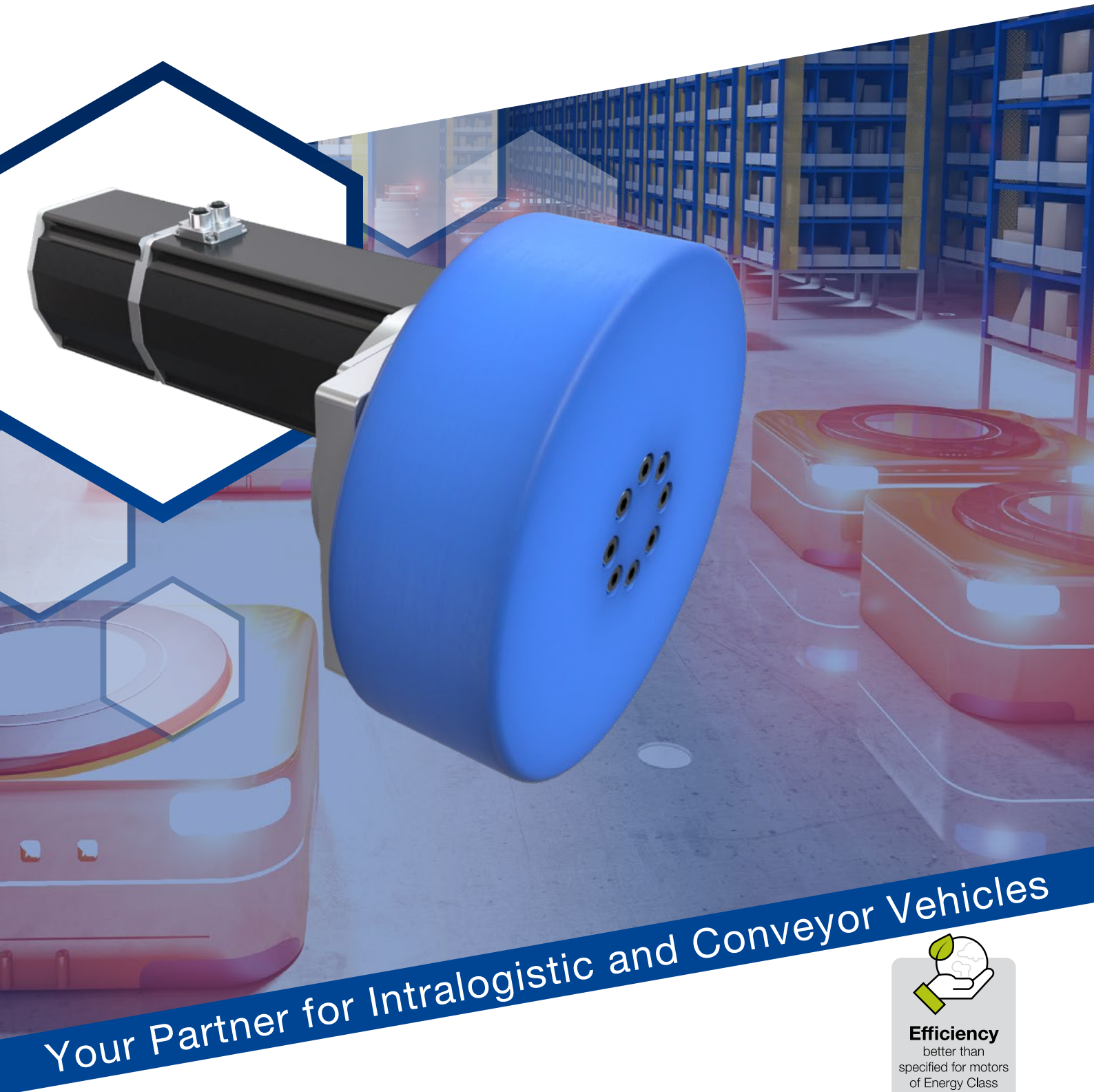


dunkermotoren

AMETEK[®]

