Gearing Up

Dear Reader,

for some time now, I have been following what has so far been a somewhat theoretical discussion in expert circles on the question of the optimum number of gears in future internal combustion engine powertrains. As we know, Volkswagen has now put its cards on the table and unveiled its ten-speed DSG dual-clutch transmission. Integrating a ten-speed gearbox into the tight package of a front transverse platform such as that of the VW Golf is, of course, an engineering challenge. After a meeting at Volkswagen I was fortunate enough to have the spontaneous opportunity to test drive a car equipped with this transmission, which has the internal code DQ511. This short trip already showed that the focus of the concept is on downspeeding: the long tenth gear ensured low engine speeds on highways and motorways, with the corresponding potential for reducing CO₂. And during acceleration, the benefits of closer gear ratio steps became apparent, in spite of the wider overall spread.

I certainly believe that the potential advantage of this concept – lower fuel consumption coupled with a high level of vehicle dynamics – will be positively received by customers. And it will definitely not be long before other car makers present transmission concepts with ten or perhaps even more gears. But whether the concept will become established in the broader market in the foreseeable future is another matter. The high costs of design and calibration will naturally result in additional costs that not all cus-

tomers will be willing, or able, to pay. However, the greatest competitor for ten-speed transmissions will be hybridisation, which provides high acceleration dynamics even with fewer gear ratios – thanks to support from the electric motor. Once again, it is the big manufacturers who have the upper hand, as they can expect very high production volumes with the corresponding economies of scale. What is more, it is they who have the capacity to put both developments into series production cost-effectively and offer their customers two attractive powertrain concepts in parallel. Some smaller manufacturers will probably be unable to take this step and will have to decide in favour of one direction only.

Best regards,

Richard Backhaus,
Vice-Editor in Chief
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