

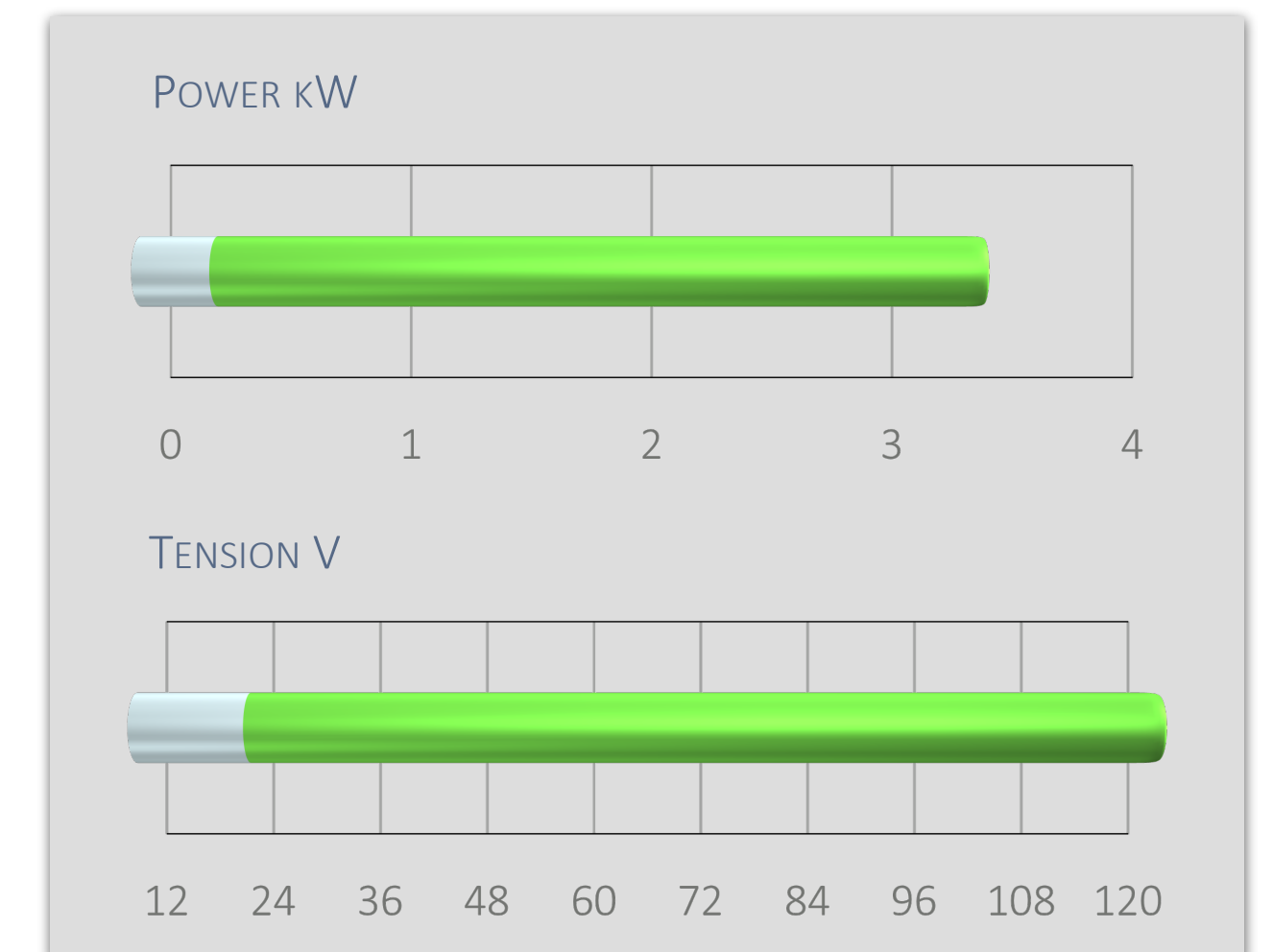
