



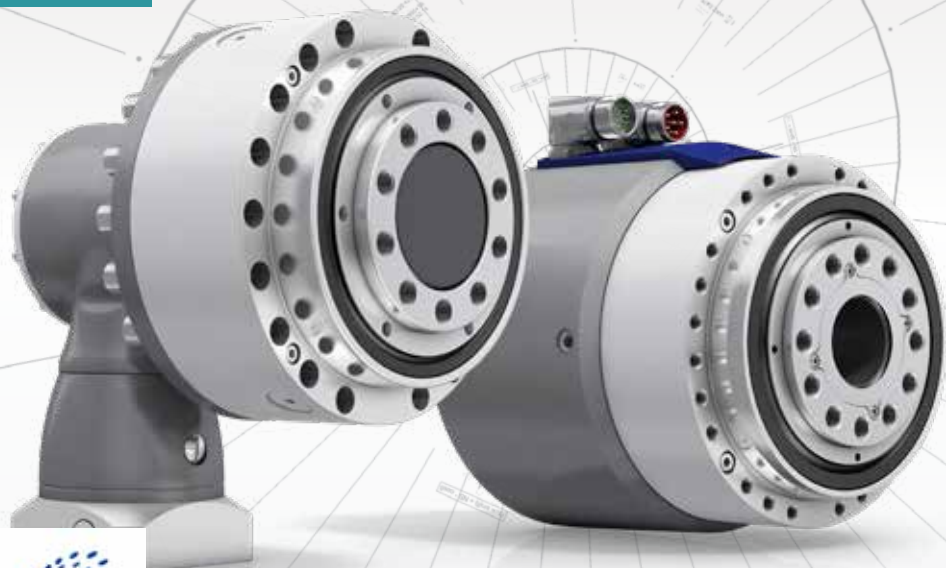
WITTENSTEIN

galaxie

# Galaxie®

## Superior on principle

Hollow shaft  
Very high torque  
Very high torsional rigidity  
Absolute zero backlash  
Industry 4.0 connectivity



# Fundamentally new overall concept

When we developed the Galaxie®, we took it upon ourselves to subject drive concepts to a fundamental reassessment. The result: a brand new type of gearbox. Its unique kinematics enable virtually full surface contact during power transmission. This means that the compact Galaxie® Drive Systems and gearboxes with hollow shaft achieve previously inconceivable performance. These include extremely high torque density, torsional rigidity, smooth running, positioning accuracy and completely backlash-free operation.

