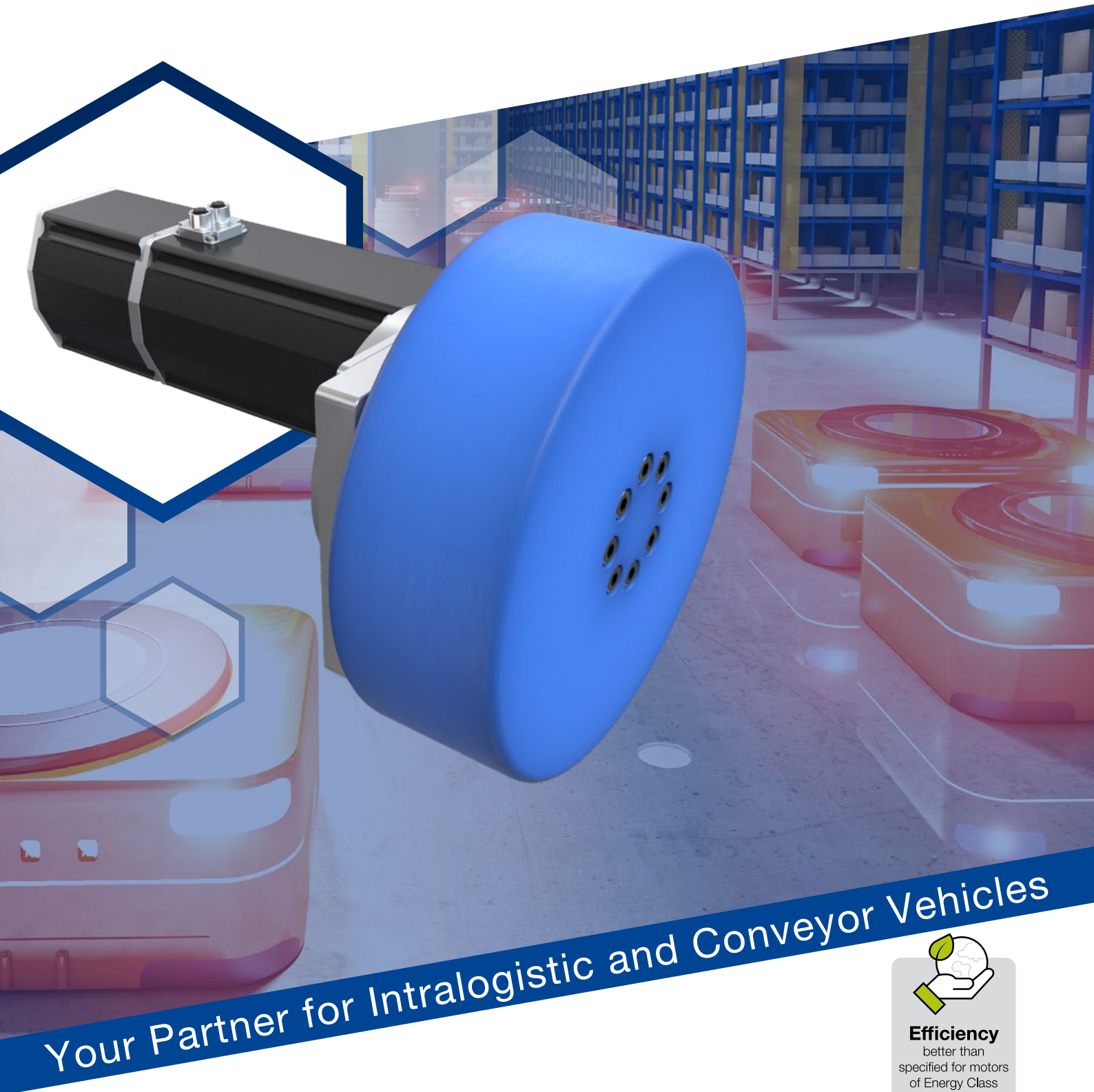




## Program for AGVs, AGCs and AMRs



Your Partner for Intralogistic and Conveyor Vehicles



**Efficiency**  
better than  
specified for motors  
of Energy Class  
**IE5**  
Super Premium



# Dunkermotoren - the market leader in complete drives for AGVs, AGCs and AMRs

## THE MARKET LEADER IN SMART BLDC MOTORS



- » Integrated 4Q motion controller with many features like temperature monitoring, recuperation, brake management, condition monitoring...
- » All common industrial interfaces (PROFINET with Profidrive AK4, EtherCAT with Distributed clocks, Ethernet/IP, CANopen)



- » Safe Torque Off (STO) - TÜV certified
- » Commissioning and parameterisation software DA 5
- » **nexofox** comprehensive IIoT solutions available from Dunkermotoren



## APPLICATIONS

- » Traction drive
- » Linear actuator
- » Rotary actuator
- » Steering drive

## MOTORS MADE FOR AGVS

- » NEW: Motor length BG 95x120 with up to 5 kW power at 48 VDC battery voltage
- » 12-60 VDC battery voltage with integrated Controller, up to 325 V Variants for external controllers
- » High efficiency for long battery life (better than IE5, up to >90%)
- » High overload capacity for acceleration and Brakes
- » 24 V version up to 3900 W peak output power
- » Steppers in sizes Nema 17, 23, 34
- Made in Europe



## EXTERNAL CONTROLLER CONCEPTS

- » Alternative external controllers for minimization of overall length
- » Versions compatible with SIMATIC MICRO-DRIVE PDC series with comprehensive safety functionality (STO, SS1, SLT, SLS, SSM) and PROFIsafe profiles available



## 1-STOP-SHOP

- » Smart BLDC Servo motors with integrated Motion Controller
- » Stepper Motors
- » Hub gears, Planetary and Angular gear units
- » Brakes and (safety) Encoders

## THE WIDEST SELECTION IN GEARBOXES

- » Hub gears for short designs and outstanding radial loads (sizes NG 250, NG 500, NG 1000 WO)
- » Bevel gear and planetary gear units in numerous versions
- » Customer-specific adaptations possible







