

# Buying a BMW R80/100GS

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**What bike do you ride?** My R80GS is an early 1990 model, that is, one of the last "naked" GS without the bikini fairing. For a detailed history and some tips and tricks, please refer to my R80GS page <http://www.mysunrise.ch/users/joerg.hau/mot/r80gs.htm>.

**Are 37 kW (50 PS) enough?** This is a rather subjective question! For solo riding, also with heavy luggage, the R80GS certainly has enough power. However, riding two-up, I sometimes wish I had some more "horses" available ... and indeed the 1000-ccm engine is much more powerful, due to its torque. But then again, it 14+ years that I already live with that ...

**Does the R80GS easier "survive" 50'000 km than the R100GS?** Both the R80 and the R100 engines are solid constructions and should pass 50 Mm<sup>1</sup> without trouble. However, especially the 800-ccm engine seems to be almost indestructible. The 1000-ccm has the same base, but suffers more from the significantly higher torque and heat production. Remember, this engine has a much smaller oil reserve than the standard (street) boxers - only 2 litres of oil!

**Is the handling the same (apart from the difference Paris-Dakar vs. Basic etc) ? It seems that there are more accessories available for the 800-cc?** The R80GS and R100GS are pretty much identical, the differences are in the engine (bigger bore, other carburetors, but the same crankshaft), the rear transmission, and a few details about the stock-mounted accessories. Almost everything that fits the R100GS should also fit the R80GS. A partial exception is the "Basic", which is a R80GS frame that was fitted with lots of parts from the "old" R80G/S.

**What should you observe in particular if you buy a used GS?** Take along a bright light, and a simple voltmeter. Apart from the "usual" points to consider - which are pretty much identical with all motorcycles - the airheads have a few particularities. All of this can be repaired, and spare parts are still readily available ... however, the expensive part of a GS repair is usually not the part itself but the amount of time that is required! Think of those working hours *before* you buy the bike ... to discuss the price ;-)

- Oil leaks: There are people that say that a boxer always loses oil, but this is plain wrong. Cylinder head and foot gaskets must be completely dry. There

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<sup>1</sup>1 Mm = 1 Megameter = 1'000 km

might be a little "humidity" at the bottom of the pushrods (under the cylinder), but if it is *wet* then this is a problem. Fixing this is "technically easy", but the process is very time-consuming as you have to remove the cylinders.

- Oil between engine and gearbox means a defective Simmerring - expensive, because a lot of work.
- Lift the rubber bellows off the fork: All dry? The Simmerring is cheap and changing it is not difficult, but again this is time consuming.
- Oil consumption: At about 50 Mm my GS started drinking oil like a two-stroke engine. This was due to worn-out valves and valve seats, reportedly a problem specific to the pre-1991 models. Remove the spark plugs and look into the cylinder with a spotlight (turn rear wheel in 5th gear to see the valves) - if the spark, valve shafts or the piston are oily or "wet", calculate some 400...500 EUR for a head revision.
- Rear shock: The original rear shock does not survive 50 Mm (loss of oil etc.) and can *not* be repaired. Get TECHNOFLEX, ÖHLINS, WHITE POWER, etc. (starting at 350 EUR; at such a price, make sure you get it adjusted to *your* weight and *your* riding style). At the same time, invest in progressive front fork springs (less than 100 EUR).
- Exhaust system: Watch out for rust on the collector and/or the exhaust; both are expensive. From 1991 onwards, the GS was equipped with a stainless steel exhaust, but the downpipes and the collector under the gearbox are still made from ordinary steel. Don't worry too much about the downpipes themselves, they get hot very quickly and are usually not prone to rust. Especially on older bikes, the downpipes will be blue-gray; as long as both sides have the same colour, this is normal.
- Charging system: Connect a (calibrated) voltmeter to the auxiliary plug (left or right side under the seat; the location depends on the model year?), or directly to the battery. Start the engine, switch the headlight on and run with 2000/min; you should get close to 13.6 Volt at the battery. If it's significantly less, it is usually a faulty rotor. Easy to change (mine: every 50-60 Mm) but expensive. In 2005, a new rotor reportedly costs 250+ EUR; re-wound exchange parts can be found for about a third or a quarter of that price.  
The alternator light should only light when the engine is off, and is allowed to glow when idle is below 1000/min. If the light glows dimly while riding, you have some trouble with the charging system.
- Starter motor: Must not make any screeeeeeeeetching noise after starting (especially observed with a cold engine). This can be greased, but the noise *could* be a sign of a dying starter motor. Expensive.
- Ignition coil: Located under the right side of the gas tank; easy to see with a flashlight, if the GS has no fairing. The old, gray coil that was used until mid-1990 has a design flaw that causes it to fail sooner or later. An improved part (the "red coil") can be obtained secondhand, but many coils from third-party manufacturers are also used.
- Driveshaft: When you turn the rear wheel *by hand*, there must *not* be any kind of blockage or strange noises (*one single* "clack" when you change the direction of rotation is normal). It seems that especially the R100GS destroys its driveshaft at latest around 100 Mm, often earlier, but much less the R80 due to the lower torque. Very expensive, especially if the defect goes unnoticed

for a while (it may damage the rear swingarm). – Are the two rubber bellows around the driveshaft tight, and in good shape? Sand or dust entering through any hole would have disastrous consequences..

- Final drive: Carefully look for play around the two bolts that hold the final drive in the rear swingarm (they look like two ordinary M8 hex bolts). There are two bearings that may fail; changing them is a time-consuming job.
- Rear wheel bearing: Turn the rear wheel *rapidly* by hand. If you hear a “rustling” or “rushing” noise, the rear wheel bearing is worn out. Commonly, this goes unnoticed as the noise builds up very gradually, but once the rear wheel starts to have axial play you really need to fix this. *Very expensive*: Repair requires exchanging of the bearing plus some delicate adjustment; common wisdom (and even BMW dealers) says that it may be cheaper to get a new final drive.
- Gearbox: Take the bike for a test ride, look for smooth gear transitions. If you notice a howling noise in the lower gears, the bearings are worn out. Rebuild cost is very variable, depending what you are willing to do yourself, but count at least 200 EUR (if you are located in Central Europe, contact me for a reasonably priced address ;-).

From what I have seen, you may want to think about a gearbox rebuild if the gearbox has more than 60 Mm (60'000 km) for a R100GS, 80 Mm for a R80GS, and well in excess of 100 Mm for the "other" models (like R80 G/S and the early 2V).

- Front brake: Disk (rotor) in good shape? Measure the thickness and compare it to the wear limit (usually engraved on the disk). Models up to summer 1990 had a fixed disk (6.0 mm new, limit 5.4 mm), the later models used a floating disk (5.0 mm new, limit 4.6 mm).
- Rear brake: It is normal that the rear brake has “almost no” braking performance. This can be improved by re-coating the stock brake with softer liners (ask a clutch or brake service shop).
- Equipment: The rider’s manual should come along with a used bike, as it contains lots of valuable adjustment data. The tool set has to be included and complete. The stock BMW toolbox is of excellent quality and contains some well-designed multi-purpose keys: if the kit is missing or incomplete, this justifies a serious reduction of the price.
- Use, maintenance and care: Has the bike been used "intensively" off road? Typical signs are dented downpipes, dented engine guard, scratched crash bars, dirt between engine guard and oil sump ... but on the other hand, "some degree of" dirt is normal, it's a GS!