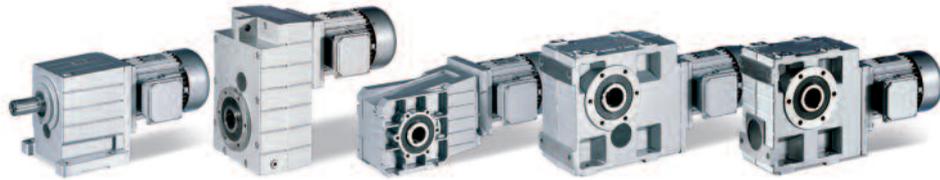


# L-force

*Geared motors*



efficient, reliable, versatile

With  
IE2 motors  
and  
inverter-optimised  
MF motors

**Lenze**

# L-force | Your future is our drive

Cost efficiency, saving time and improving quality are the challenges of the future. Lenze is meeting these challenges with **L-force – the drive and automation family with wide-ranging solutions and compatible interfaces and components.** L-force means faster project planning and commissioning, enhanced performance and flexibility in production.

## Driven by innovation – New ideas for new possibilities

Always on the lookout: Our idea of innovation is working on even better solutions for our customers, every day.

## Driven by flexibility – High degree of scalability for individual solutions

Scalability is an important aspect of the **L-force** philosophy. Performance, scope of functions, software, service provisions and aftersales care – Lenze will provide you with exactly the combination you require.

## Driven by usability – Simple solutions, even for complex applications

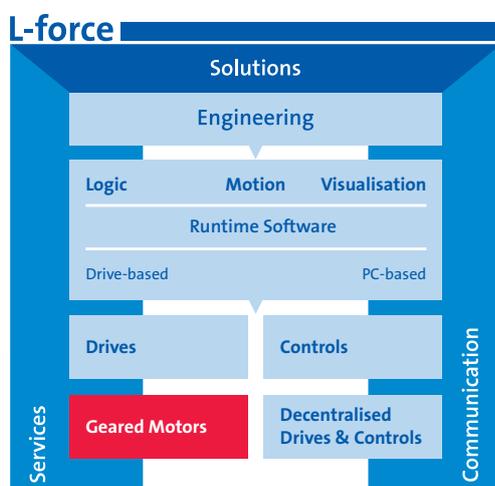
We always focus on the user. Therefore, when we developed **L-force**, we made sure that people with plenty of practical experience were involved, right from the start.

## Driven by compatibility – Universal products and solutions

Don't waste any more time searching for suitable components and the right interfaces. With **L-force**, everything is compatible.

## Our drive – is to meet your requirements

Efficient geared motors in a harmonised and versatile construction kit-based format, for use in a wide range of industrial applications.



# Geared motors | Reliable partners

Reliable, efficient and versatile and applied to in all common types of gearbox – the L-force gearboxes and geared motors from Lenze.

## Reliable

L-force gearboxes and geared motors are renowned for their high quality standards. We are so certain of our quality that we offer a Europe-wide 24-month warranty.

## Suitable for your application

Already equipped with a high level of functionality as standard, our geared motors can be flexibly enhanced with options at the drive end and output end. The broad range and fine increments of the gearbox ratios also enable precise adaptation to the required process parameters.

## Efficient

The high efficiency of the gearboxes, together with the efficient motors, ensure a fully optimised drive system, with the result that all energy saving potential is utilised.