# Example configurations for vehicle drives

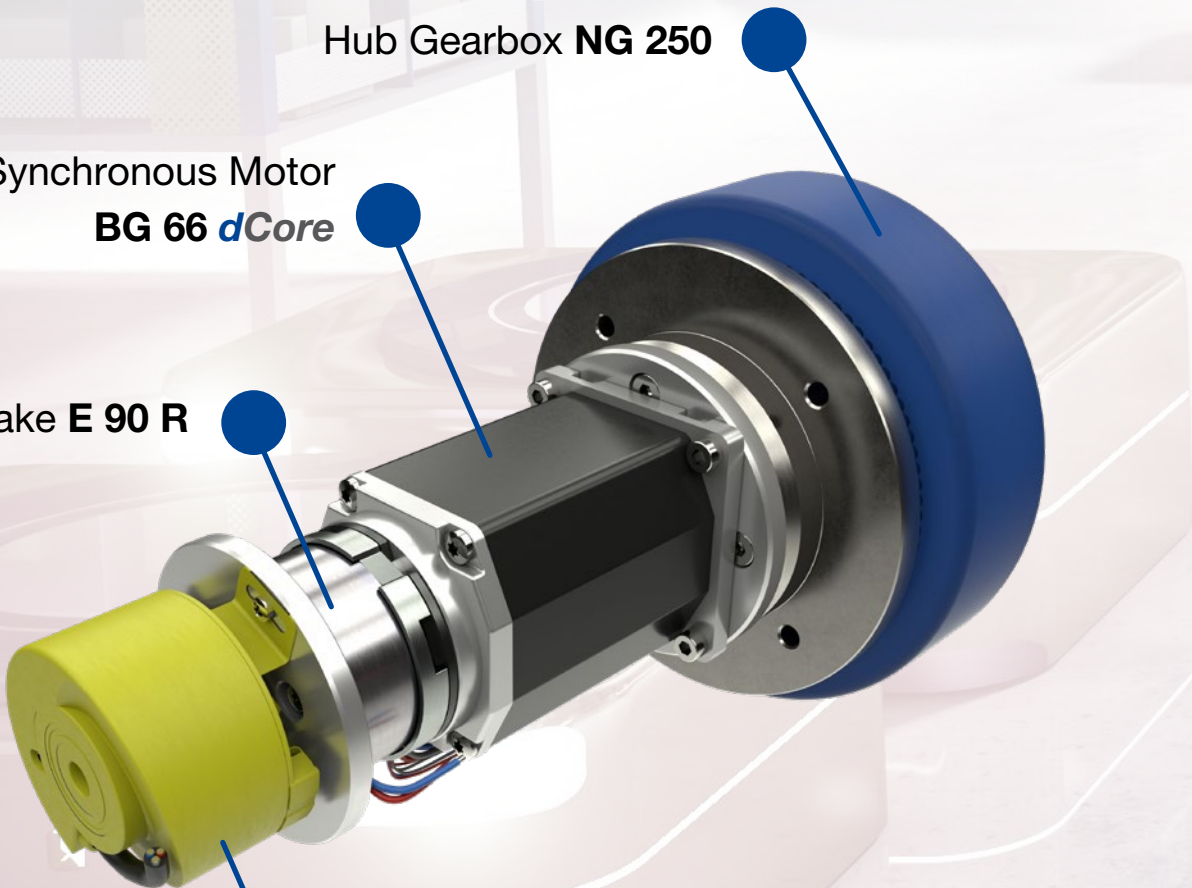
Motion Controller  
**BGE 5510 dPro**



Hub Gearbox **NG 250**

Synchronous Motor  
**BG 66 dCore**

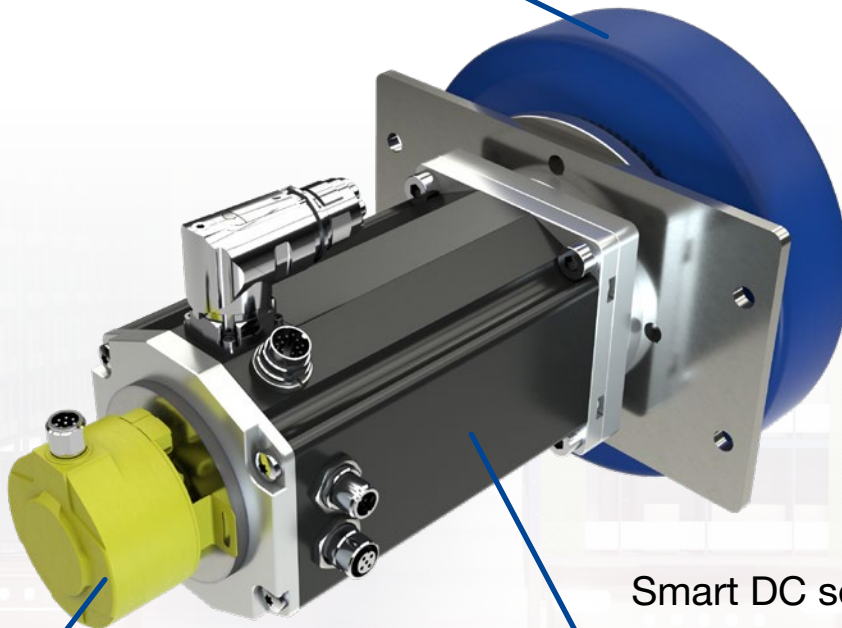
Brake **E 90 R**



Safety Encoder **DFS 60S**



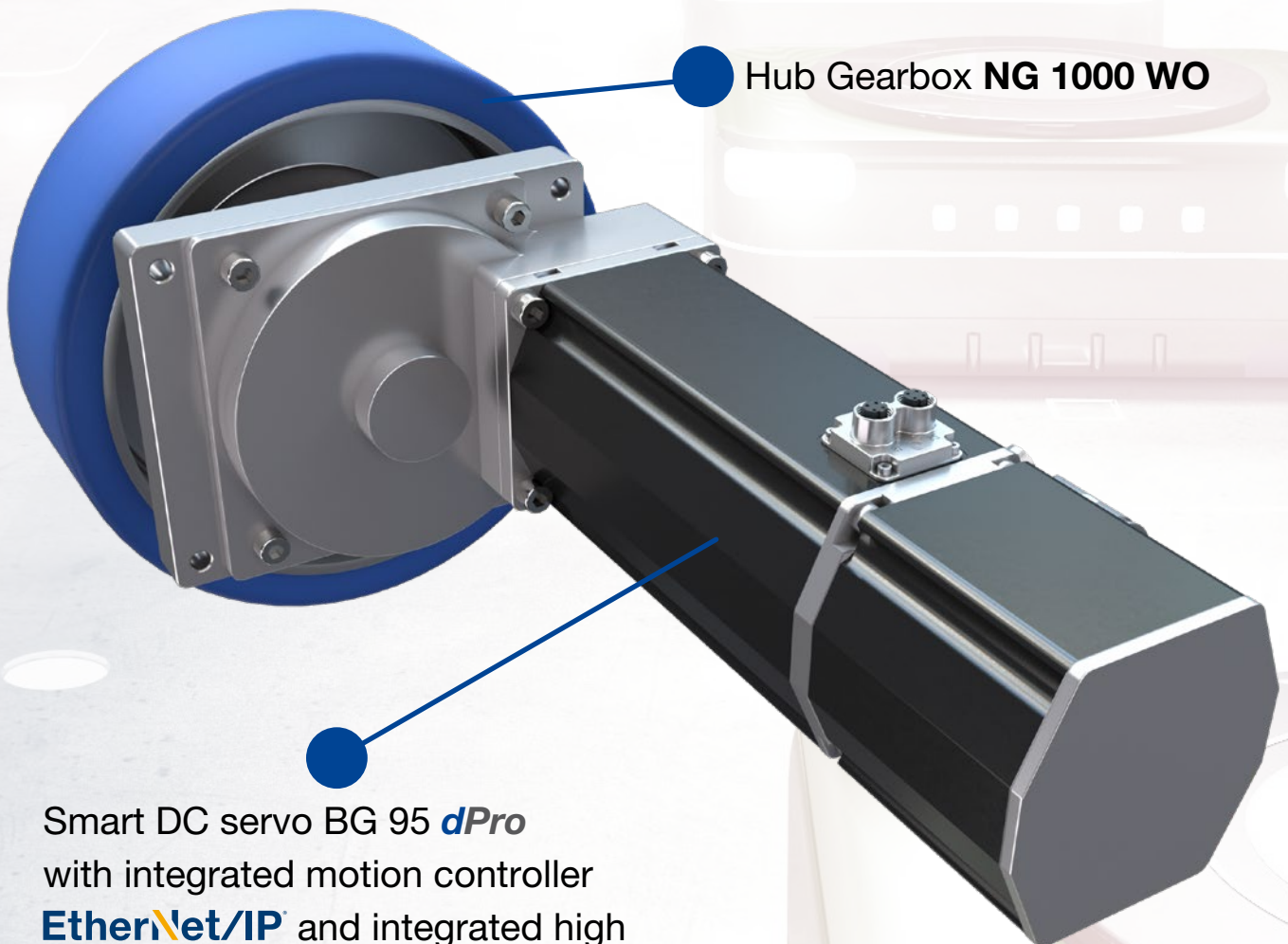
Hub Gearbox **NG 500**



Safety Encoder **SKM 36**