## From Linear to Surface Contact

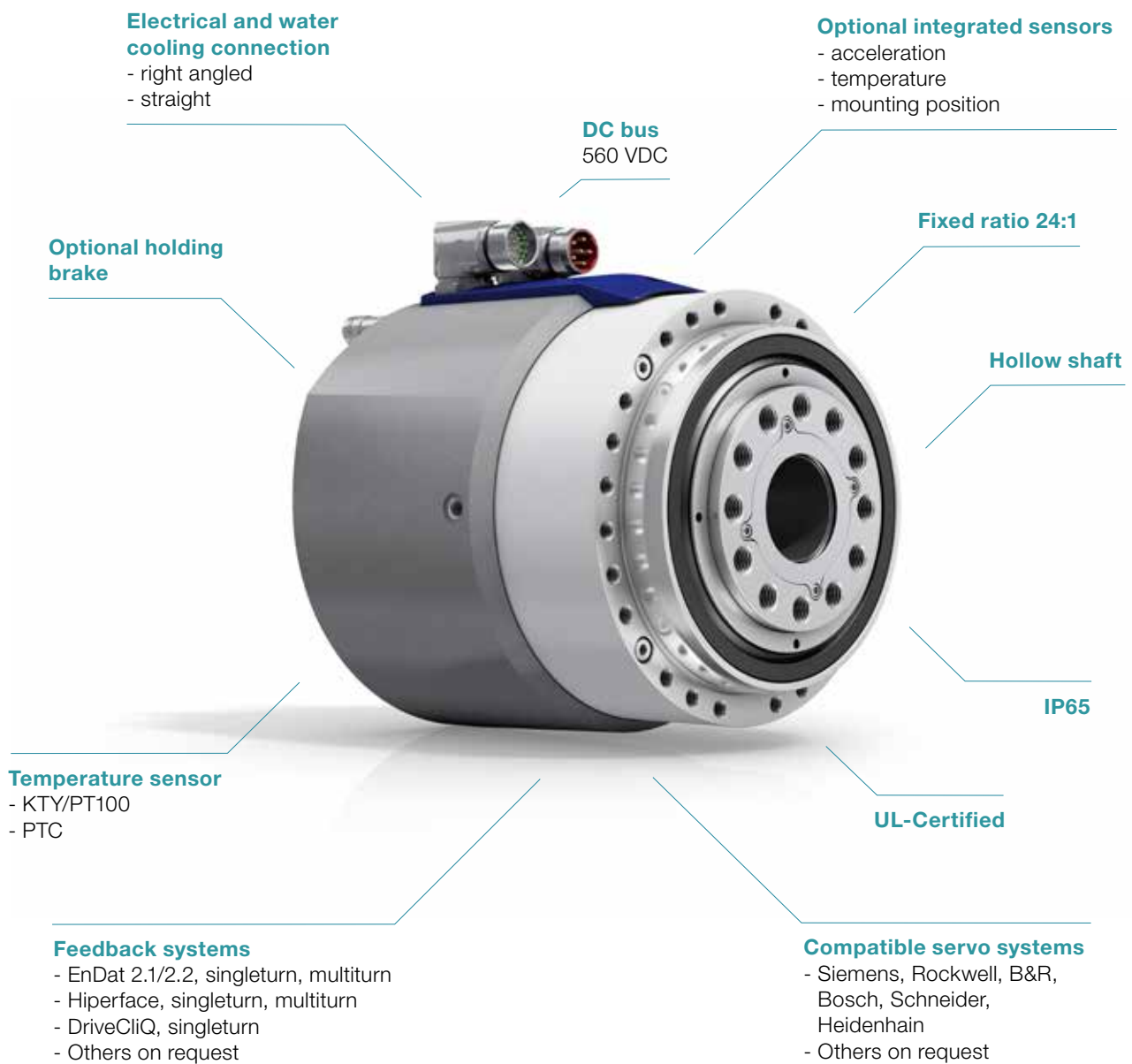
The innovative core of the new Galaxie® Drive System is the virtually full surface contact during power transmission. This achieves a tooth contact surface that is six and a half times larger compared to conventional involute teeth with typical linear contact. The resulting kinematics are fundamentally new: the gearbox is the only one of its kind in the world to guide a large number of individual teeth along an internal ring gear. The toothing is shaped as a logarithmic spiral, which allows the teeth to grip into the internal ring gear over a large surface.

## Next Technology Drive

The Galaxie® Drive System achieves a previously unattainable performance level: the gearbox boasts zero backlash – even at the zero crossing – while retaining full stiffness. The teeth follow a logarithmic spiral which ensures optimal synchronization accuracy. The system's performance features are all significantly better than those of traditional hollow-shaft drives with the same outer diameter.



# Product features



# An ingenious concept in three variants and six sizes

**Gearbox + motor  
= ultra-compact actuator**

**Gearbox + adapter plate  
= maximum flexibility**



## Galaxie® D

Hollow-shaft compact drive, axially integrated permanently excited synchronous motor with standard sensor systems.