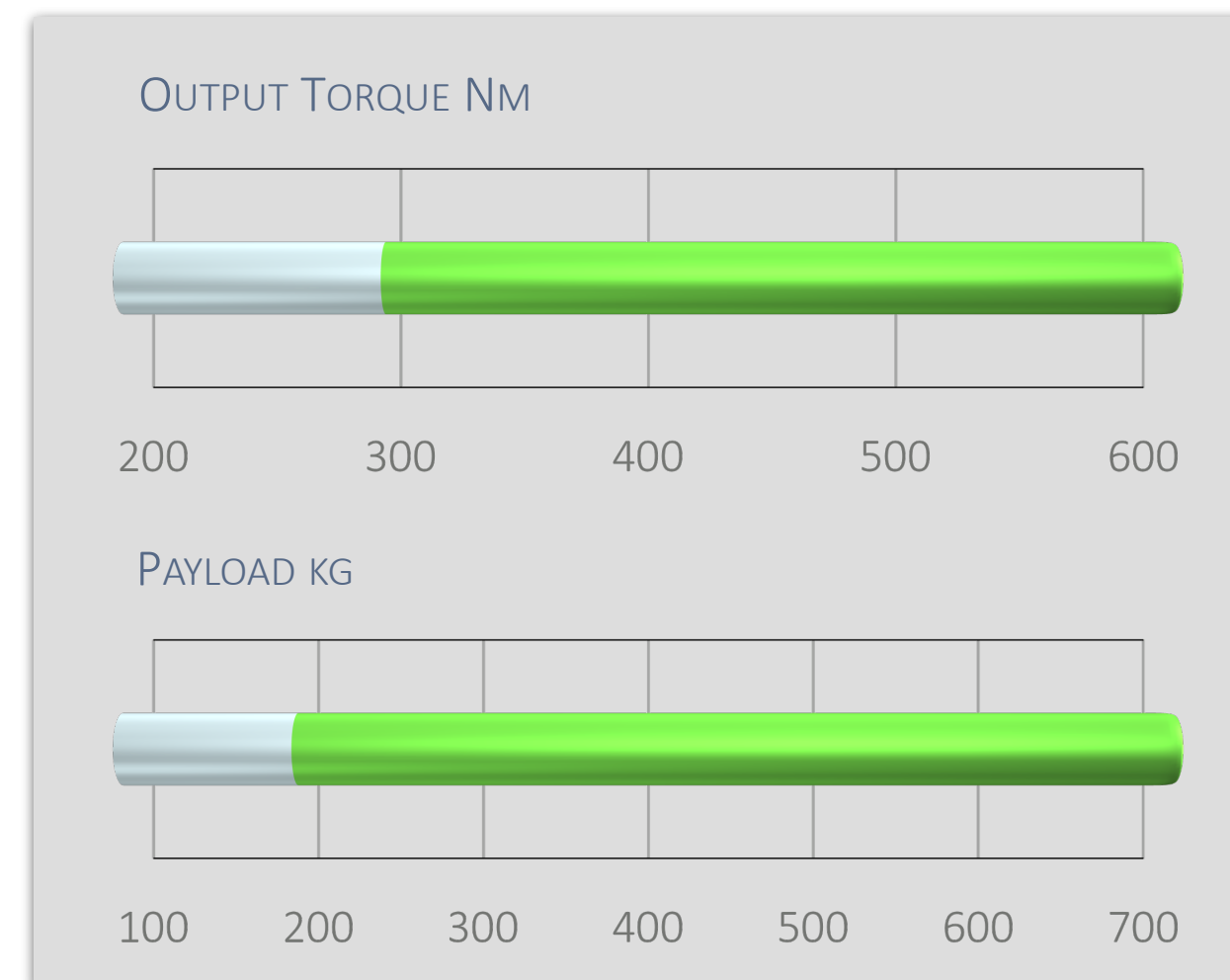
TRANSAXLE DRIVE SYSTEMS