Smart DC servo BG 95 *dPro*  
with integrated motion controller  
**EtherCAT** and integrated high  
resolution Encoder

Hub Gearbox **NG 1000 WO**

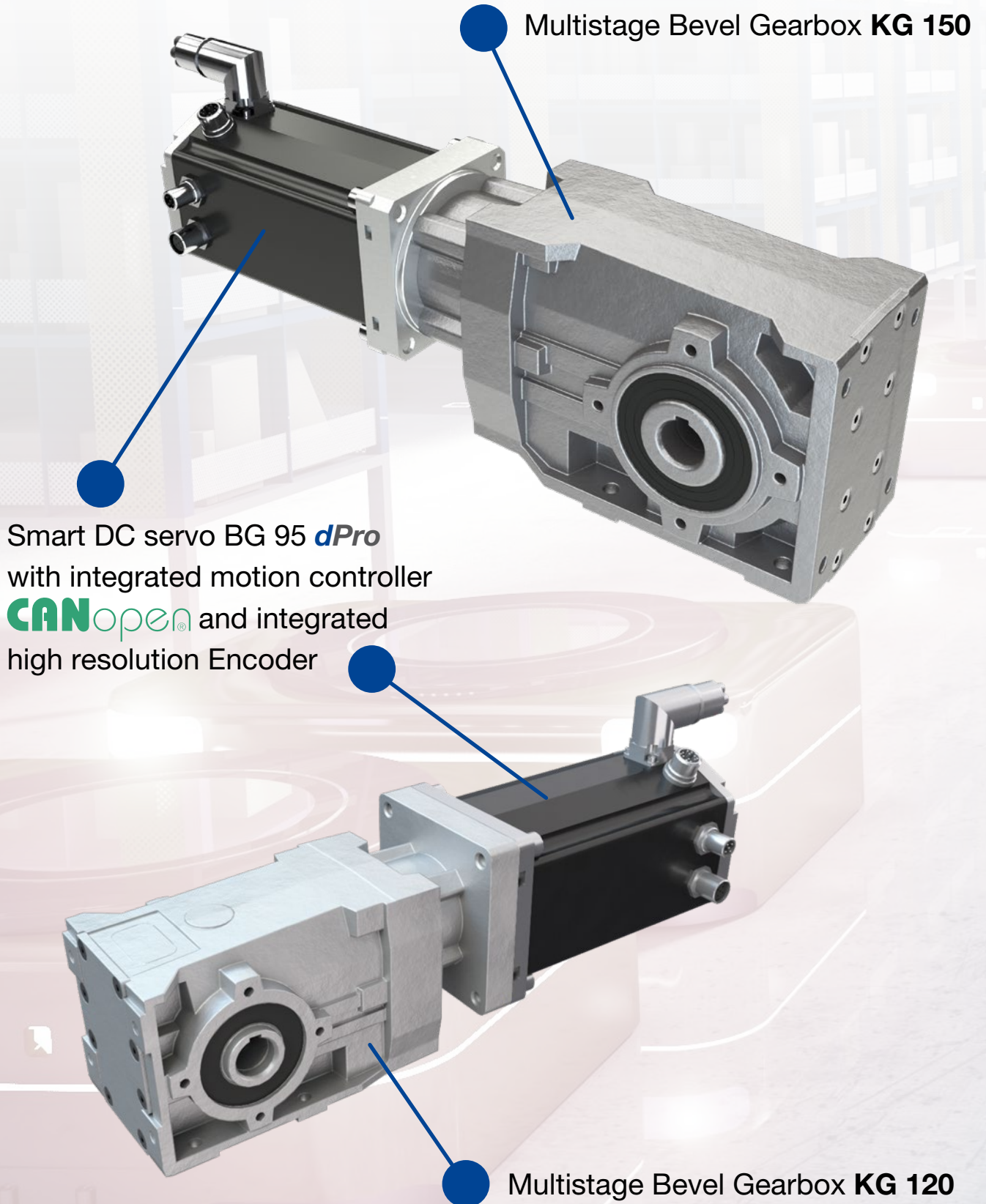


Smart DC servo BG 95 *dPro*  
with integrated motion controller  
**EtherNet/IP** and integrated high  
resolution Encoder with increased  
IP-Protection