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

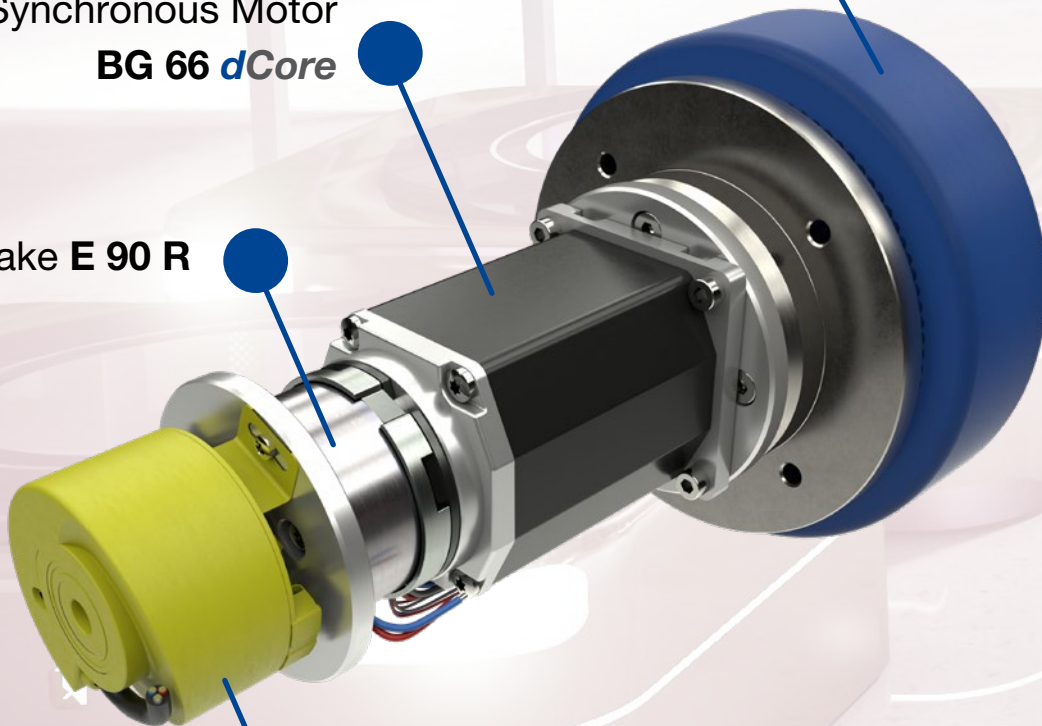
Motion Controller
BGE 5510 dPro



Hub Gearbox **NG 250**

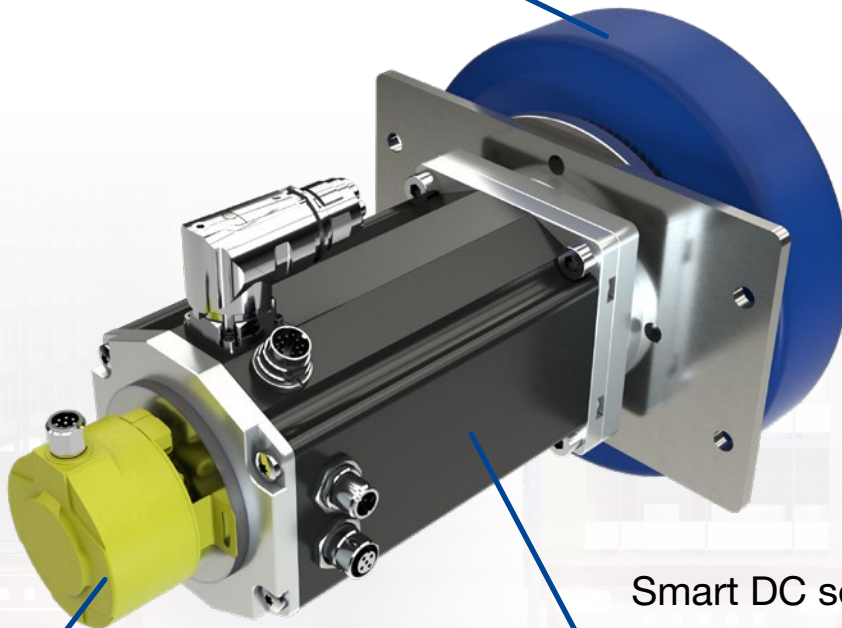
Synchronous Motor
BG 66 dCore

Brake **E 90 R**



Safety Encoder **DFS 60S**

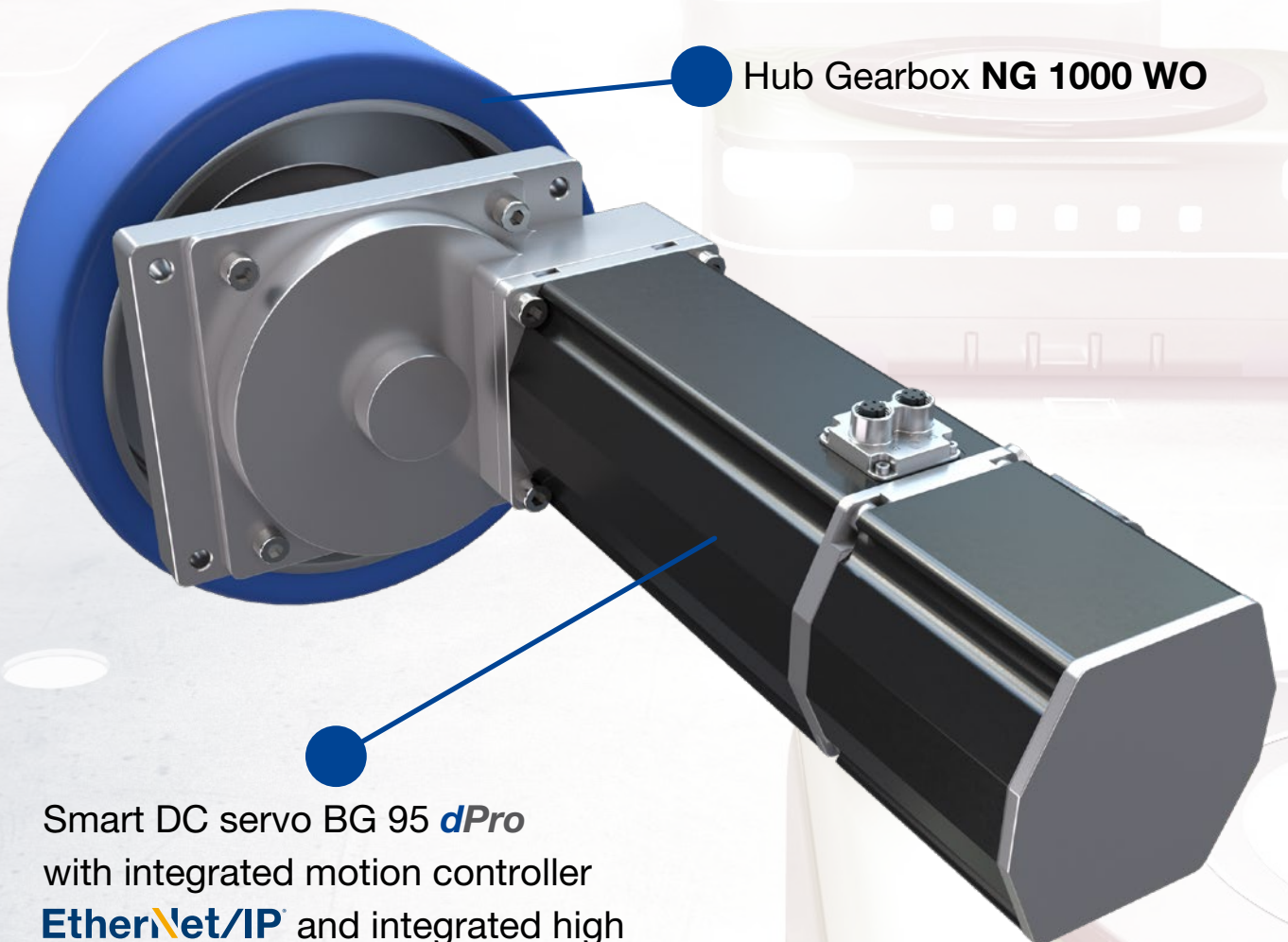
Hub Gearbox **NG 500**