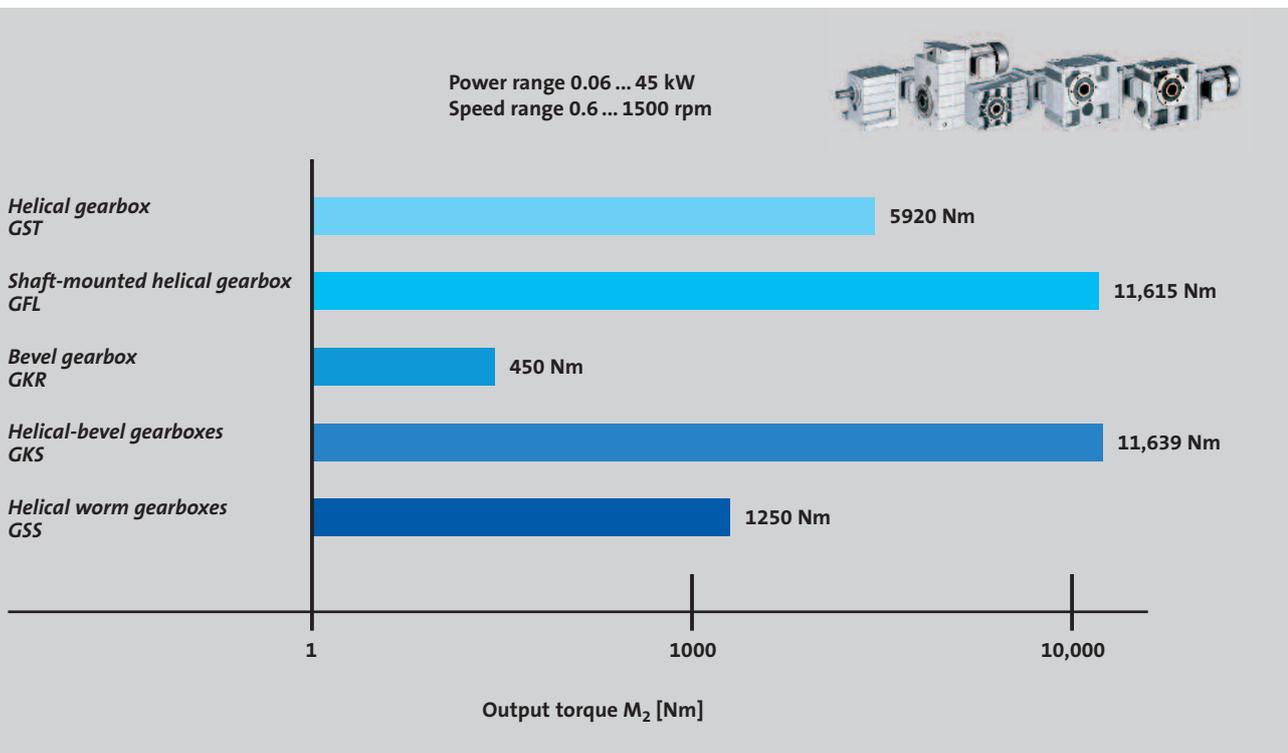
## Compact

The modular concept and the high power density thanks to hardened and ground gears with optimised teeth profiles make extremely compact sizes possible.

## Low backlash

The twin basic concept of low-backlash connecting elements and high-quality gear tooth system due to precise manufacturing enable a low backlash on the output compared to other, similar gearboxes.