## Example configurations for vehicle drives

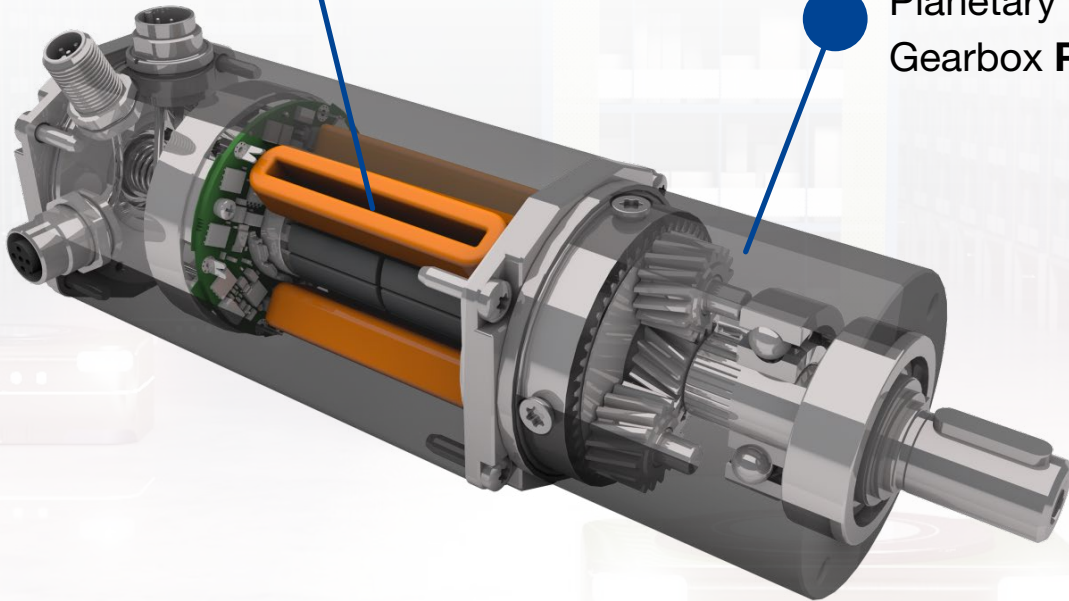




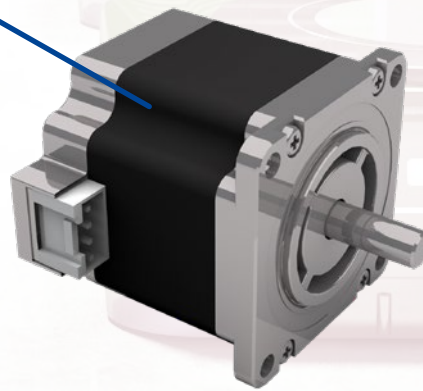
# Example configurations for lift applications

