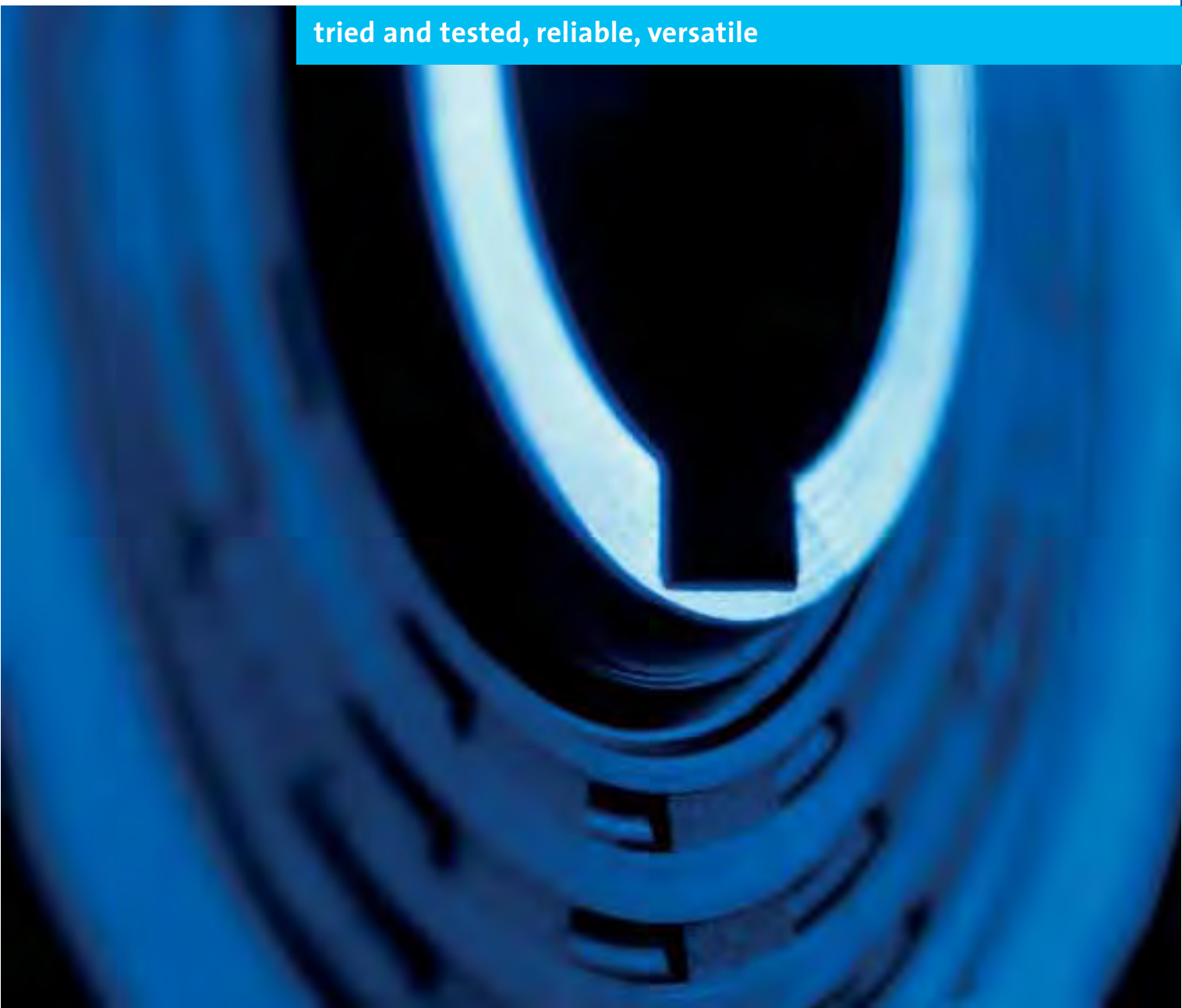


# G-motion

*The geared motor range*



tried and tested, reliable, versatile



**Lenze**

# Innovative geared motors | Lenze G-motion

**The G-motion range – a tried, tested and versatile range of geared motors covering all standard gearbox designs.**

The G-motion range of geared motors already comes with broad functionality as standard and is available with many useful options at the input and output ends, giving the user great versatility.

## **Gearbox types**

The gearboxes are available as

- ▶ Helical gearboxes
- ▶ Shaft-mounted helical gearboxes
- ▶ Bevel gearboxes
- ▶ Helical-bevel gearboxes
- ▶ Helical-worm gearboxes
- ▶ Servo planetary gearboxes

## **Speeds**

The wide range of gearbox ratios with close spacing makes it possible to closely match the actual drive features to the required process parameters.