## Galaxie® G

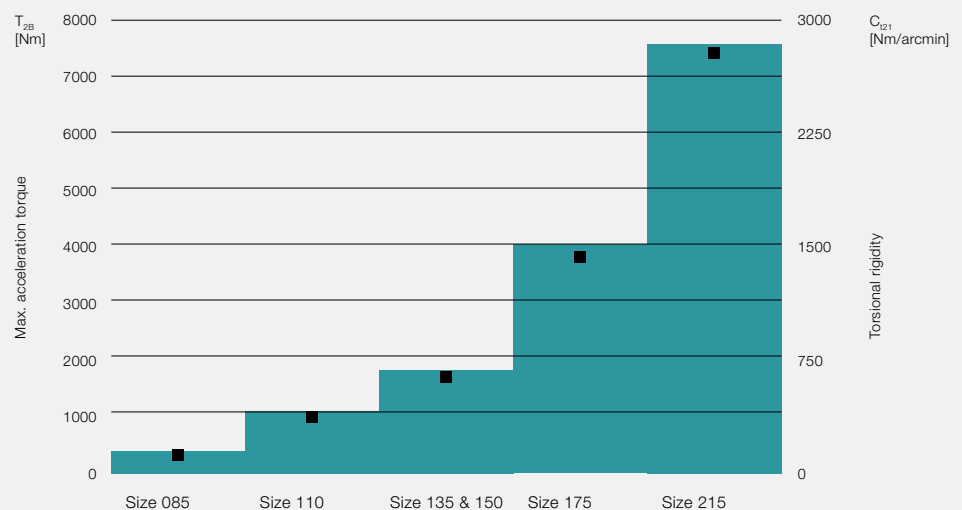
Backlash-free gearbox with optional coaxial planetary input stage and adapter plate for mounting on standard industrial servo motors.

## Galaxie® GH

Galaxie® right-angle gearbox with hypoid input stage and adapter plate for mounting on standard industrial servo motors.

## Comparison of the six sizes

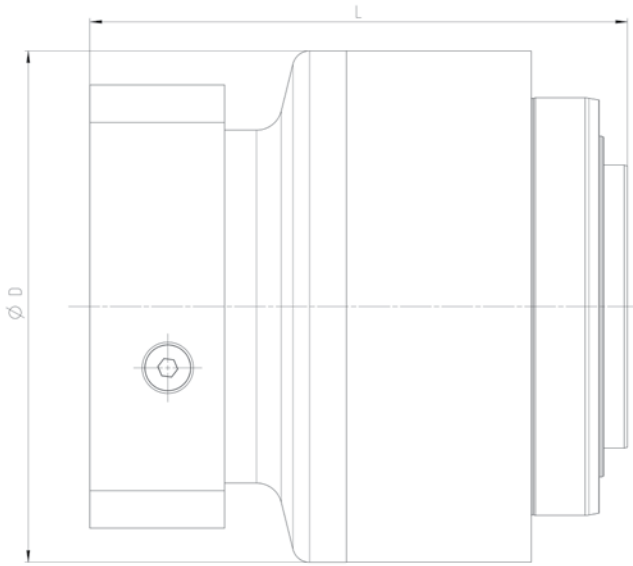
Maximum acceleration torque and torsional rigidity of different Galaxie® sizes