Servo Motor  
**BG 66 dPro**

Planetary  
Gearbox **PLG 63**

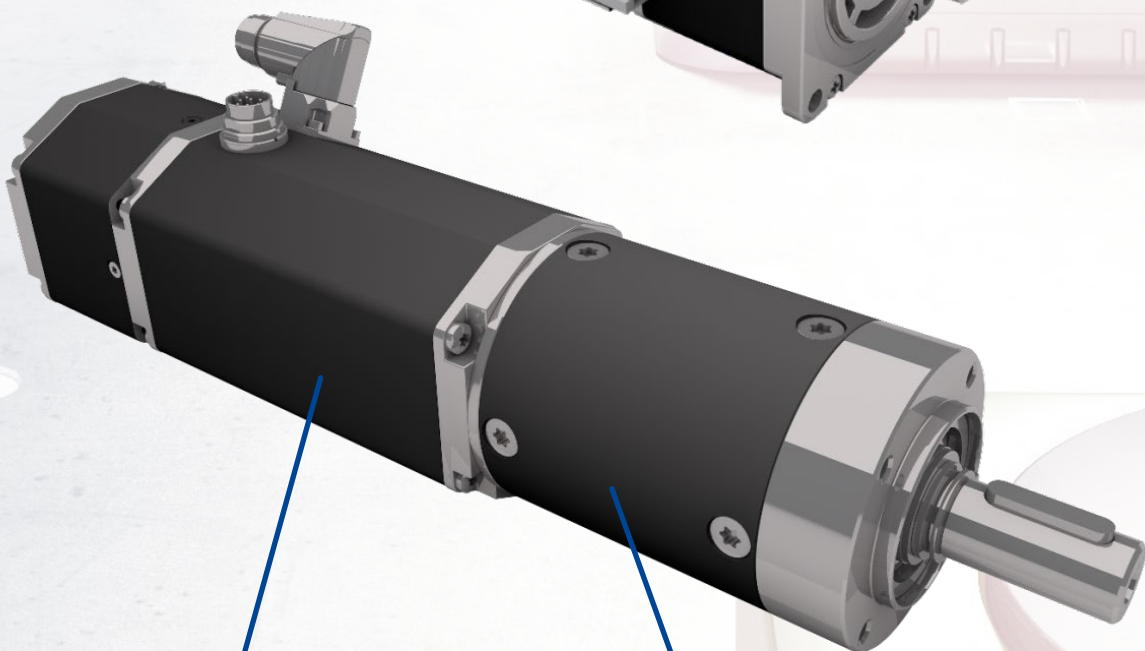


Stepper Motor  
NEMA 23 **ST 23**



Servo Motor  
**BG 75 dPro**

Planetary Gearbox  
**PLG 75**







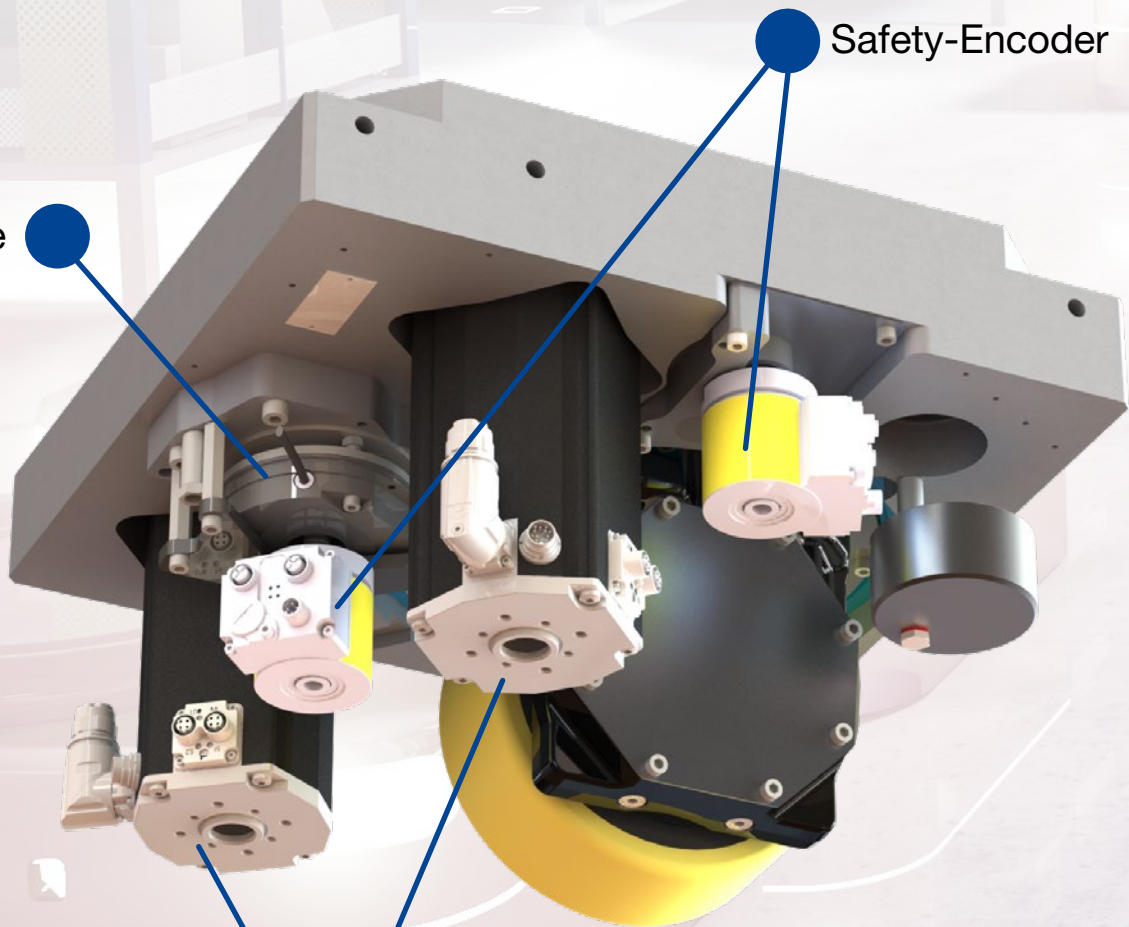
# Example configuration - Tekno M.P. Drive unit To-79

## OMNI DRIVE SYSTEM FOR MULTI-DIRECTIONAL VEHICLES

- » High efficiency both at high and low speed
- » Full range of sensors for traction, steering and navigation
- » Fixed cables, ideal for 360° continuous rotation
- » Very compact, ideal for use in flat vehicles

Brake

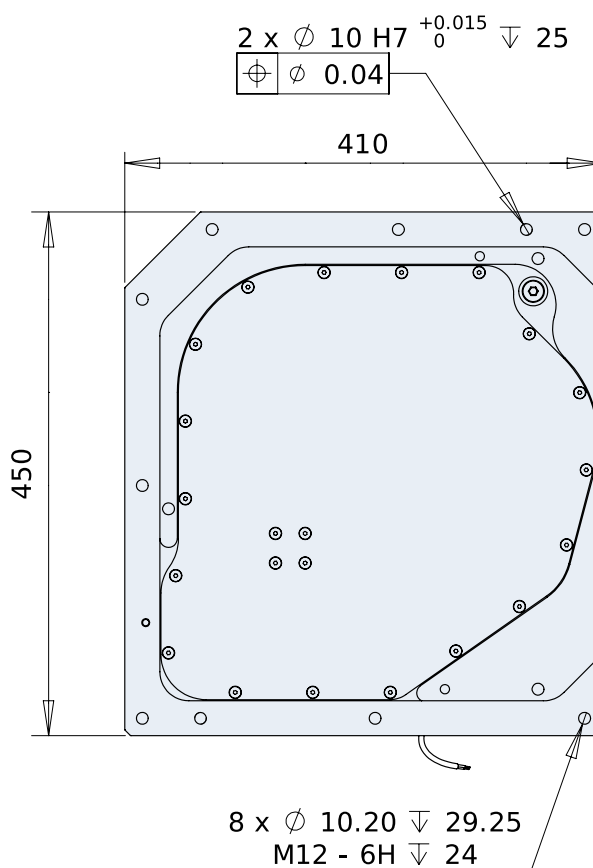
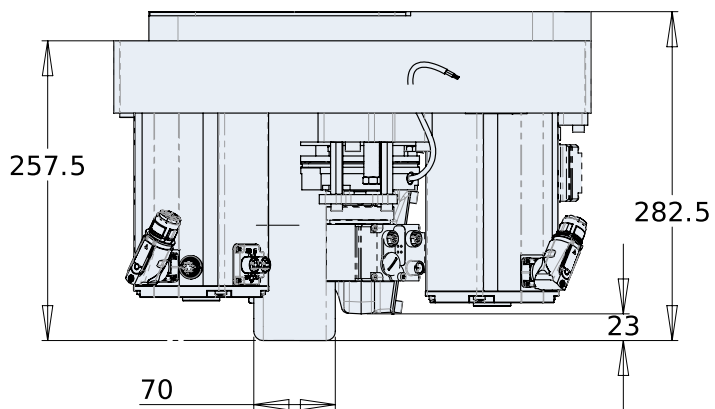
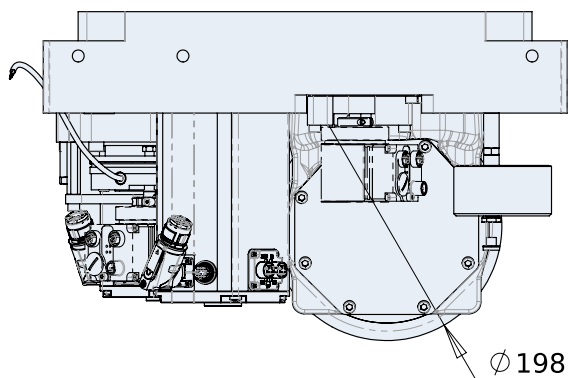
Safety-Encoder



Smart DC servo BG 95 **dPro**  
with integrated motion controller  
**PROFI**  
NET and integrated  
high resolution Encoder



