Valve adjustment on my M66

You must have a gap. In the books it says 0.1mm or 0.004", but that's a sort of nominal do everyone number which anyone can feel. It doesn't mean 0.99 to 0.11mm, it just means "some".

When you first put your engine together with a bunch of new bits which haven't run together yet, nothing matches. For example, the ends of your valve stems don't quite match the ends of your rockers, the ends of the pushrods don't quite nestle in the cam followers, and so on. This means a measurable gap with a feeler gauge is not the same as the running clearance, which is likely to be wider when everything's clicking together under high speed pressure.

Also, on a Ural, the aluminium cylinder head expands more than the steel pushrods do, which means the valve clearances increase when hot. This is why adjusting them so the pushrods spin without much discernible gap when cold works, because a gap develops as the engine warms up. Dneprs, with aluminium pushrods, don't behave like this. However, how tight to set the valves when cold, not so tight that you're losing compression and the engine's hard to start, is something gained through experience and a life lived with one particular motorcycle. Once your Ural has become yours, in harmony with your expectations, you'll know how tight to set your particular valves in the perfect compromise between starting compression and rattling, for you both. The manuals need to be idiot proof, and therefore they offer their 0.1mm, which anyone can understand and applies to any motorcycle.

It's going to take a few miles for all your new bits to run in together, and until they do, it's wise to run a gap when cold, even though all that clicking sideways of yet to match bits might be noisy. Any official, manufacturer, dealer or owners' club recommendation has to be made with public liability in mind, and so, carved in stone, is 0.1mm. But, I set Serenity to "bugger all" for the inlet and "bugger all + a bit" for the exhaust. We're approaching 50,000 miles now and I'm sure all her bits match as well as they're ever going to. Now that she's stopped running in, adjustment is rarely necessary.

The rocker mark shown here which doesn't go right across the valve is from Serenity (my M66) "as found". Then, the rocker missed the valve to some degree and needed shimming up or down to prevent it from pushing the valve sideways. Note also what seems to be two rocker marks, made at different times by rocker geometry which didn't push the middle of the valve stem. This also stressed the valve guide by pushing the valve sideways as well as down. From the factory, any rocker geometry will do. It’s a Ural, it's cheap, what were you expecting? But notice the other mark, which *does* reach all the way across the valve. This is after the rocker's been shimmed up and the geometry fiddled to push the valve down straight, to give the guide an easier life. The geometry depends on the mathematical relationship between the rocker spindle centres and the valve stem length. Any rocker assembly paired with any valve, the depth it rests on the seat, and the angle the guide holds it at all make a difference to the rocker geometry. If you've nothing better to do, you can become deeply involved in the minutiae of correcting rocker geometry by grinding the valve deeper, grinding the end off the stem if it's too deep already or shimming the base of the rocker pedestal in search of the perfect rocker mark. Is it worth it? It's your motorcycle, you tell me, but if your valve guides wear out quickly, this is why.

Paul Codling