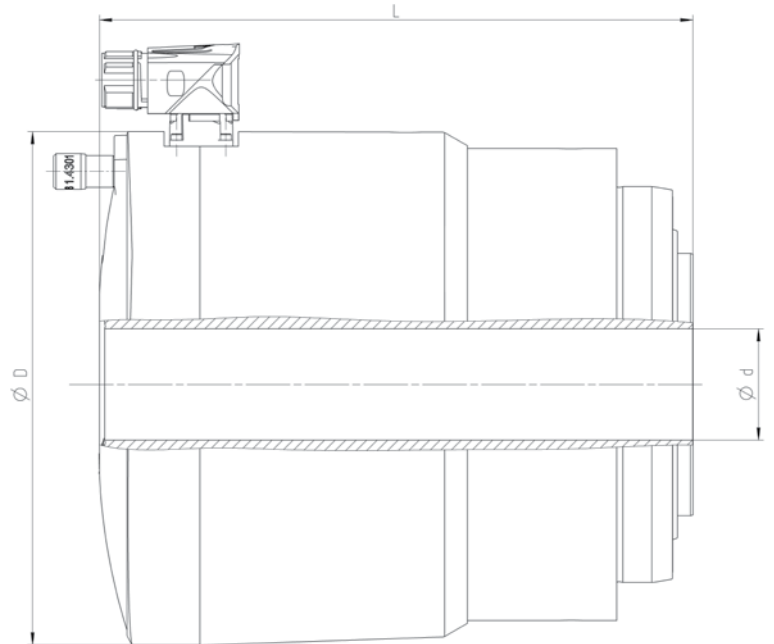
■ Torsional rigidity  
■ Acceleration torque

# Technical data

## Galaxie G



## Galaxie D



Frame size	Unit	85		110		135		150	175		215
Galaxie type		G	D	G/GH	D	G/GH	D	G	G/GH	D	G/GH
Outer diameter <sup>1</sup>	D [mm]	115	144	160	187	191	211	193	241	263	300
Hollow shaft diameter <sup>2</sup>	d [mm]	-	26	-	33	-	45	72	-	57	-
Length <sup>3</sup>	l [mm]	167	197	177	232	226	240	167	267	325	305
max. acceleration torque <sup>4</sup>	T <sub>2B</sub> [Nm]	450		1080		1800		1800	4050		7500
max. output speed <sup>4</sup>	n <sub>2max</sub> [rpm]	125		95		80		80	61		50
Nominal torque <sup>4</sup>	T <sub>2N</sub> [Nm]	190		450		750		750	1685		3130
Nominal output speed <sup>4</sup>	n <sub>2N</sub> [rpm]	30		23		20		35	15		12
Emergency stop torque <sup>4</sup>	T <sub>2Not</sub> [Nm]	1350		3000		5400		4500	12150		22500
Torsional rigidity <sup>4</sup>	C <sub>t21</sub> [Nm/arcmin]	160		370		650		650	1460		2700

<sup>1</sup> Values can be reduced due to thermal restrictions for the Galaxie D and limitations of the pre-stages for Galaxie G / GH

<sup>2</sup> Applies to D, GH with hollow shaft on request; slowly rotating

<sup>3</sup> Without water connections/deviations depending on preliminary stages and motor dependent adapter plates

<sup>4</sup> Values are subject to fluctuations of ± 10% due to factors beyond our control

# A new dimension in power

The Galaxie® Drive System sets a new benchmark for extreme compactness and very high dynamic precision with alternating loads. It creates totally new productivity opportunities for high performance engineering. Engineers and designers now have the opportunity to make real developmental leaps.

“Highest manufacturing quality with 10% more dynamics”  
Elektroimpact

“40% increase in productivity due to low vibration”  
Profiroll Technology

“Hysteresis measurements during operation thanks to extensive sensor technology”  
STAMA Maschinenfabrik

“50% shorter cycle time due to higher rigidity”  
Dreiling Maschinenbau



Ready for industry 4.0

Transmission of operating data throughout the drive life cycle – regardless of the control system







Superior  
on principle





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**WITTENSTEIN SE · Walter-Wittenstein-Straße 1 · 97999 Igersheim · Germany**

Tel. +49 7934 4931 8860 · sales-galaxie@wittenstein.de

WITTENSTEIN Inc. · USA

Tel. +1 888-534-1222 · galaxie-info@wittenstein-us.com

WITTENSTEIN GmbH · Austria

Tel: +43 2256 65632-0 · office@wittenstein.at

WITTENSTEIN GmbH · Switzerland

Tel: +41 81 300 10 30 · sales@wittenstein.ch

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**[www.wittenstein-galaxie.com](http://www.wittenstein-galaxie.com)**