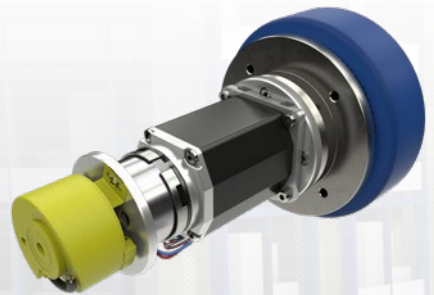
Dimensions To-79 (Tekno M.P.) in mm





# Hub Gearbox NG 250

- » Outstanding radial load capacity
- » Nearly no installation space required, as integrated in the hub
- » Durable robust design
- » Optional wheel lining in special materials



Lifetime lubrication



High efficiency



Protection class



Vibration resistance



High torque

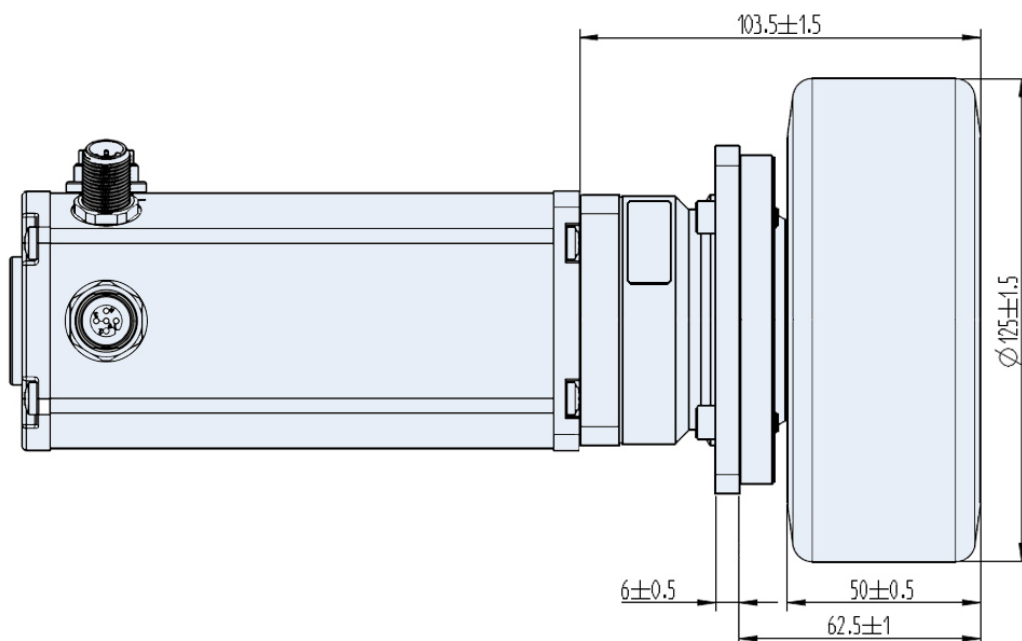


Longlife version

## Data | NG 250

Reduction ratio	-	4	5	8	16	20	32
Efficiency	%	90			85		
Number of stages	-	1			2		
Continuous torque	Nm	11	9	9	11		
Acceleration torque	Nm	22	18	18	22		
Emergency stop torque	Nm	33	27	27	33		
Operating mode	-	S1 / S8					
Max. backlash	arc-min	40			35		
Weight of gearbox	kg	3.8			4.5		
Axial load/ radial load	N	833 / 2500					

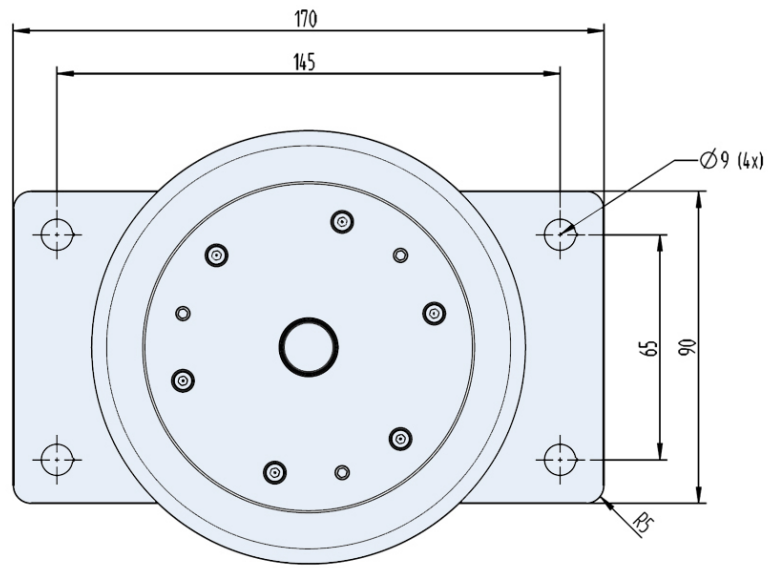
## Dimensions BG 66 + NG 250 in mm \*



\* For projects a combination with BG 75 is possible



Dimensions NG 250 in mm

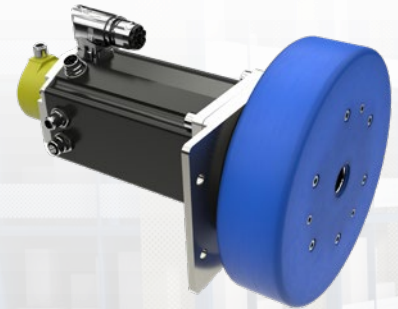


Radseite



# Hub Gearbox NG 500

- » Outstanding radial load capacity
- » Nearly no installation space required, as integrated in the hub
- » Durable robust design
- » Optional wheel lining in special materials