Safety Encoder **SKM 36**

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

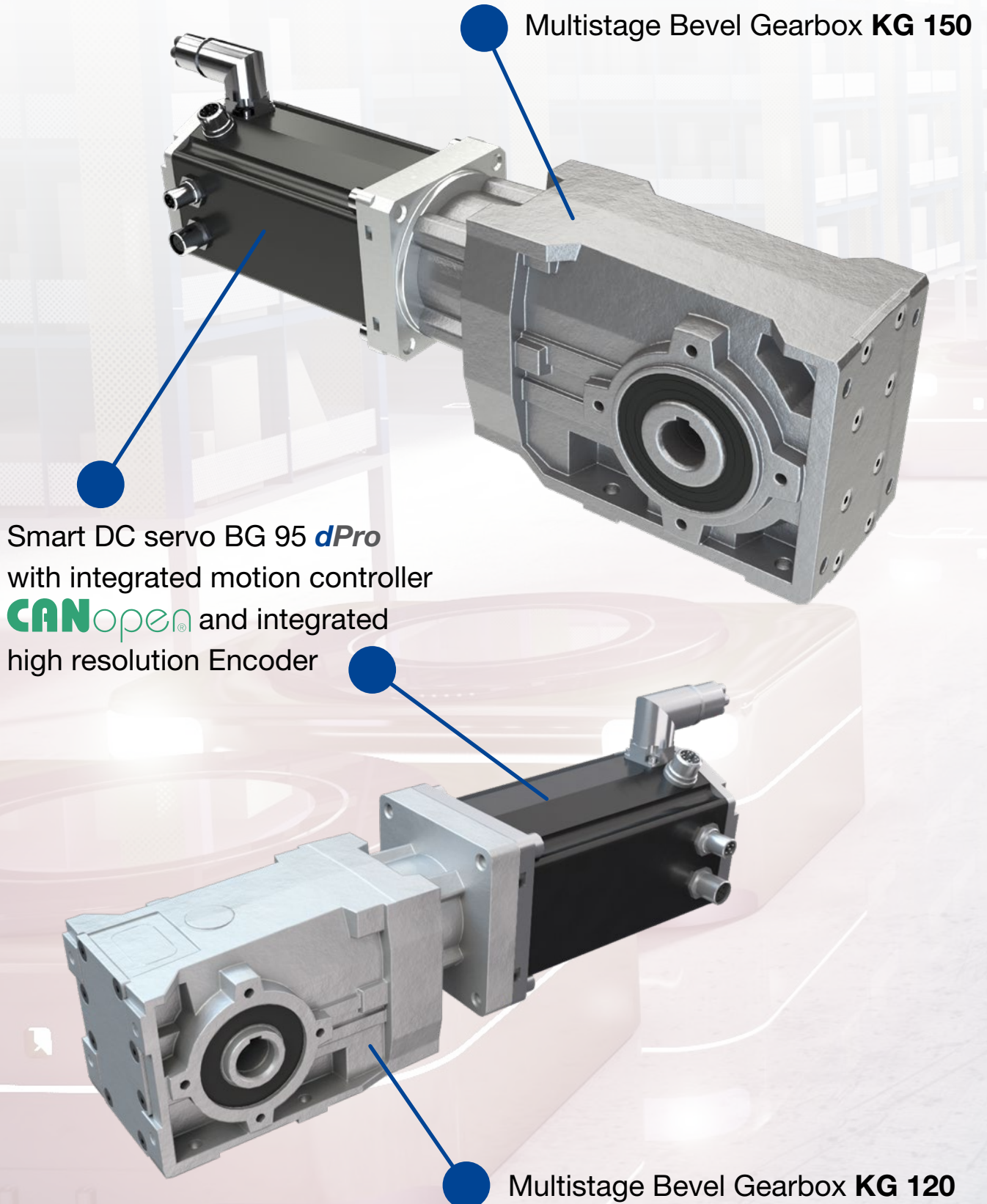
Hub Gearbox **NG 1000 WO**



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

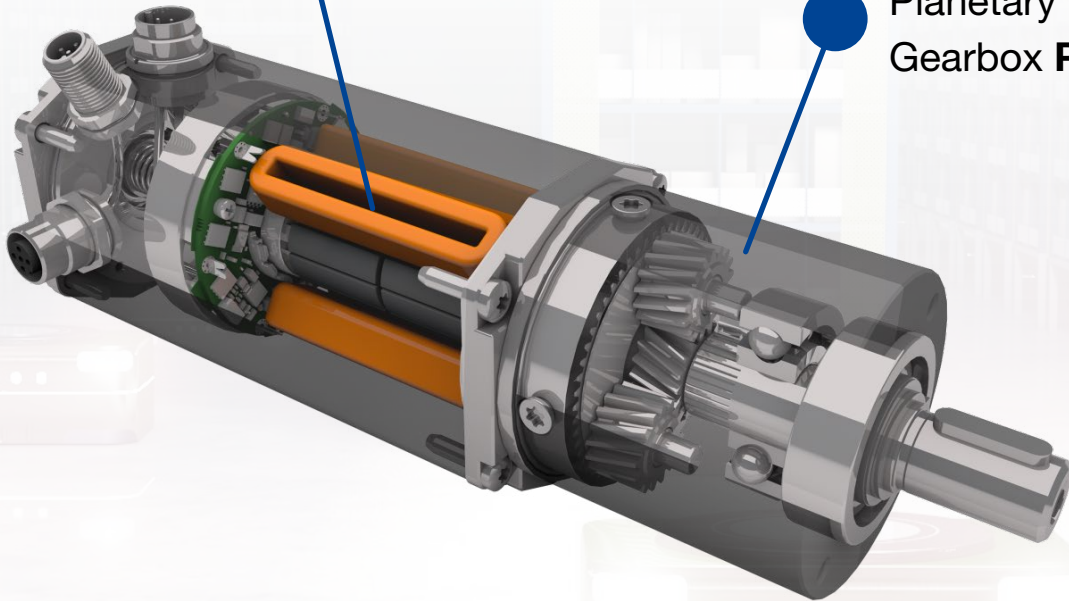




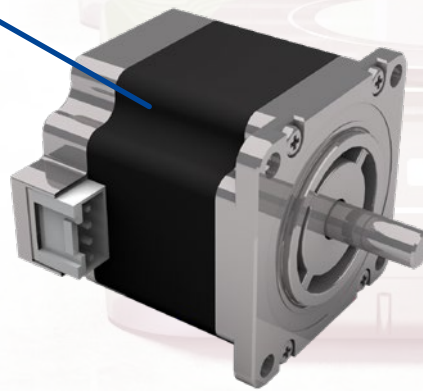
Example configurations for lift applications