## Torque range of the L-force geared motors



# Geared motors | The construction kit

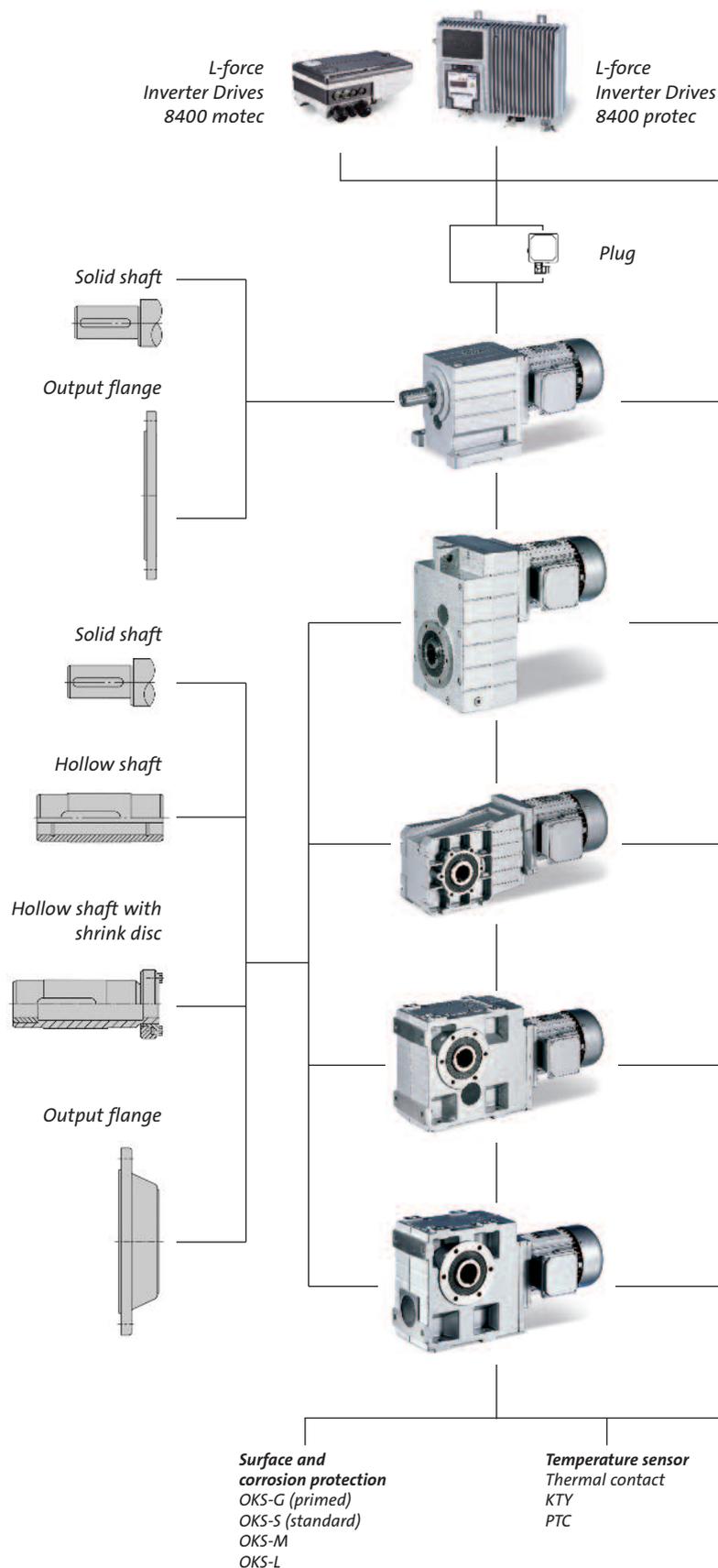
Lenze provides a sophisticated geared motor construction kit, which covers a wide range of requirements. Numerous drive-side and output-side options enable precise adaptation of the drive to the specific application.

The wide power range extends from 0.06 to 45 kW. Optimised teeth profiles and ground gears ensure low-noise operation as well as low backlash. The gearboxes have a compact and hence space-saving construction.

The motors have the high degree of protection IP55. Lenze offers a specifically developed surface and corrosion protection system for geared motors that have to withstand rainwater, saline air or subtropical conditions, for example.

The L-force three-phase AC motors are available in both the standard IE1 efficiency class and in the power range from 0.75 to 45 kW meeting the high-efficiency class IE2. They therefore correspond to the current IEC standard 60034-30. Investments in energy-efficient motors are also rewarded with lower electricity consumption. This is particularly worthwhile in applications with high running times.