Double reduction rigid drive axle. TX1 Serie is a fully integrated e-Powertrain that includes a gearbox with differential, a rigid axle, a brake system and an electric motor. Due to its scalable power it perfect fit in light duty vehicles.

Modular system allow TX1 Serie custom design tailored to your specific requirements.

TX1 Serie is the next generation transmissions developed for eMobility market.

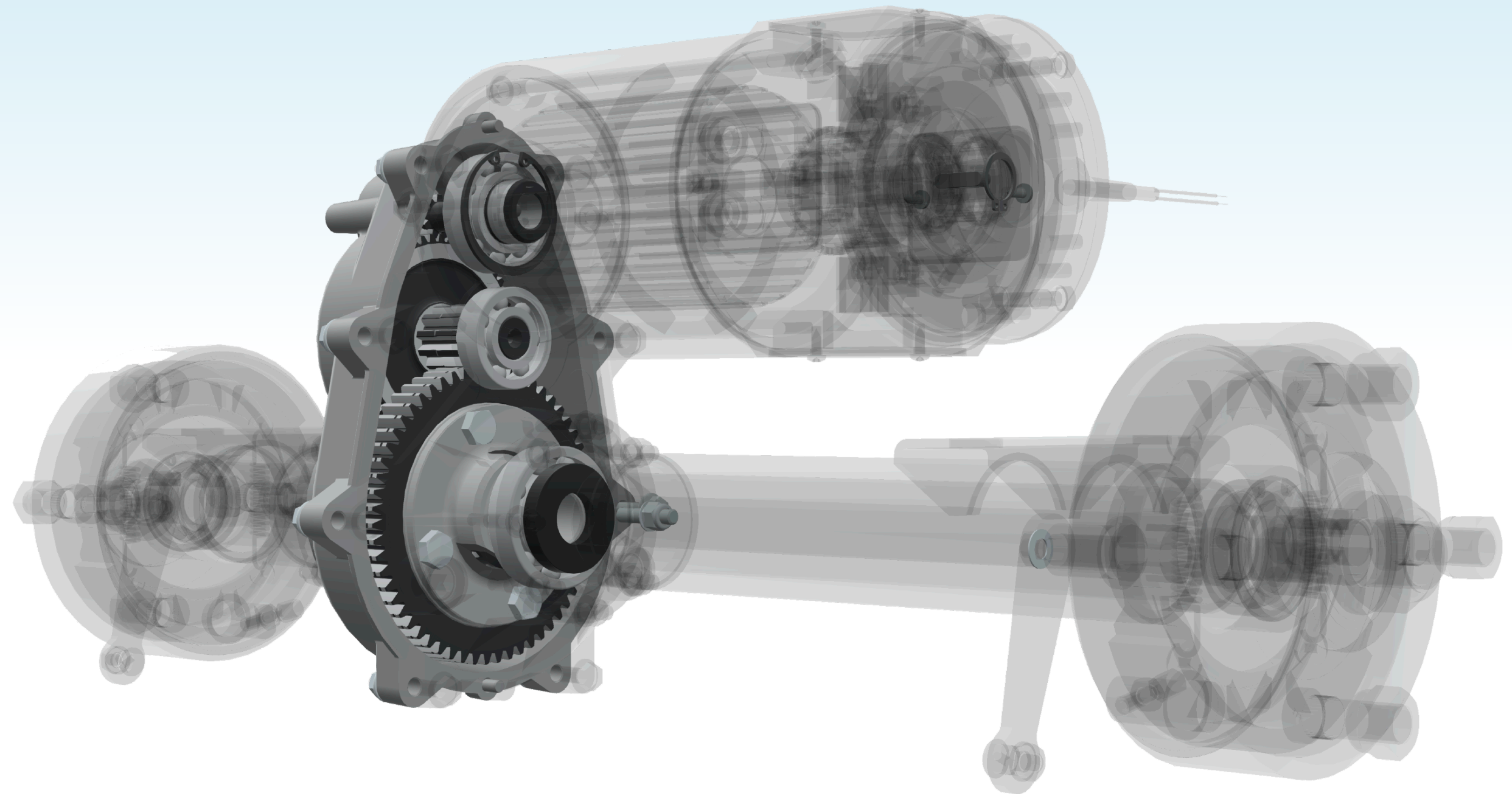
OPERATION RANGE



Benevelli products has always been built around a singular vision: to create gearboxes that are as powerful, functional and compact as they are modular and easy to install.

TX1 is a stunning realization of that.

We assemble the entire product and machine its high-precision components in Italy being able to build a product that's impeccably constructed in every detail.