Servo Motor
BG 66 dPro

Planetary
Gearbox **PLG 63**

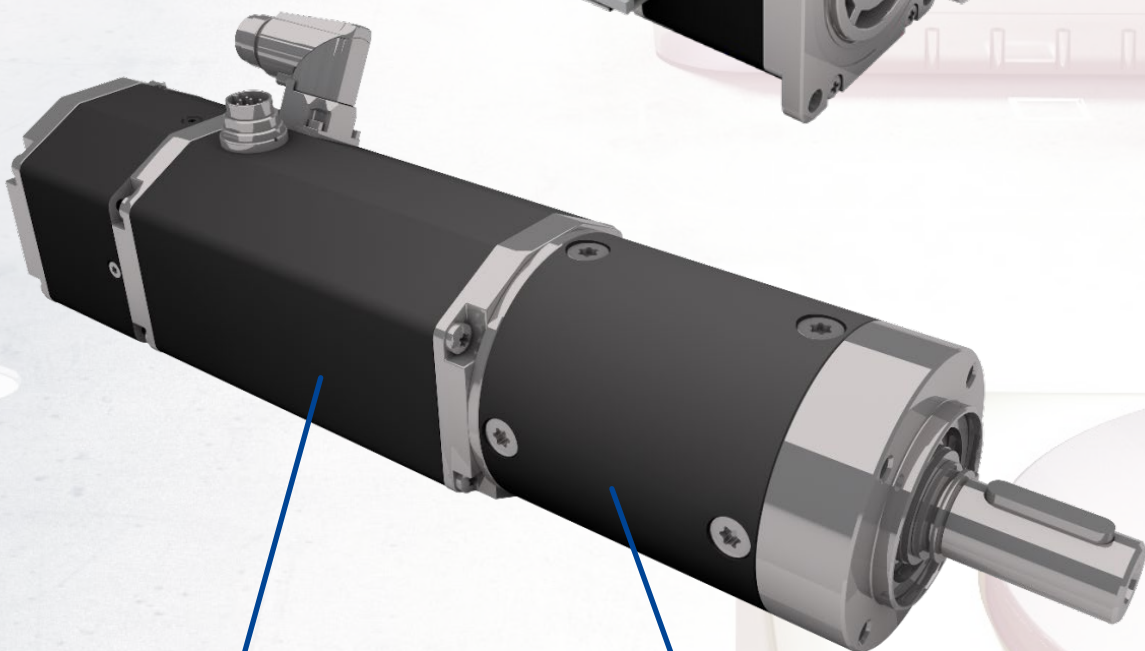


Stepper Motor
NEMA 23 **ST 23**



Servo Motor
BG 75 dPro

Planetary Gearbox
PLG 75





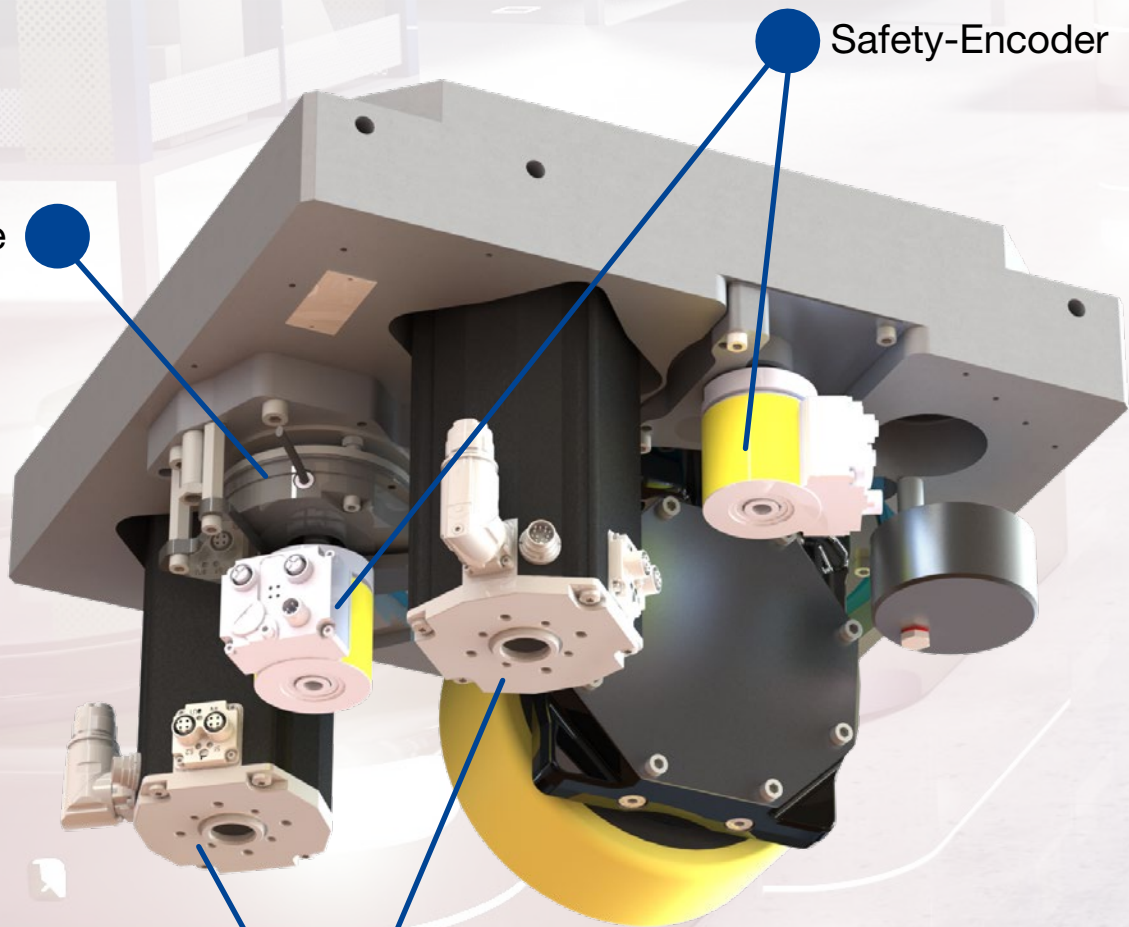
Example configuration - Tekno M.P. Drive unit To-79

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

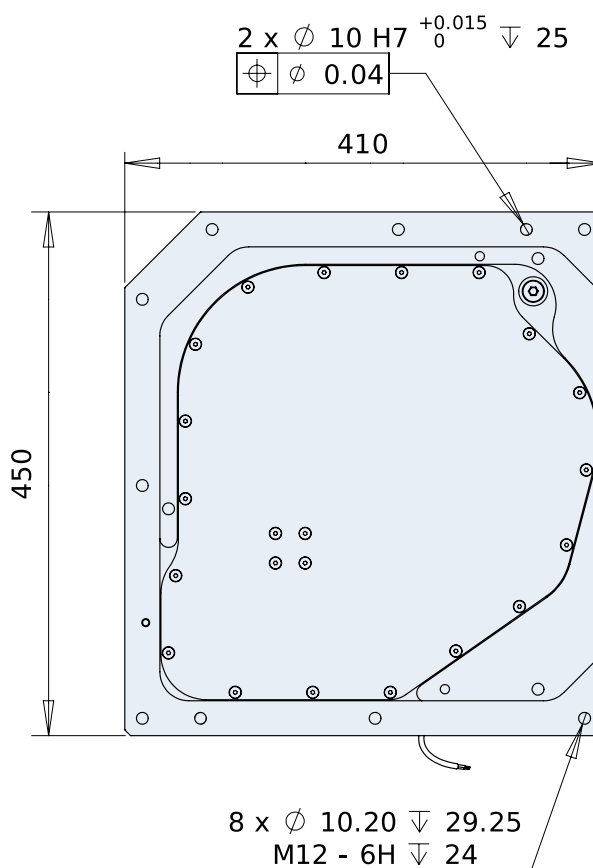
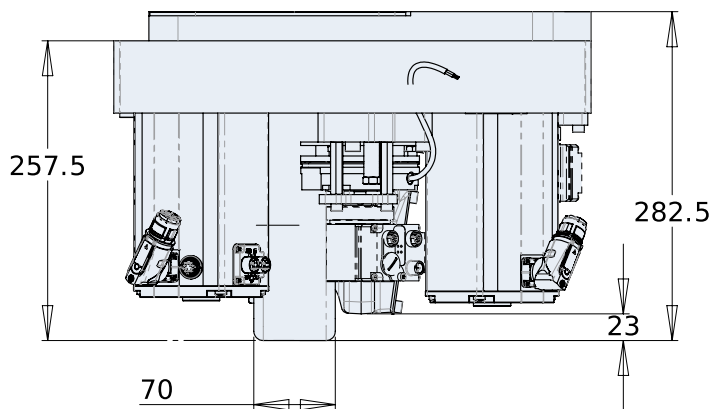
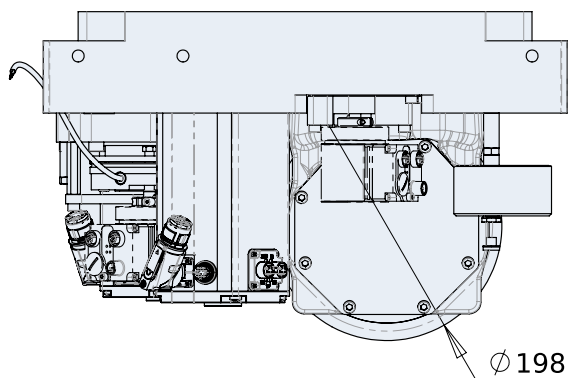
Brake