### **G-motion const**

Geared motors and gearboxes with constant output speeds

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### **G-motion atex**

ATEX compliant geared motors and gearboxes

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### **G-motion m-var**

Geared motors with mechanical speed control

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### **G-motion motec**

Geared motors with integrated 8200 motec frequency inverter

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### **G-motion servo**

Dynamic geared servo motors

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### **G-motion EHB**

Geared motors for monorail overhead conveyor systems

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You will barely notice a Lenze drive doing its work. Whether in a construction crane or in the seemingly endless aisles of a high-bay warehouse – the unparalleled ability of our drives to adapt to the required machine or process parameters never fails to impress.

This is made possible by a well-equipped modular gearbox system that will provide you with virtually everything you could want. With a multitude of options at the input and output ends, it offers numerous additional functions and makes it easier to integrate the system into your machine.

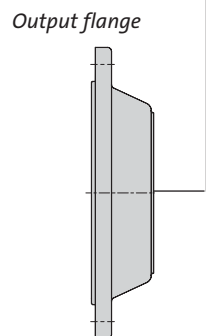
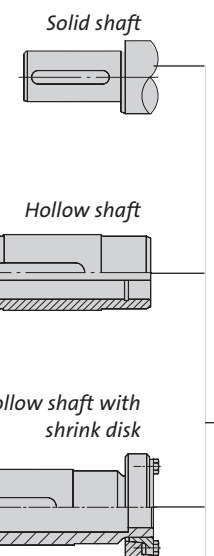
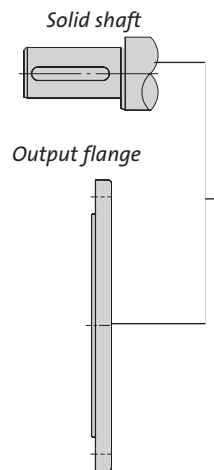
G-motion geared motors offer a broad power range from 0.06 to 45 kW.

Optimised profiles of the gear teeth and ground gears provide low noise operation and low backlash. The gearboxes are compact and feature space-saving designs.

Standard motors are designed to conform to IP55 and satisfy the requirements for efficiency class EFF 2. Insulation to thermal class F (usage in accordance with class B) and the integral temperature sensors mean the motors are ideally suited to frequency inverter operation.

G-motion geared motors are renowned for their high quality standards, which in turn benefit the machines and systems of our customers throughout their entire life cycle.

In order to demonstrate our confidence in the quality of our products we offer: **a 24-month warranty period throughout Europe.**