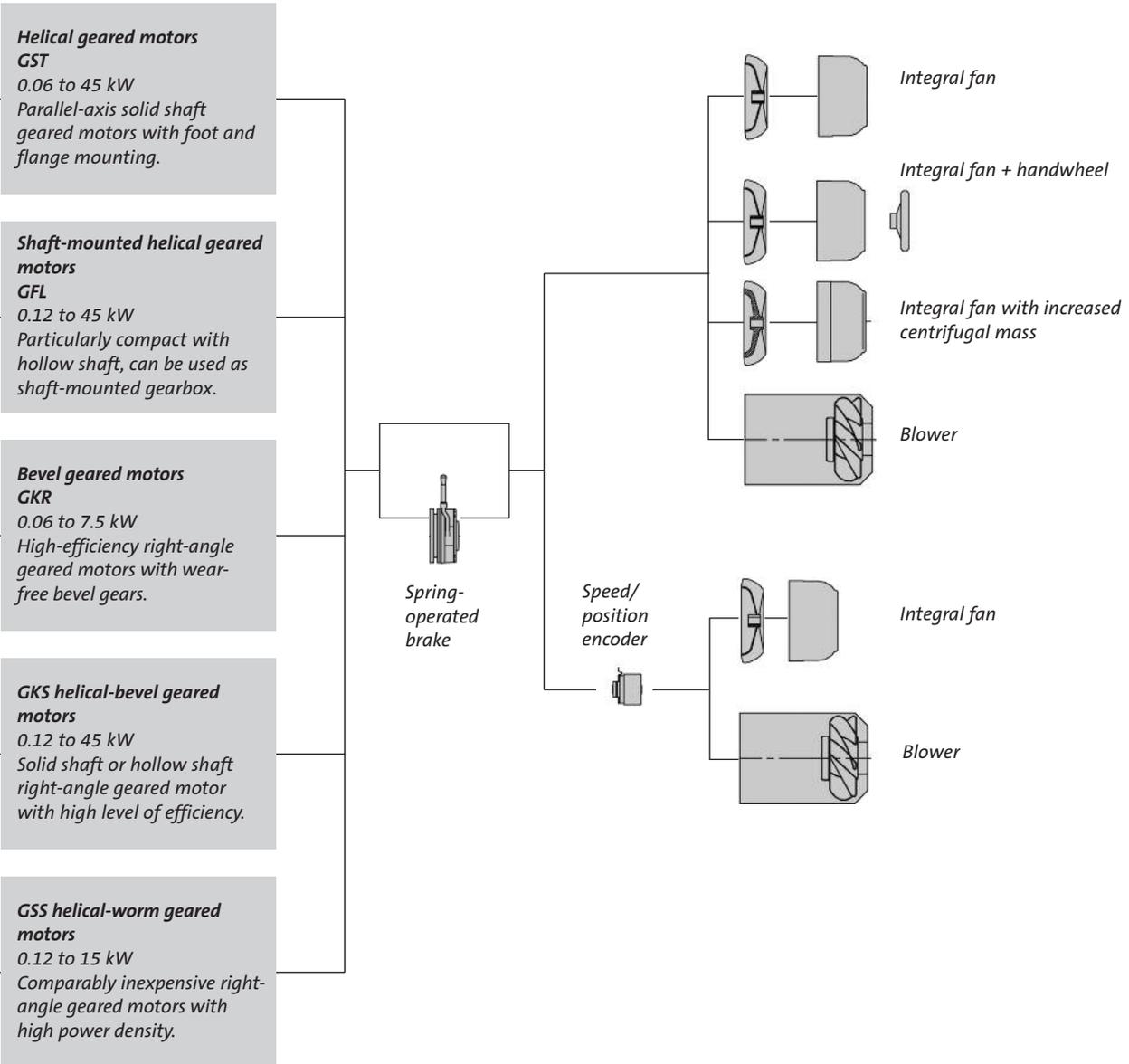
The frequency inverter-optimised L-force three-phase AC motors MF also make consistent use of the potential offered by inverter operation: they are up to two frame sizes more compact than conventional three-phase AC motors, demonstrate high dynamic performance and have a wide speed range. The time it takes for the investment to pay off is not even worth calculating, as the motors' high level of efficiency combined with low costs speak for themselves.