Safety-Encoder



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

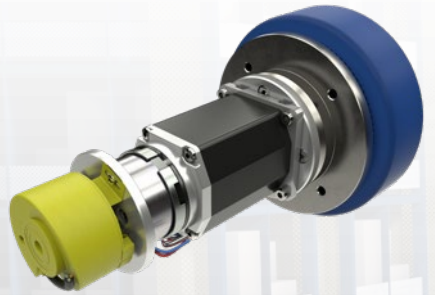
Dimensions To-79 (Tekno M.P.) in mm





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

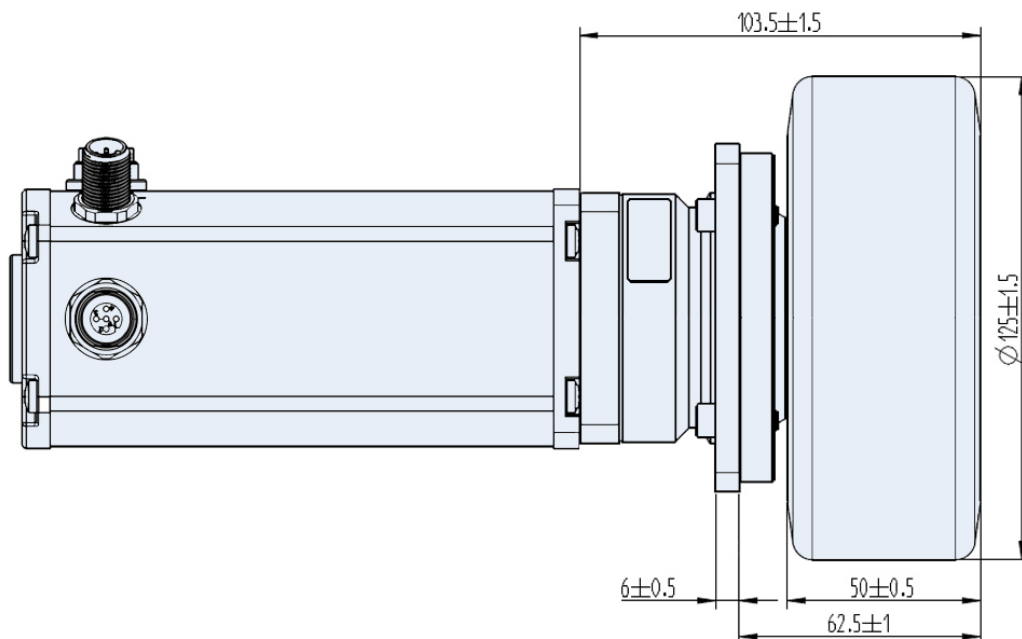


Longlife version

Data | NG 250

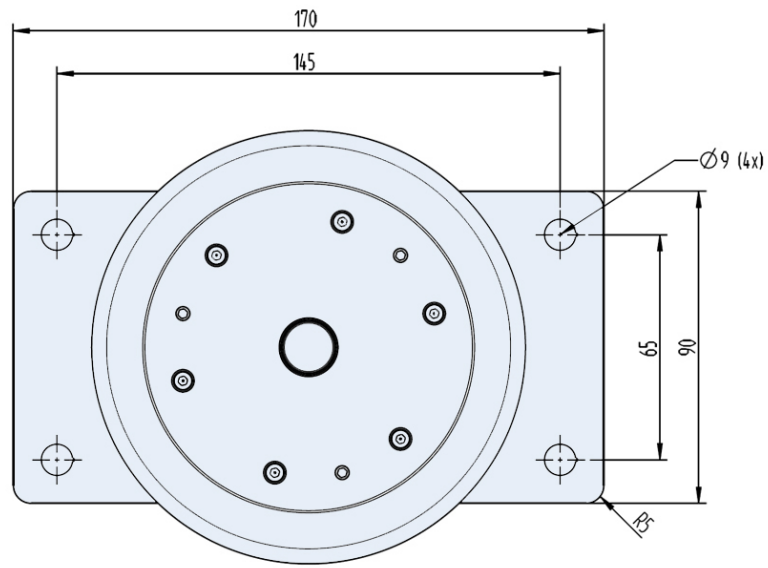
Reduction ratio	-	4	5	8	16	20	32
Efficiency	%	90			85		
Number of stages	-	1			2		
Continuous torque	Nm	11	9	9	11		
Acceleration torque	Nm	22	18	18	22		
Emergency stop torque	Nm	33	27	27	33		
Operating mode	-	S1 / S8					
Max. backlash	arc-min	40			35		
Weight of gearbox	kg	3.8			4.5		
Axial load/ radial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

