



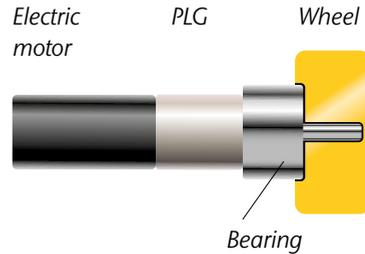
Wheel drives à la carte

Wheel drives in modern industrial environments are as multi-faceted as the menu in a specialty restaurant.

Here, IMS Gear offers a vast array of solutions with the full variability of the modular system for planetary gears.



IMS.baseline planetary gear with adapted output side, installation in tube (axle) possible, all standard motors can be adapted, any wheels can be mounted externally



The principle of the planetary gear (PLG) seems genuinely predestined for a wide variety of potential applications, where high levels of power transmission are called for within a small installation space, delivering optimum efficiency. Many configuration variables also make it possible to achieve a high level of individualization within each of those applications.

implemented. In many cases, standard gear components can be used from high-volume production runs with significant cost benefits. Implementations associated with IMS.techline also open up individually matched options for extending service life, for example through the use of needle cages (improved bearing) or oil lubrication (reduced friction).



IMS.techline plastic planetary gear in low cost configuration, chassis mounting with customer specific screw-on flange, all standard motors can be adapted, any wheels can be mounted externally

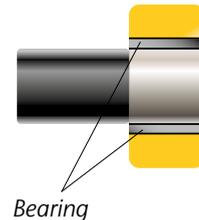


A major advantage of the modular system is that neither motors nor wheels need to be defined in terms of specific components. This is why IMS Gear does not offer a complete range of wheel drives. Instead, it can configure and adapt its planetary gear units to suit specific purposes. In this way, working jointly with project partners, it can devise individual solutions quickly and efficiently.

IMS.SDline: Using IMS.SDline provides access to maximum power density because the planetary gear unit is completely integrated into the wheel. This means that the required installation space is minimized. The axial length of the IMS Gear solution is therefore determined almost exclusively by the meshing of gears. Consequently, no axial length is lost for bearings, etc. For example, for optimum loading, the bearing can be arranged externally on the internal gear. This creates the best possible conditions for long service life and availability. Both can be further improved by options such as needle cages or oil lubrication. Flexible interfaces with motor, chassis and wheel further underline the autonomy of motor and wheel manufacturers.



IMS.SDline planetary gear completely integrated into the wheel in 2 stages, can be combined with any commercially available motor, flexibly adaptable wheel mount for all catalog wheels



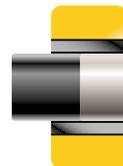
The following wheel drive solutions illustrate just a few very wide-ranging examples of these benefits, all implemented using planetary gears from the modular system created by IMS Gear: Wheel drives à la carte in fact.

IMS.baseline: In various applications such as golf caddies, wheel drives are used together with IMS.baseline planetary gear units. In a linear arrangement, standard modular components from high-volume production can be used. These are available at short notice, in dimensions and a choice of materials adapted to suit power transmission requirements and installation space. There is full flexibility in terms of how the motor, vehicle and wheel are interconnected.

IMS.SDline can be extended even further: Complete integration of the PLG into existing housings is feasible. Examples of these are motor housings, axle casings or chassis. Even with these solutions, designed for exceptionally confined installation areas, it is possible to build initial prototypes rapidly with volume production parts. Right across the board, the full versatility and scope of the modular system can be used to advantage. What this means in practice is that short development lead times and rapid part submission warrants are problem-free propositions, even with extremely custom-made solutions of this nature.



IMS.SDline planetary gear, 2-stages with integrated motor in the ring gear, highest power density through largely complete drive integration into the wheel



IMS.techline: Examples of topical applications include lawn-mowing robots. Gears containing plastic gear wheels are a very attractively priced option for longer production runs where the need for power transmission is relatively low. With IMS.techline, specially adapted customer interfaces can be

IMS Gear modular system

= Risk minimization

Access to this modular system opens up a range of advantages for all of these solutions, regardless of which technology line is chosen: Peace of mind with the choice of technology, minimization of technical risk, fast market launch, cutting of development and tooling costs, and reduction in complexity.

Summary: The modular system for planetary gears enables IMS Gear, regardless of the specific implementation of a wheel drive, to utilize the full variability of linear and integrated solutions and, as a flexible partner, also to rapidly implement a technically challenging solution. This can be achieved with a free compilation of materials, gearing, bearings, lubrication or reduction ratio, and without having to define specific providers of motors or wheels.