A differential made with spur gears instead of bevel gears is a smart way to put the differential on a diet. INA’s light weight spur gear differential can weigh 30% less than a bevel gear unit and still stay completely inside the original design envelope. This makes for a huge improvement in the power density of a differential.

INA’s light weight differential answers the relentless demand for better fuel economy and less exhaust emissions. Our metal forming expertise lets us offer a cost-effective differential for high volume applications.

INA’s spur gear differential offers distinct advantages over a bevel gear arrangement:

- Reduced CO₂ emissions with its lighter weight
- Much more compact than a conventional bevel gear differential
- Higher torque capacity despite its lower weight
- Custom designed for your transmission
Our engineers can help you improve power density and reduce weight

INA’s light weight differential answers the call for higher power density in automotive drivelines. The extra space made available by the compact spur gear differential can be used for larger double clutch units, transfer cases or hybrid drive components. The light weight differential’s extremely narrow width creates new possibilities for new, friction-optimized bearing arrangements, which also helps reduce fuel consumption and CO₂ emissions.

Different gearing variations allow us to custom design a spur gear differential to fit the application. Four technically viable gearing concepts allow different designs to keep costs low and make the best use of space in the vehicle. This is just the first step in weight reduction: on the customer side, transmission cases can be smaller, lighter and less expensive.

INA’s light weight differential was developed with the latest finite element analysis software to simulate forming processes and optimize the final design. The calculations were refined and verified with hardware testing.

Metal forming is an INA specialty and is essential to the light weight differential’s construction. Cold formed carrier halves and planet pinions make up much of the differential. This economical and ecologically sound manufacturing approach further helps reduce CO₂ emissions.

We have offices and plants near our customers and are well represented by our engineering centers. We are always ready to respond quickly with efficient designs for individual applications worldwide.