Lifetime lubrication



High efficiency



Protection class



Vibration resistance



High torque

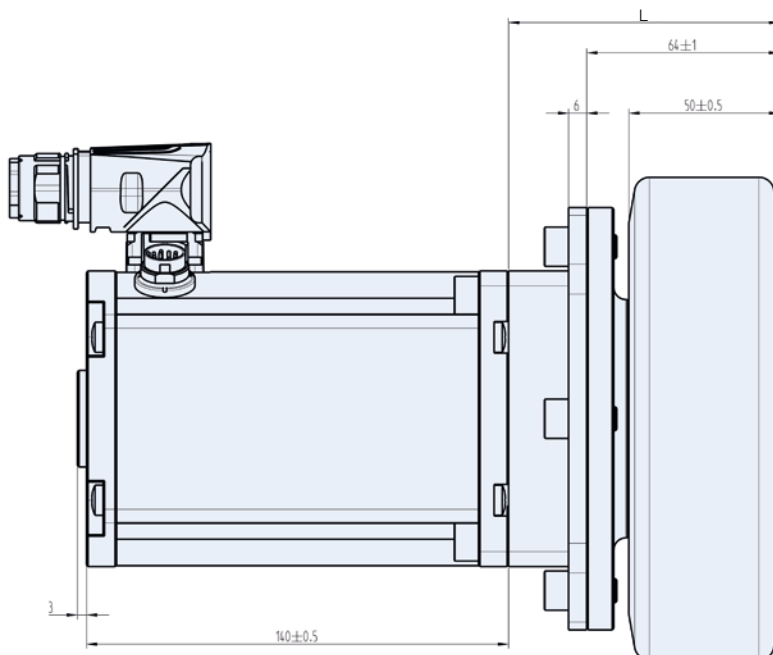


Longlife version

## Data | NG 500

Reduction ratio	-	4	5	8	16	20	32
Efficiency	%	90			85		
Number of stages	-	1			2		
Continuous torque	Nm	21	16	18	21		
Acceleration torque	Nm	42	32	36	42		
Emergency stop torque	Nm	63	48	54	63		
Operating mode	-	S1 / S8					
Max. backlash	arc-min	45			40		
Weight of gearbox	kg	7.8			9.2		
Axial load/ radial load	N	1667 / 5000					

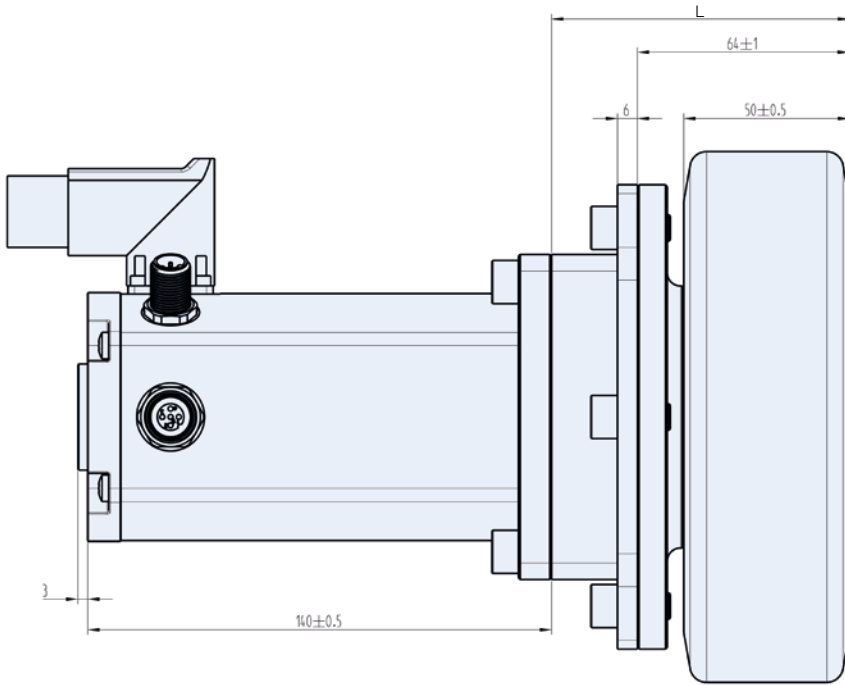
## Dimensions BG 95x40 dCore + NG 500 in mm



Length L mm	
1 stage	80
2 stages	90

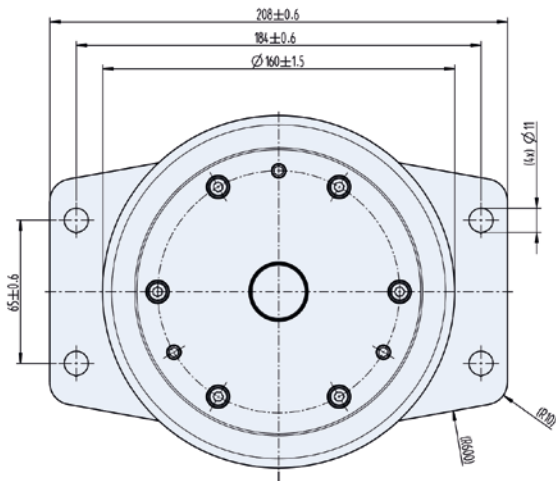


Dimensions BG 75x50 **dPro** + NG 500 in mm

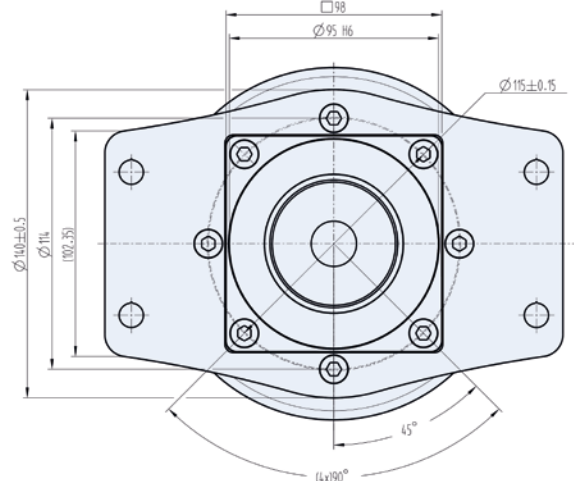


Length L mm	
1 stage	80
2 stages	90

Dimensions NG 500 in mm



Wheel side

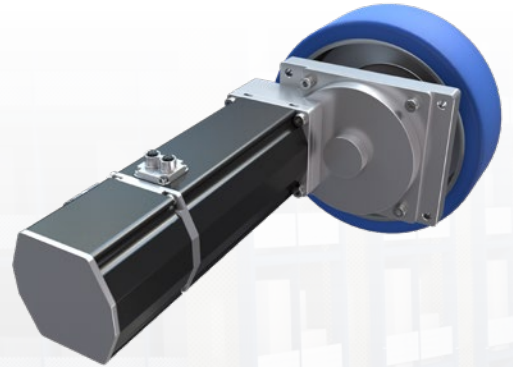


Motor side



# Hub Gearbox NG 1000 WO

- » Space-saving assembly due to axle offset
- » Outstanding radial load capacity
- » Nearly no installation space required, as integrated in the hub
- » Durable robust design
- » Optional wheel lining in special materials