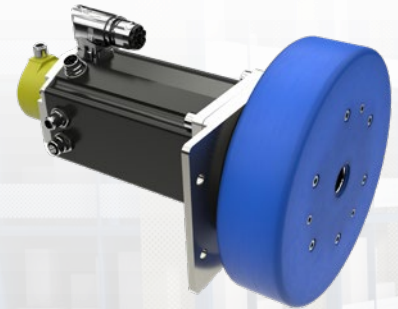


Radseite



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

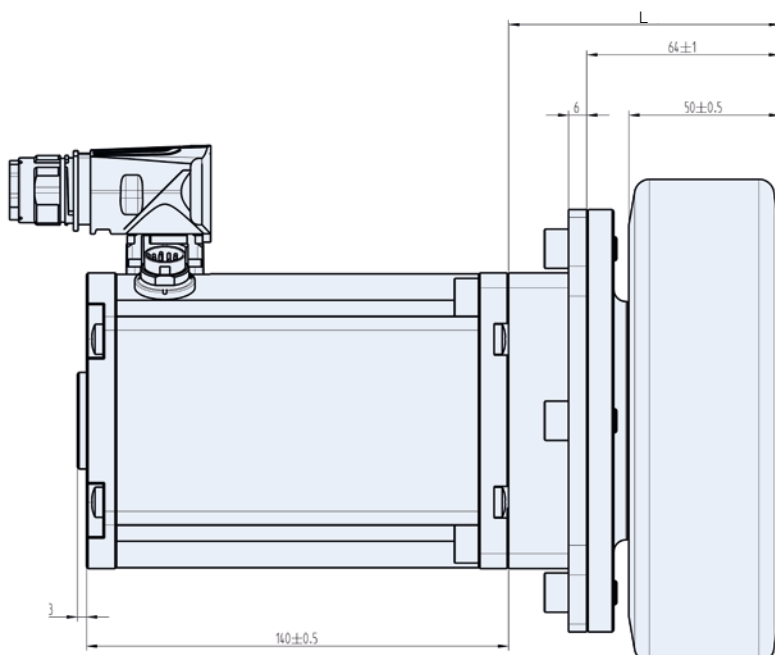


Longlife version

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					

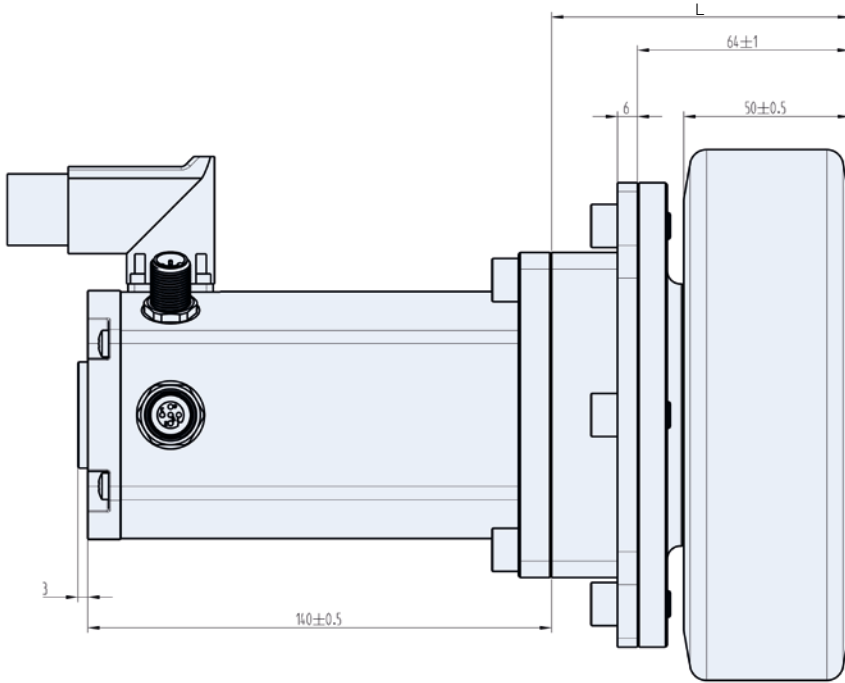
Dimensions BG 95x40 dCore + NG 500 in mm