Motor starter  
starttec



**Helical geared motor GST**

0.06 ... 45 kW  
≤ 6000 Nm



**Shaft-mounted helical geared motors GFL**

0.12 ... 45 kW  
≤ 11300 Nm



**Bevel geared motors GKR**

0.06 ... 7.5 kW  
≤ 450 Nm



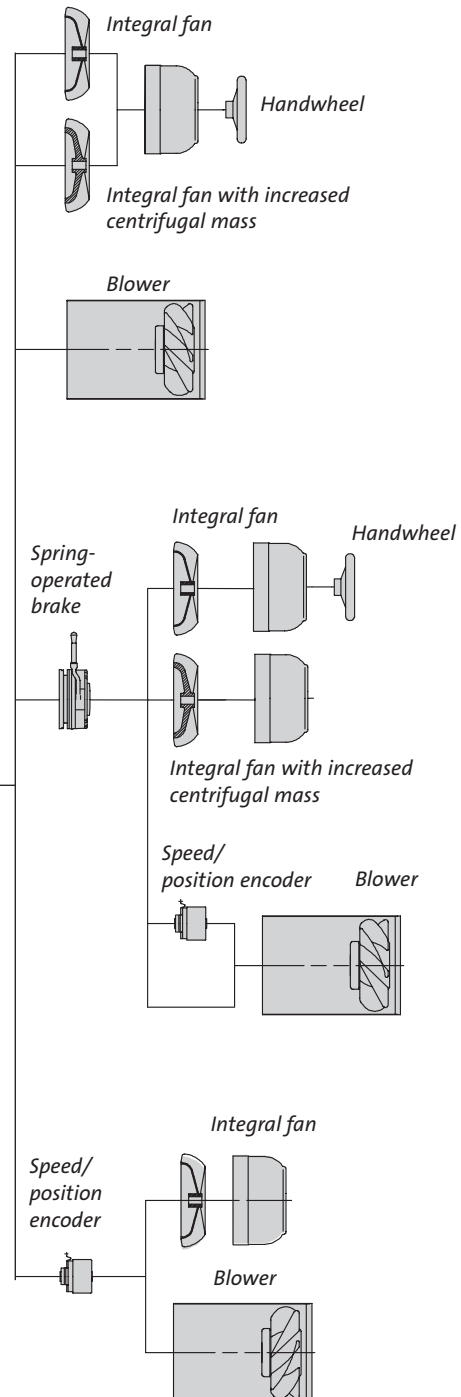
**Helical-bevel geared motor GKS**

0.12 ... 45 kW  
≤ 11800 Nm

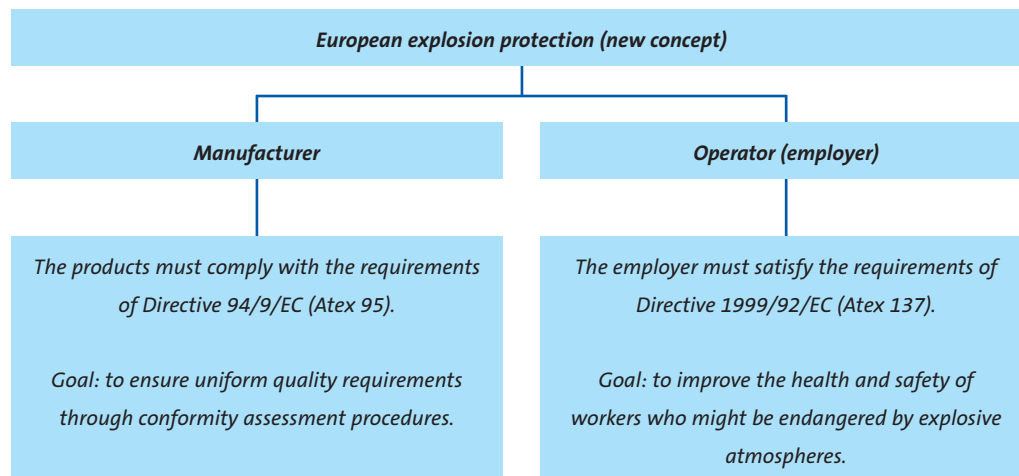


**Helical-worm geared motors GSS**

0.12 ... 15 kW  
≤ 1250 Nm



## Atex harmonisation of explosion protection in Europe



The European Atex Directive has been in force since July 1 2003; it regulates the use of equipment in potentially explosive atmospheres.

Lenze can supply gearboxes and geared motors that comply with the requirements of the Atex Directive and thus facilitate acceptance testing of machinery and systems.

### The gearboxes:

- ▶ Atex category 2 for thermal classes T3 and T4
- ▶ The gearboxes cover a power range up to 45 kW

- ▶ Can be mounted directly onto a motor using a Lenze mounting flange or with an input-side IEC motor adapter
- ▶ Integrated inspection glasses for easy oil checks
- ▶ Only synthetic lubricants are used

### The motors:

- ▶ Integrated motors for categories 2G, 2D and 3G, 3D
- ▶ For IEC motor adapters for categories 2GD and 3GD, flameproof motors for frequency inverter operation



## Geared motor with integrated frequency inverter

The integrated 8200 motec frequency inverter enables the requirements placed on decentralised drive systems to be more than satisfied.

The drastic reduction in assembly and commissioning times plus the ability to minimise the number of shielded motor cables are two of the main reasons why decentralised concepts are becoming increasingly attractive for system engineers with materials handling applications compared to conventional control cabinet solutions.

The robust motor inverter is superbly well equipped. The IP55-rated enclosure is combined with a geared motor from the G-motion range to ensure problem-free operation, even under extreme conditions.

As it makes the most of all of the benefits of the modular geared motor range, this successful combination of mechanical systems and drive electronics has now become a standard feature of

many applications. Thanks to insulation which satisfies thermal class F (usage in accordance with class B) and the integral temperature sensors, the motors are ideal for frequency inverter operation.

The numerous options available for the 8200 motec frequency inverter enable the range of potential applications and functions to be expanded.

With a power range of 0.12 ... 7.5 kW, the integrated 8200 motec motor inverter covers a broad spectrum of decentralised drive solutions.

Parameter setting, operation and diagnostics, on-site or via a fieldbus connection, are simplicity itself.

This makes for efficient installation, assembly and commissioning of your systems, and in the unlikely event of a problem, replacements are quick and easy to fit, thus reducing down times.