TX1 SERIE SIMPLY POWERFUL

OUR TECHNOLOGIES FOR YOUR EMOBILITY



CONSTANT DEVELOPMENT

A CONSTANT RESEARCH ON MATERIALS AND CONSTRUCTION TECHNIQUES IS BEHIND THE SUCCESS OF TX1 SERIE



HIGH EFFICIENCY

GEARS CLASS 5 WITH GROUND PROFILES GUARANTEE HIGH MECHANICAL EFFICIENCIES CLOSE TO 95%



DIFFERENTIAL LOCK

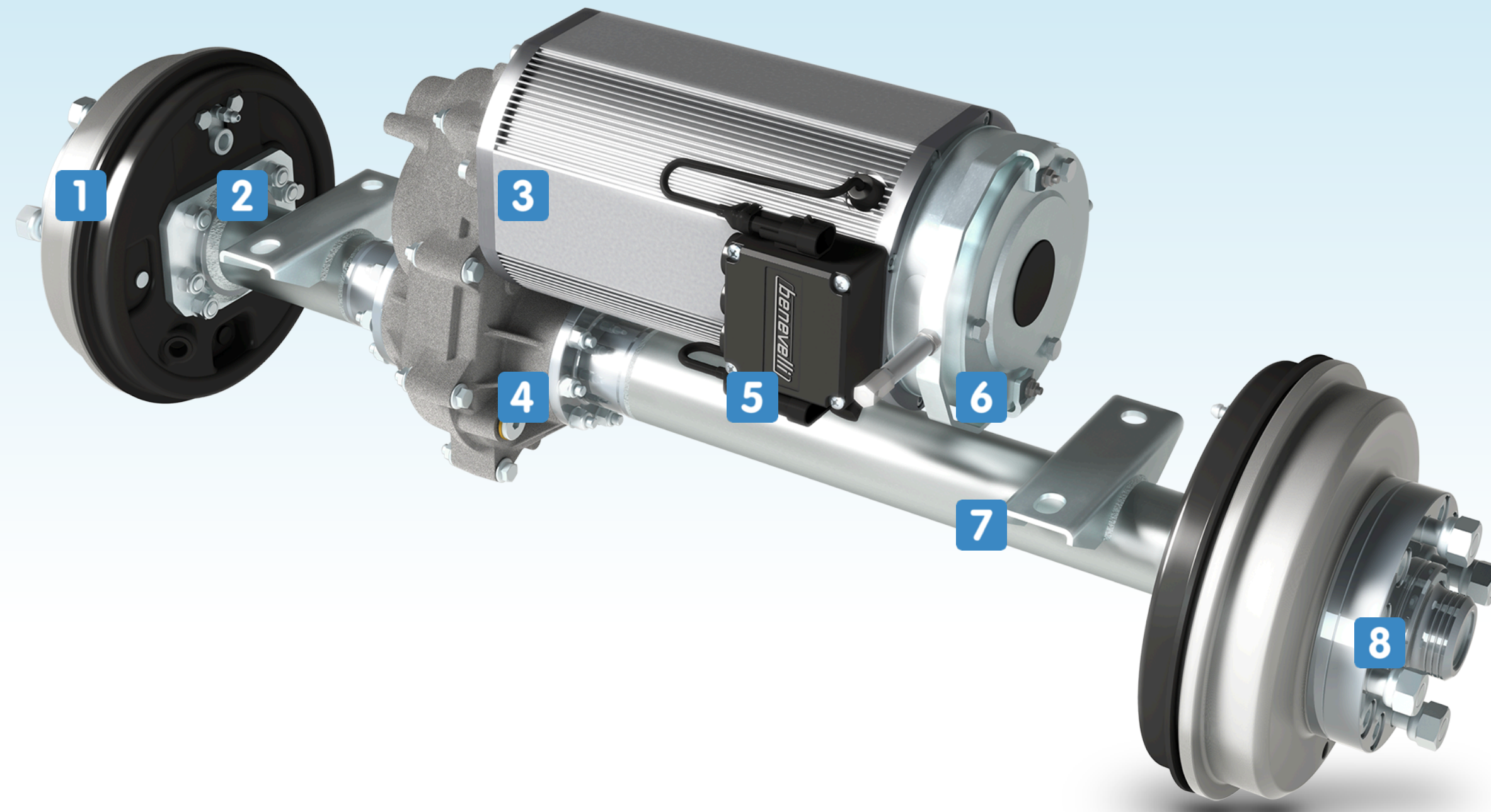
ALL OUR TRANSMISSIONS CAN BE EQUIPPED WITH DIFFERENTIAL MECHANICAL LOCK DEVICE



ENERGY SAVING

BENEVELLI MOTORS MAKES A SIGNIFICANT CONTRIBUTION TO SAVING CURRENT AND EXTENDS RUNNING TIME AUTONOMY

DRIVING THE FUTURE OF **ELECTRIC** VEHICLES