Length L mm

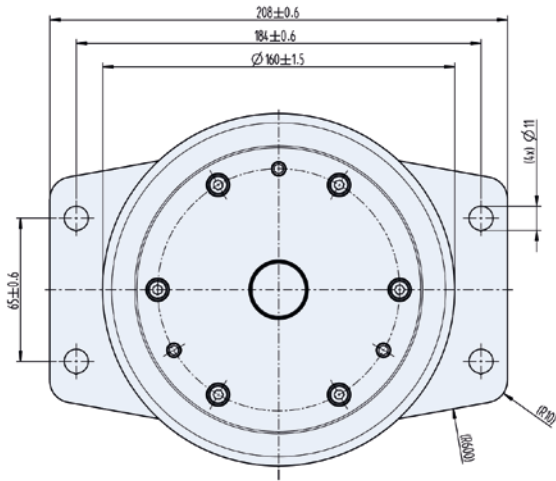
1 stage	80
2 stages	90

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

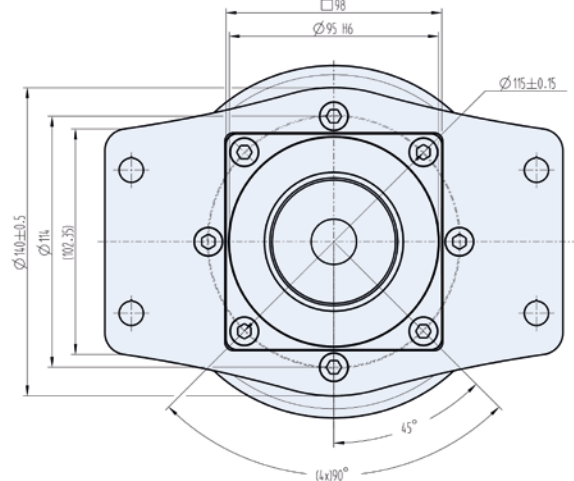


Length L mm	
1 stage	80
2 stages	90

Dimensions NG 500 in mm



Wheel side

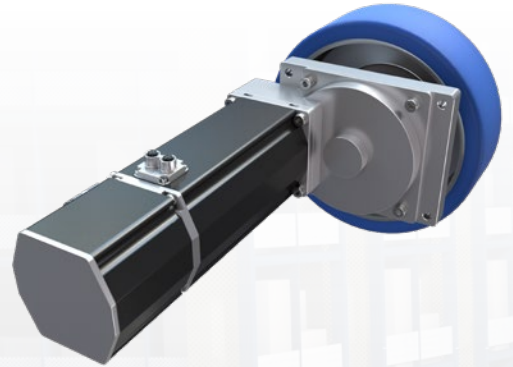


Motor side



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



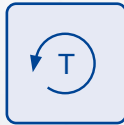
High efficiency



Protection class IP 65



Vibration resistance



High torque



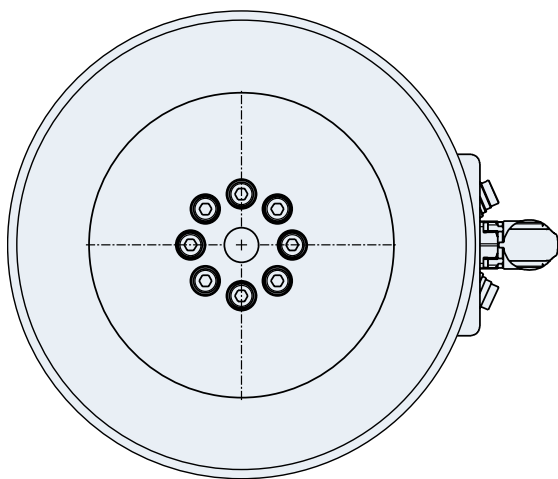
Longlife version

Data preliminary | NG 1000 WO

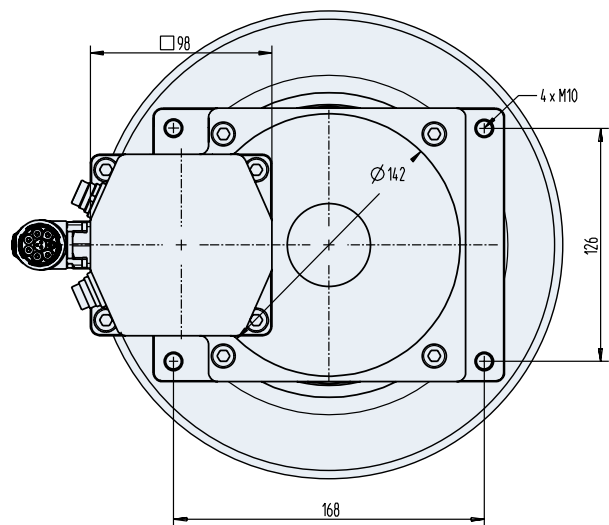
Reduction ratio *	-	20
Efficiency	%	85
Number of stages	-	2
Continuous torque	Nm	80
Acceleration torque	Nm	160
Operating mode	-	S1 / S8
Weight of gearbox	kg	ca. 12
Radial load	N	10 000

* Further reduction ratios on request

Dimensions BG 95x80 dPro + NG 1000 WO in mm

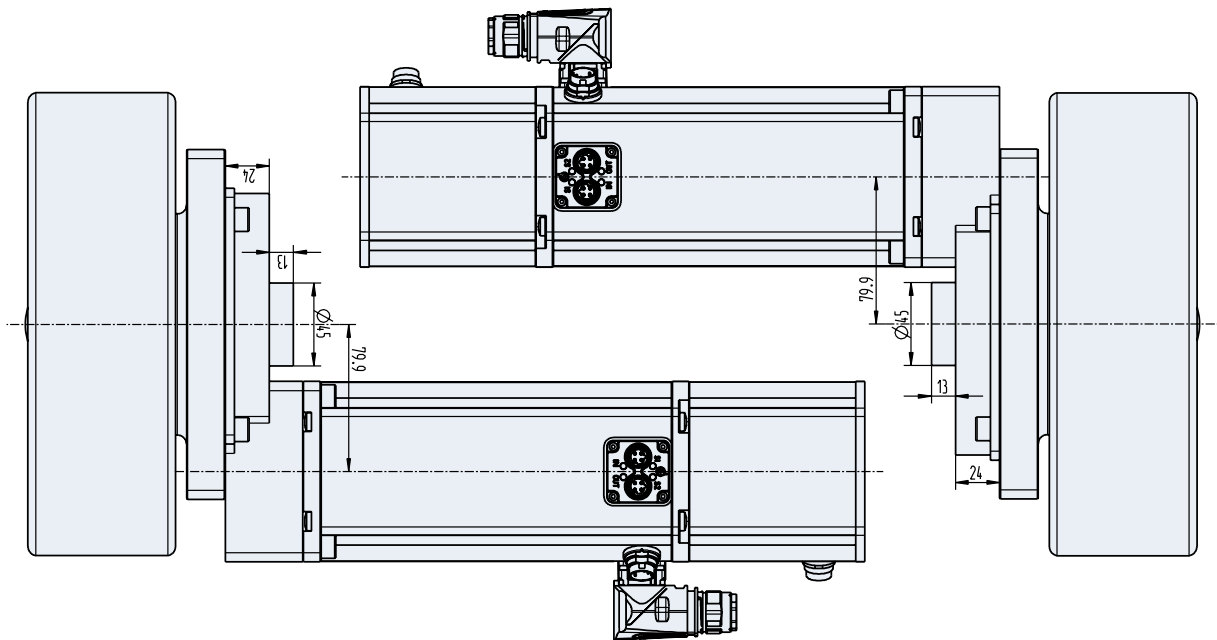
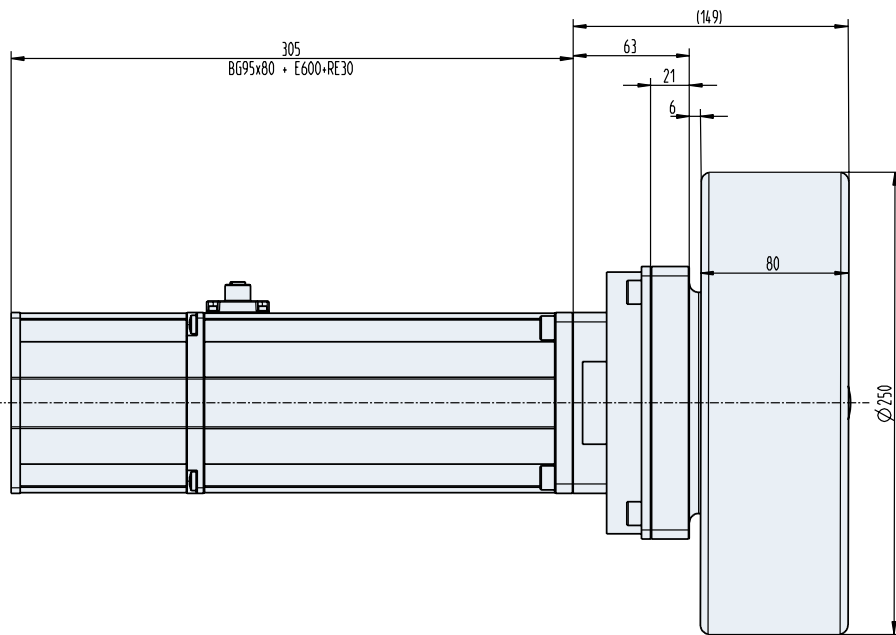


Wheel side



Motor side

Dimensions BG 95x80 dPro + NG 1000 WO in mm



» Representative, Distributors and Offices

GERMANY

Dunkermotoren GmbH

ZIP Code 0 - 29999
Simone Weidensteiner · Tel. +49 7703 930-464
simone.weidensteiner@ametek.com

ZIP Code 30000 - 49999
Robert Ravic · Tel. +49 7703 930-588
robert.ravic@ametek.com

ZIP Code 50000 - 72999
Georg Schwarz · Tel. +49 7703 930-164
georg.schwarz@ametek.com

ZIP Code 73000 - 81999
Laura Heinecke · Tel. +49 7703 930-486
laura.heinecke@ametek.com

ZIP Code 82000 - 99999
Adrian Scheu · Tel. +49 7703 930-306
adrian.scheu@ametek.com