L-force  
Inverter Drives 8400

Mains  
operation



**Three-phase AC motors**  
Standard efficiency (IE1)  
High efficiency (IE2)  
Inverter-optimised

**Approvals**  
CE  
UL  
GOST  
UkrSepro

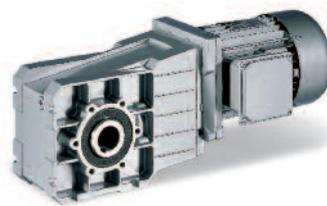
# Efficiency | Reduces energy costs

Almost half of all the electrical energy generated in Europe is consumed by industry. Electromechanical drives are responsible for around two-thirds of this electricity consumption. There is hardly an area of the production process, automated material transport, or factory infrastructure that does not require the use of electromechanical drives.

## The solution in detail

... and one further advantage: the motor and any frequency inverter used are required to provide less energy to compensate for the losses from the gearbox, and can generally be designed with smaller dimensions. In addition to the cost savings, this solution is therefore also beneficial at product level.

Due to the high proportion of the total energy consumption and the broad application spectrum of electromechanical drives, they offer the most effective platform for increasing energy efficiency.



## Your cost-cutting potential

The example of bevel geared motors instead of worm geared motors in the graphic below shows that in the medium term, the use of bevel instead of worm gears can lead to considerable cost savings; in this case, an energy saving of 47%! Based on their higher efficiency, the use of bevel geared motors already pays for itself after a runtime of approximately 1000 operating hours.

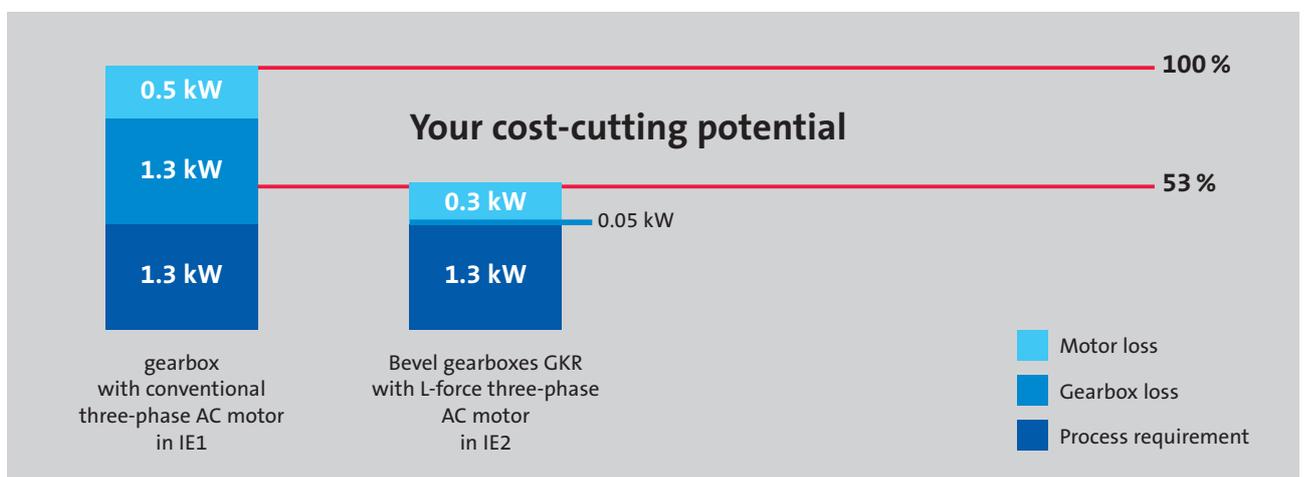
A slightly higher initial investment therefore pays for itself quickly, benefiting you as well as the environment.

