
Lubrication system of central gearboxes of the axle drive gear

© A.N. Wierzbicki, M.G. Lakhtyukhov

Bauman Moscow State Technical University, Moscow, 105005, Russia

The paper discusses one of the main design solutions of lubricating the central gearboxes of an axle drive gear. A casing lubrication system (dipping and spraying) is mainly used in the central gearboxes of the axle drive gear. It also presents some design solutions ensuring an uninterrupted supply of lubricant to the front pinion bearing a single-bevel and hypoid gears when a car moves in different modes. A particular attention is paid to smear cross-axle differentials in the driving axles with spaced main gears. Such differentials are characterized by higher relative speeds of the gear rotation. Installation of oil filters in the driving axles with the casing lubrication system becomes conventional nowadays. Application of the lubricant to both the central differential and the support bearings of the cylindrical gear reducer transition are made under pressure in some through-axles. The authors analyze some possible locations of the oil pump installations in the through-axles fitted with a pressure lubrication system.

Keywords: *lubrication, lubricating system, flood lubrication, splash lubrication, forced lubrication, pump, filter, final drive, differential, interaxle differential, differential housing, gearing, bevel gear, hypoid gear, bearings, tapered roller bearing, sleeve bearings.*

Wierzbicki A.N., Ph.D., Assoc. Professor of the Wheeled Vehicles Department of Bauman Moscow State Technical University. Author of over 100 scientific papers in the field of design of wheeled and tracked vehicles. e-mail: aver@bmstu.ru

Lakhtyukhov M.G., Ph.D., Assoc. Professor of the Wheeled Vehicles Department of Bauman Moscow State Technical University. Research interests: dynamic loading of wheeled vehicles. e-mail: motor@bmstu.ru