Lifetime lubrication



High efficiency



Protection class



Vibration resistance



High torque



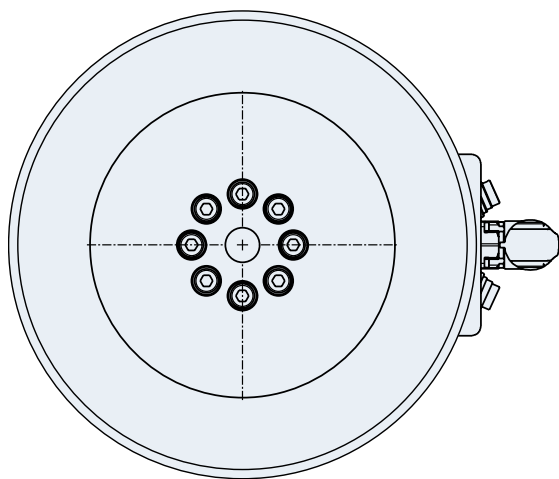
Longlife version

## Data preliminary | NG 1000 WO

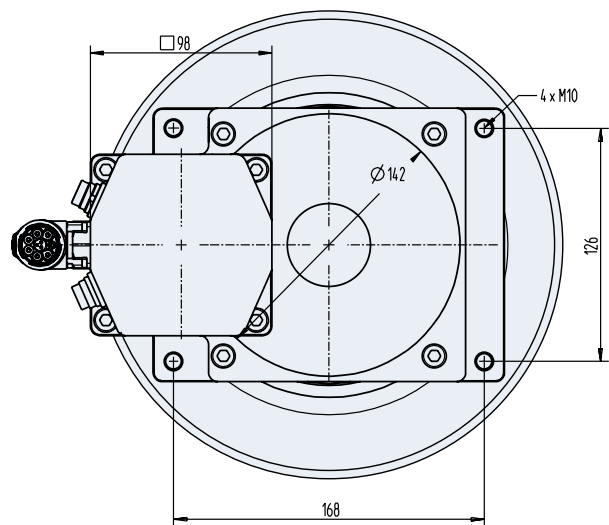
Reduction ratio *	-	20
Efficiency	%	85
Number of stages	-	2
Continuous torque	Nm	80
Acceleration torque	Nm	160
Operating mode	-	S1 / S8
Weight of gearbox	kg	ca. 12
Radial load	N	10 000

\* Further reduction ratios on request

## Dimensions BG 95x80 dPro + NG 1000 WO in mm



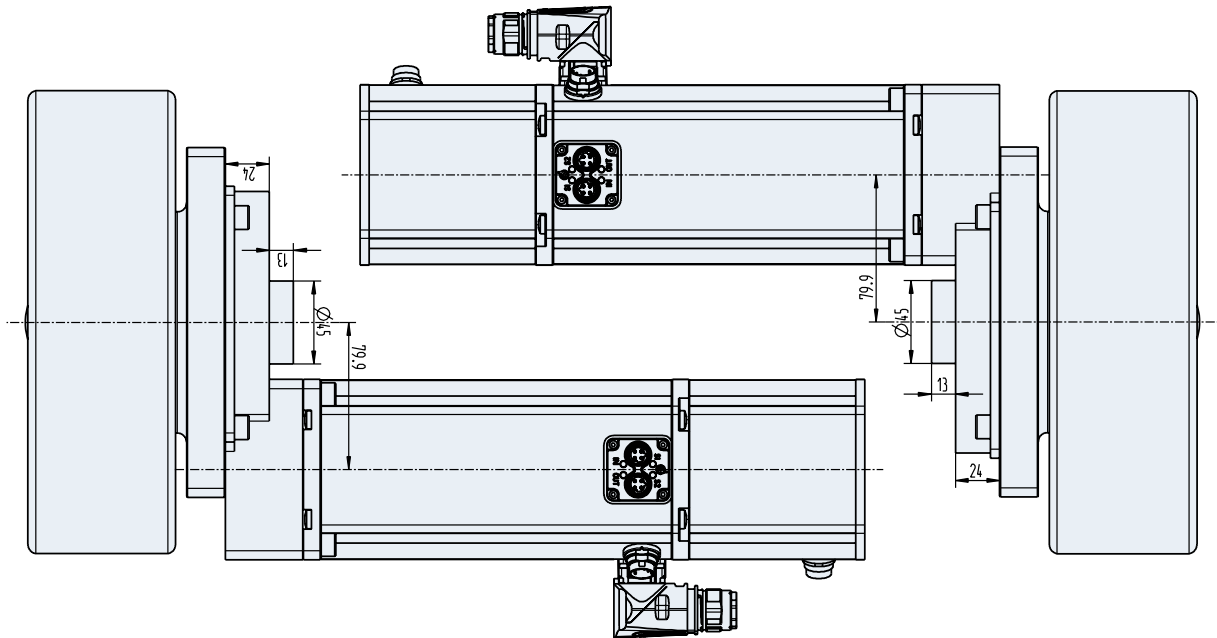
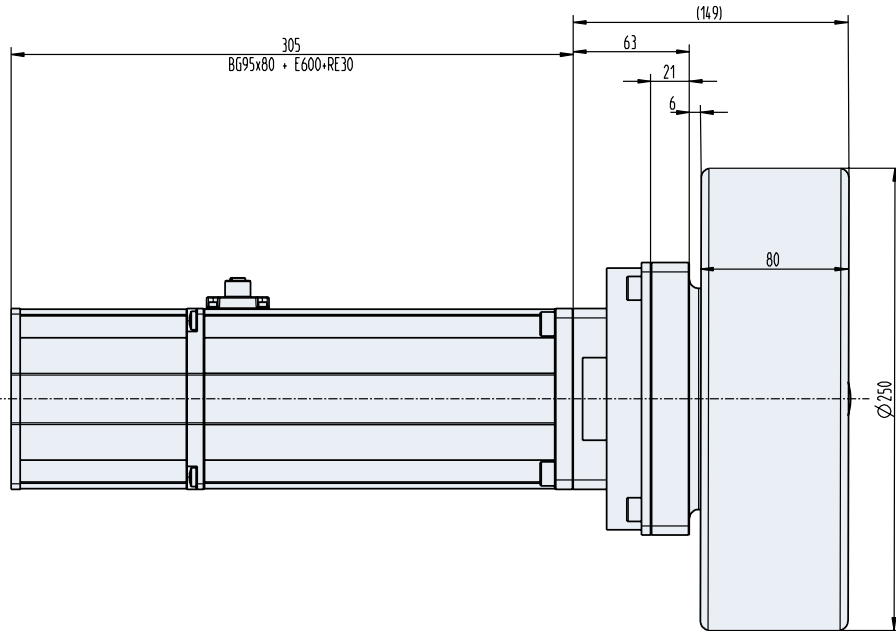
Wheel side



Motor side



Dimensions BG 95x80 dPro + NG 1000 WO in mm



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