## Bevel gearbox

- ▶ Higher efficiency
- ▶ Low weight
- ▶ Low-wear gear tooth system

## Three-phase AC motor

- ▶ Three-phase AC motors MH (according to IE2)
- ▶ Three-phase AC motors MF (inverter-optimised)
- ▶ Diverse motor feedback systems
- ▶ Large brake option
- ▶ Surface and corrosion protection



# Drive Solutions | with L-force gearboxes

The options of the L-force geared motors also include the appropriate versions for many individual electromechanical drive applications.

## 8400 motec Drive Packages

The gearbox, motor and 8400 motec decentralised motor inverter in Drive Packages work in perfect harmony with one another. The appeal of these compact packages lies in their energy efficiency and optimum cost-per-kW ratio.

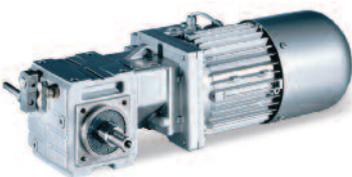
This decentralised drive solution reduces installation and commissioning time, as well as keeping the number of shielded motor cables involved to a minimum. As a result, the Drive Package is particularly well placed to meet the requirements of systems engineers with decentralised concepts.



Power range 0.37 ... 3.0 kW

## Monorail overhead conveyors

Monorail overhead conveyors (MOC systems) are used in many areas of internal material handling engineering. With their high level of automation, they are a flexible and efficient means of transportation.



Power range 0.12 ... 5.5 kW

## Geared servo motors

Compact geared motors for the most demanding requirements and robustness for servo applications. Together with the Lenze servo inverters, these geared motors form the perfect drive unit with high dynamic performance.

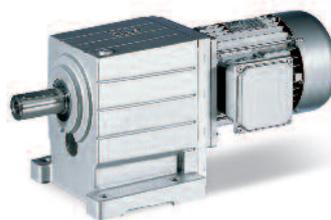
The low-backlash gearboxes on the synchronous and asynchronous servo motors are the perfect solution, for example, for high positioning accuracy.



Power range 0.25 ... 20.3 kW

## ATEX geared motors

European ATEX guidelines regulate the use of operating procedures in potentially explosive atmospheres. Lenze offers gearboxes and geared motors that comply with the ATEX guidelines and hence facilitate machine and plant acceptance.



Power range 0.06 ... 45 kW

# It's good to know | why we are there for you



*"Our customers come first. Customer satisfaction is what motivates us. By thinking in terms of how we can add value for our customers we can increase productivity through reliability."*



*"We will provide you with exactly what you need – perfectly co-ordinated products and solutions with the right functions for your machines and installations. That is what we mean by 'quality'."*



*"Take advantage of our wealth of expertise. For more than 60 years now we have been gathering experience in various fields and implementing it consistently and rigorously in our products, motion functions and pre-configured solutions for industry."*



*"The world is our marketplace. Wherever you are in the world, we are nearby, providing you with our drive and automation solutions."*

Algeria · Argentina · Australia · Austria · Belarus · Belgium · Bosnia-Herzegovina · Brazil · Bulgaria · Canada · Central America · Chile · China · Colombia · Croatia · Czech Republic · Denmark · Egypt · Estonia · Finland · France · Germany · Greece · Hungary · Iceland · India · Indonesia · Iran · Israel · Italy · Japan · Latvia · Lebanon · Lithuania · Luxembourg · Macedonia · Malaysia · Mauritius · Mexico · Morocco · Netherlands · New Zealand · Norway · Philippines · Poland · Portugal · Romania · Russia · Serbia-Montenegro · Singapore · Slovak Republic · Slovenia · South Africa · South Korea · Spain · Sweden · Switzerland · Syria · Taiwan · Thailand · Tunisia · Turkey · Ukraine · United Arab Emirates · United Kingdom/Eire · USA · Vietnam

**You can rely on our service. Expert advice is available 24 hours a day, 365 days a year, in more than 30 countries via our international helpline: 008000 24 Hours (008000 2446877).**

[www.Lenze.com](http://www.Lenze.com)

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