AUSTRIA

Dunkermotoren GmbH

Adrian Scheu · Tel. +49 7703 930-306
adrian.scheu@ametek.com

SWITZERLAND

Dunkermotoren GmbH

Simone Weidensteiner · Tel. +49 7703 930-464
simone.weidensteiner@ametek.com

EUROPE AND OVERSEAS

Australia
M Rutty & Co. Pty Ltd
4 Beaumont road · Mount Kuring-Gai 2080
Kurt Weber - Engineering Account Manager
Tel. +61 2 9457224-5
kweber@mrutty.com.au · sales@mrutty.com.au
www.mrutty.com.au

Belgium/ Luxembourg
ERIKS bv
Aandrijftechniek Schoonhoven
Broeikweg 25 · 2871 RM Schoonhoven
Tel. +31 (182) 3034-56 · Fax +31 (182) 3869-20
www.elmeq.nl · www.eriks.nl
info.schoonhoven@eriks.nl

Brazil
Dunkermotoren Brasil-Latam
Av. Antonio Artoli · 570 Bloco F · Swiss Park Office
Campinas · São Paulo · Brazil · CEP/13049-900
Tel. +55 19-997978947/ 99828-3521
marcelo.martelli@ametek.com

China
East China - Dunkermotoren (Taicang) Co.,Ltd
No. 9 Factory Premises · 111 North · Dongting Road
Taicang Economy Development Area
Taicang 215400, Jiangsu Province
Tel. +86 512 88898889-103 · Fax +86 512 8889889-9
sales.cn@dunkermotoren.com

South China - Dunkermotoren (Taicang) Co.,Ltd.
Guangzhou Representative Office
Unit 1410-1412, 14/F, Yi'an Plaza, No.33 Jianshe Liu
Road, Yuexiu District · Guangzhou City, Guangdong
Province, 510060 P.R.China
Tel. +86 20 83634768-126 · Fax +86 20 8363-3701
sales.cn@dunkermotoren.com

North China - Dunkermotoren (Taicang) Co.,Ltd.
Beijing Representative Office
West side on 2nd floor, Jingdongfang Building, Jiuxian-
qiao, Beijing 100022, P.R.China
Tel. +86 10 85262111-63 · Fax +86 10 85262141-63
sales.cn@dunkermotoren.com

Czech Republic
RAVEO s.r.o.
ř. Tomáše Bati 1851 · 76502 Otrokovice
Tel. +420 577 700 150 · info@raveo.cz
www.raveo.cz

Denmark
DJ Stork Drives ApS
Naverland 2, 10 · 2600 Glostrup
Tel. +45 89882416 · www.storkdrives.com
ulrik.eriksen@storkdrives.com

Finland
Wexon OY
Juhaniantie 4 · 01740 Vantaa
Tel. +358 929044-0 · Fax +358 929044-100
www.wexon.fi · wexon@wexon.com

France
AMETEK SAS
Bâtiment le Cobalt
470 Route du Tilleul · 69270 Cailloux sur Fontaines
Tel. +33 472 2922-90 · Fax +33 474 7073-48
sales.fr@dunkermotoren.com

Great Britain
Dunkermotoren UK
AMETEK (GB) Ltd.
Steyning Way · Bognor Regis · PO22 9ST
Tel. +44 124 3833-418
sales.uk@dunkermotoren.com

India
AMETEK Instruments India Private Limited
306, Delta Wing, 3rd Floor,
Raheja Towers, Anna Salai,
Chennai - 600 002
Mobile +91 97404 39955
raj.kumar.natarajan@ametek.com

Israel
AMETEK
HaBrosh St 15 · 99795 Petahia
Tel. +972 52 702 9555
yuval.maimoni@ametek.com

Italy
c/o AMETEK s.r.l.
Via della Liberazione 24
IT-20068 Peschiera Borromeo (MI)
Tel. +39 02 94693233
sales.it@dunkermotoren.com

Korea
AMETEK Co. Ltd.
#309, 3rd FL, Gyeonggi R&DB Center, 105, Gwanggyo-ro
Yeongtong-gu, Suwon-si, Gyeonggi-do, 16229
Tel. +82 31 888 5257 · Fax +82 31 888 5228
kwonsoon.hwang@ametek.com

Netherlands
ERIKS bv
Aandrijftechniek Schoonhoven
Broeikweg 25 · 2871 RM Schoonhoven
Tel. +31 (182) 3034-56 · Fax +31 (182) 3869-20
www.elmeq.nl · www.eriks.nl
info.schoonhoven@eriks.nl

Norway
DJ Stork Drives
Storgata 15 · NO-2750 Gran
Tel. +47 6199 3001
www.storkdrives.com · arve.stensrud@storkdrives.com

Poland
RAVEO Sp. z o.o.
ul. Dworcowa 1, 33-100 Tarnów
Tel. +48 799 277 333
www.raveo.com.pl · info@raveo.com.pl

Slovakia
RAVEO s.r.o.
ř. Tomáše Bati 1851 · 76502 Otrokovice
Tel. +420 577 700 150
www.raveo.cz · info@raveo.cz

Spain & Portugal
Elmeq S.L.
C/Tarragona 109 Planta · 16 08014 Barcelona
Tel. +34 93 42270-33 · Fax +34 93 43236-60
www.elmeq.es · elmeqcontact@elmeq.es

Sweden
Stork Drives AB
Box 1158 · Strandväg 116 · SE-171 54 Solna
Tel. +46 8 63560-00 · Fax +46 8 63560-01
www.storkdrives.com · info@storkdrives.com

Taiwan
NRC Engineering & Precision Drives Co., Ltd.
17F, No. 890 · Jinguo Rd., Luzhu Dist.
Taoyuan City 33858
Tel. +886 (0)3-316-1838 · Fax +886 (0)3-316-1951
info@nrc.com.tw · www.nrc-precidives.com

Turkey
MİMTECH OTOMASYON VE TİCARET LTD. ŞTİ
Aziziye Mah. (Hoşdere Cad) · Şehit Mahir Turan Cad.
No: 3 06690 Çankaya-Ayrançı-Ankara
Tel. +90 312 440 79 50 / +90 312 440 79 60
Fax +90 312 442 28 03
info@mimtech.com.tr · www.mimtech.com.tr

MOPA Endüstriyel Ürünler Pazarlama A.Ş.
Harmandere Mah. · Şehit Mehmet Güney Sok No:11
34912 Kurtköy/ Pendik/ İstanbul
Tel. +90 216 59336-87 · Fax +90 216 48250-52
www.mo-pa.com.tr · bilgi@mo-pa.com.tr

United States of America
Dunkermotoren USA Inc.
1210 NC Highway 61 · Whitsett, NC 27377
Tel. +1 (336) 449-7909
www.dunkermotoren.com ·
US-inquiries.dunkermotoren@ametek.com