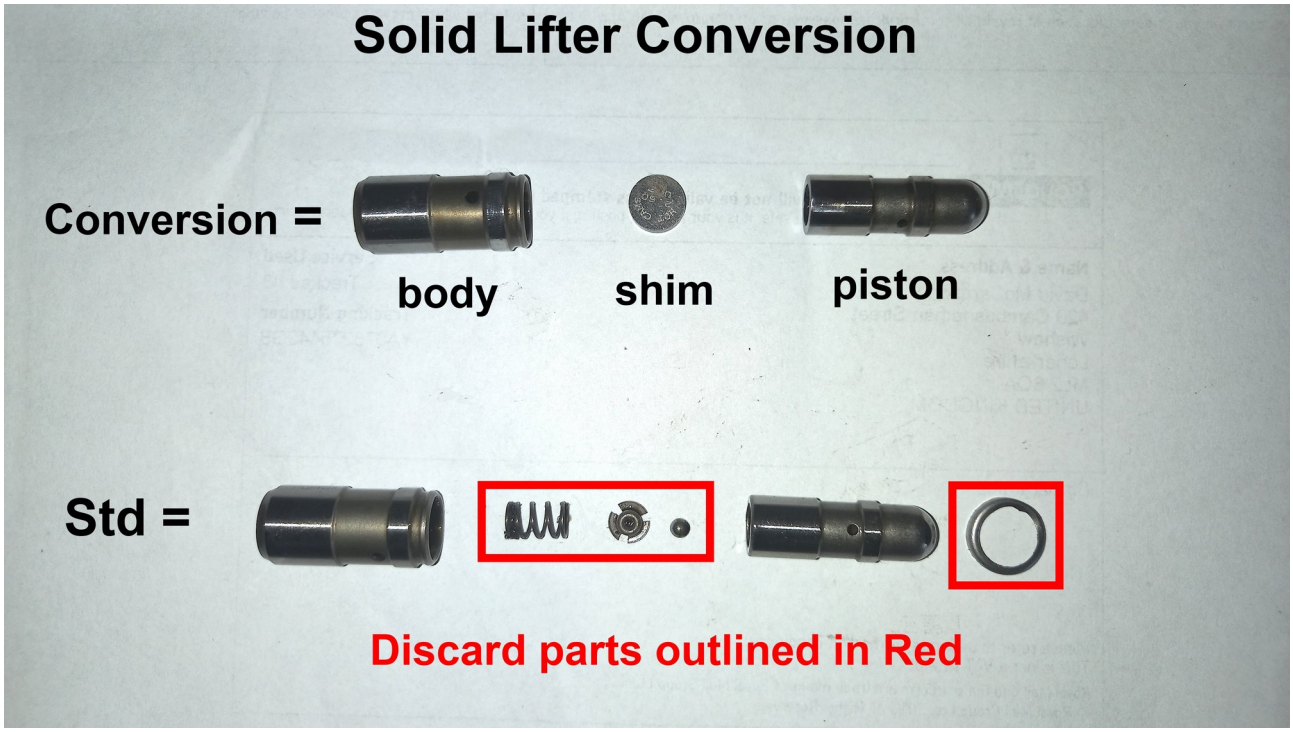
The main issues are:

1. Due to low oil pressure at low RPM the Idle becomes erratic due to the valves not opening to full lift and not for the correct duration.
2. Again due to low oil pressure at low RPM pulling away becomes problematic and slow due to the valves not opening to full lift and not for the correct duration.
3. At high RPM (6500rpm+) power drops off as the lifters get overwhelmed by the RPM and forces involved.

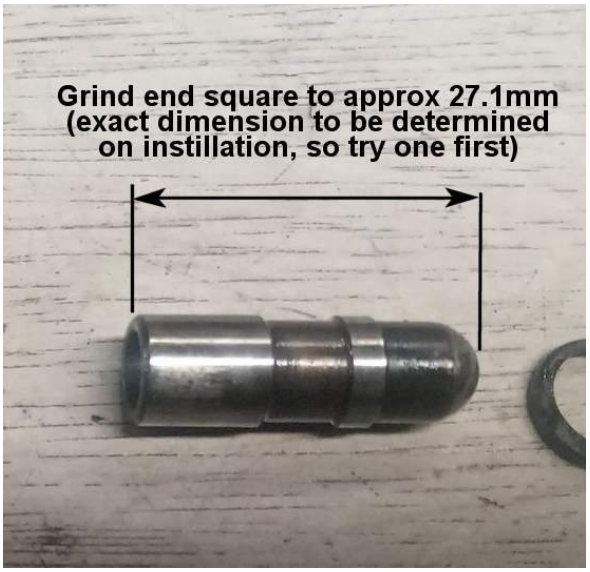


(A) Cam End Pivot Angle (21.721)
(B) Cam End Pivot Distance (20.453)
(C) Cam End Pivot Radius (8.5)
(D) Valve End Pivot Angle (22.993)
(E) Valve End Pivot Distance (41.243)
(F) Valve End Pivot Radius (15)
(G) Cam Location Angle (73.639)
(H) Cam Location Distance (33.664)
(I) Valve stem distance (39.483)
(J) Valve Stem Diameter (6)
(K) Cam Lobe Base Circle Diameter (36)

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The piston has to be shortened to 27.1mm (as a starting point) To do this put the piston in a battery operated drill holding on the top domed end and spin up and hold the flat end on a grind stone (this is an attempt to keep the ground end square) do not let the metal discolour or get too hot. Quench in water often. When at size deburr and clean thoroughly removing all grinding remnants.





By changing the shims (8.9mm KTM 250 shims) set the distance between cam lobe and the rocker to between 0.125 and 0.150mm (5 to 6 thou). A correction can be made to the length of the piston if the shims are too large.

When you do any work on the valve gear the cam lubrication hole in the rocker must be kept clear (see image).

This conversion only works with cams specifically designed for solid lifters, 223D Developmental cams designed for this use have an "s" at the end of the name MC86s, MC88s etc.