# G-motion | servo

**G-motion servo: innovative geared motors combined with powerful drive electronics to meet the highest standards in terms of dynamics, positioning accuracy and robustness.**

Featuring a wide variety of geared motors in the following variants:

- ▶ Helical gearboxes
- ▶ Shaft-mounted helical gearboxes
- ▶ Bevel gearboxes
- ▶ Helical-bevel gearboxes
- ▶ Helical-worm gearboxes
- ▶ Servo planetary gearboxes

Lenze offers high levels of functionality whilst complying with many industrial standards. Closely stepped output speeds allow you to find the perfect drive for your task.

Lenze servo geared motors are available in a power range from 0.25 to 20.3 kW.



Together with the Lenze servo controllers, these geared motors provide a perfect drive combination, with excellent dynamic properties.

- ▶ Power range of the synchronous servo motors: 0.25 to 10 kW
- ▶ Power range of the asynchronous servo motors: 0.8 to 20.3 kW



## Speed variation by means of mechanical variable speed drives

The Lenze mechanical variable speed drives in the Simplabelt and Disco ranges have proved highly successful in many drive applications. For years, they have been delivering reliable continuous operation.

The combination of tried and tested planetary variable speed drives and variable speed belt drives with the G-motion modular gearbox concept ensures optimum adaptation to process parameters based on classic mechanical concepts.

### Simplabelt

One of the main strengths of this robust and versatile variable speed belt drive is its compact design. With a large power range from 0.25 to 45 kW and an adjustment range of 1:6, the benefits of the Simplabelt can be used to great advantage in numerous applications.

The key advantages of the Simplabelt gearboxes are that they are maintenance-free with a long service life and have a self-centring mechanism with symmetrical backlash compensation.

Moreover, they are extremely smooth running, with large surface areas for transmission of the torque. All functional parts are made of corrosion-proof materials, enabling operation of the Simplabelt even under difficult ambient conditions.

### Disco

The Disco range has been successfully tried and tested for many years. It is representative of a range of steplessly adjustable variable speed drives that operate on the basis of a friction-type connection in accordance with the planetary principle. Eight different sizes are on offer in this large range, so a matching variable speed drive is available for every speed range.

The Disco planetary gearboxes cover a power range of 0.25 ... 7.5 kW, with an adjustment range of 1:6. The internal power sharing within the gearboxes enables particularly compact dimensions in relation to the transmitted power, with low noise and smooth running characteristics.



# G-motion | Monorail overhead conveyor

**Monorail overhead conveyors (MOC systems) are used in many areas of materials handling in the factory and, with their high level of automation, create a flexible and efficient means of transportation – particularly in the automotive industry. Together with decentralised motor control units they form a complete solution for a variety of applications.**

With its geared motors and decentralised motor control units, Lenze offers a complete drive system for monorail overhead conveyors based on co-ordinated components.

With their compact dimensions and high radial load-bearing capacity, Lenze geared motors are well suited to monorail overhead conveyors.

- ▶ Torques of up to 900 Nm
- ▶ Radial loads of up to 36000 N
- ▶ Mechanical disconnect clutch for disconnection of torque
- ▶ Bevel teeth ensure operation with a high degree of efficiency
- ▶ Compact housing design
- ▶ Flexible mounting options in terms of carriage design thanks to flange mounting and threaded holes on the top/bottom of the gearbox

- ▶ Low noise thanks to the optimum geometry of the gear teeth and internally-ribbed cast iron housing
- ▶ Smooth running for vibration-free operation
- ▶ Co-ordinated decentralised motor control units with all the options of automated motion control

## **Broad application potential**

The monorail overhead conveyor geared motors for light load applications meet the requirements of VDI directive 3643 (C1 standard). They incorporate a reliable mechanical disconnect clutch that can be used to interrupt the torque transmission between the driven shaft of the gearbox and the drive shaft of the motor. This makes it possible to move the carriage by hand if required.

The clutch lever is located on the opposite side to the motor. This layout also allows the geared motor to be used in industrial trucks. In addition to the flange-mounted design, the gearboxes are also available with threaded bores on the top and bottom, providing flexible mounting options.

The drive can be disassembled quickly for service purposes, without removing the running gear. This reduces downtime and thus costs.



# G-motion | taking the strain out of choosing the right drive

The Lenze product catalogues already describe numerous drive combinations – but these are only a selection from the technically feasible solutions. Challenging applications demand high-performance tools and broad application knowledge.

The Drive Solution Catalogue (DSC) offers customers various user-friendly options for selecting components beyond the scope of the catalogue: either via mechanical parameters like power, speed and torque, but also via the type code.

Scalable filters help to keep the number of solutions presented within realistic limits.

The Drive Solution Catalogue (DSC) is available both as a web-based tool and as a workstation version. The workstation version requires Microsoft® Windows® 2000 or Windows® XP.

Once a drive has been selected, 2D or 3D data files can be easily created with “3D-CADman”.

