Andy Millen on rebuilding your own engine – use a “Yoda”:

As Reiff said, I used Aircraft Specialty Services.  They were very helpful.

Terry Brokaw (my Yoda) had me send in all the steel parts.  Crank, cam, lifters, rockers, rods, piston pins, etc.  All parts will be checked for cracks and dimension.

I had a misconception that getting a yellow tag would cost more than just getting the part checked.  It doesn't.  It has been a while, but as I recall, if a part fails, they don't charge you for checking it.  They will sell you a new one though...

In my case the yellow tags were green.  :)

There are two levels of tolerances.  New and serviceable.  New is new.  Serviceable means it has wear but can still be used.

Terry did not/would not let me use anything that was not New tolerances.  He didn't want me to have to open the case at 1000 hours because something wore out.  He was especially firm about using a new oil pump drive shaft and gears.

They hydraulic lifters are also tested for bleed down rate.  If they don't perform, they will be rejected.  This isn't something the average guy can test for.  I bought my engine as a kit.  It was provided with used lifters.  The first two complete sets failed.  Turned out to be the trickiest parts to get right.  In the end I got a brand new set.

As Nick and Dave said, the engines aren't complicated.  Good advice to find your own Yoda.  Let them guide you through the training young padawan.

BTW, Terry also had me send in the crank case.  Cracks can sometimes be hard to find if you don't have the right tools.  I sent it in to Divco.  They were able to remove gouges in the mating surfaces.

Terry encouraged me to run it on a dyno.  Controlled break in.  Confirm the engine was making expected power.  Cheap insurance.

Andy