1 DIMENSIONS
MODULAR DESIGN ALLOWS CONFIGURATION IN
OVER 1000 DIFFERENT TRACK-WIDTHS

2 WELDING
WELDINGS OPERATION PERFORMED BY ROBOTIC
SYSTEMS TÜV CERTIFIED ISO 15614:2012

3 MOTORS
AVAILABLE WITH PERMANENT MAGNET DC,
ASYNCHRONOUS & SYNCHRONOUS AC MOTORS

4 DIFFERENTIAL LOCK
ALL MODELS ARE ALSO AVAILABLE WITH
MECHANICAL DIFFERENTIAL LOCKING DEVICE

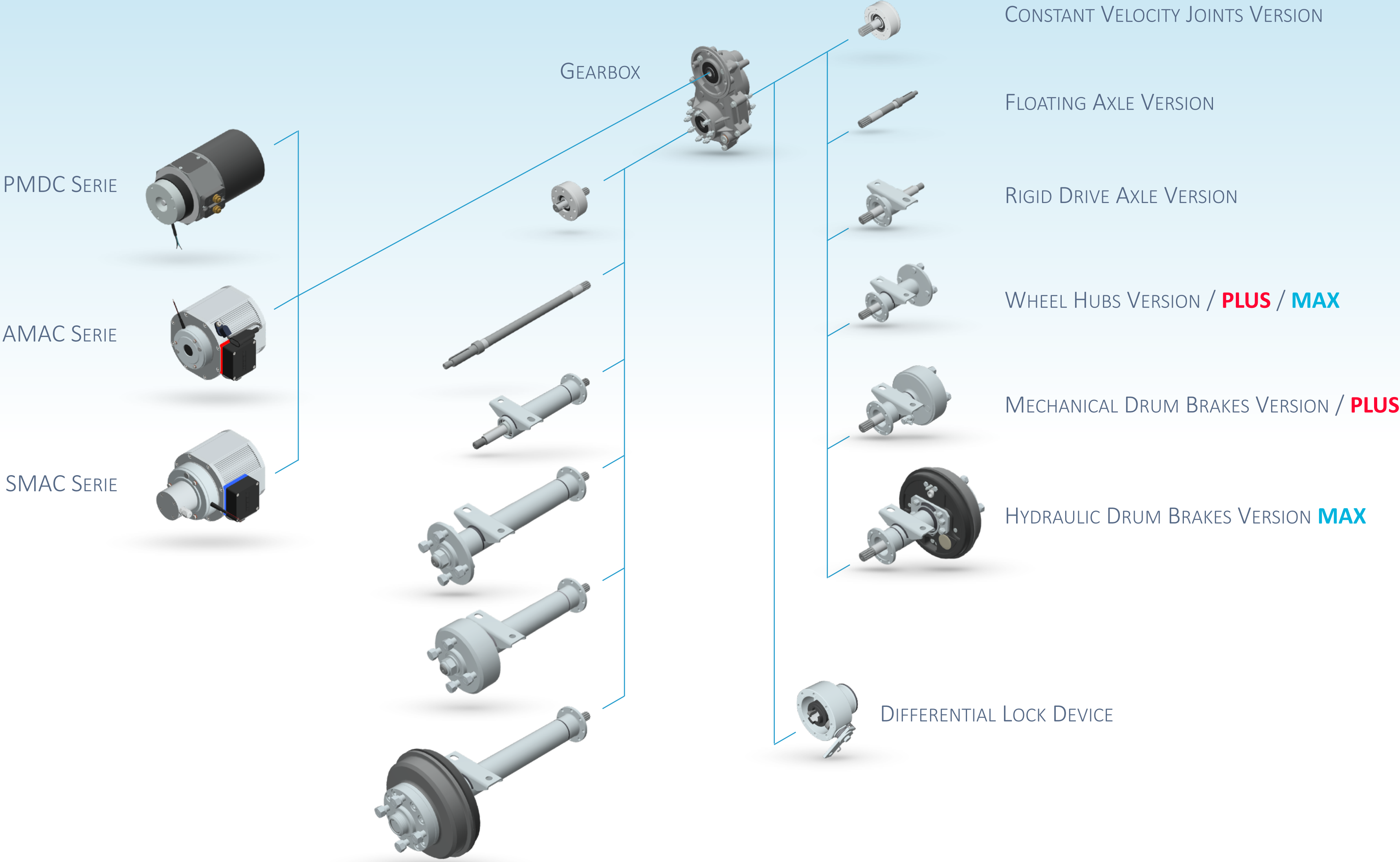
5 FINISHING
METALLIC PARTS SUBJECTED TO CHROMITING®
ZINC COATING TO WITHSTAND CORROSIVE AGENTS

6 WATERPROOF DESIGN
DESIGNED FOR A COMPLETE PROTECTION UP TO
IP67 UNDER IEC STANDARD 60529

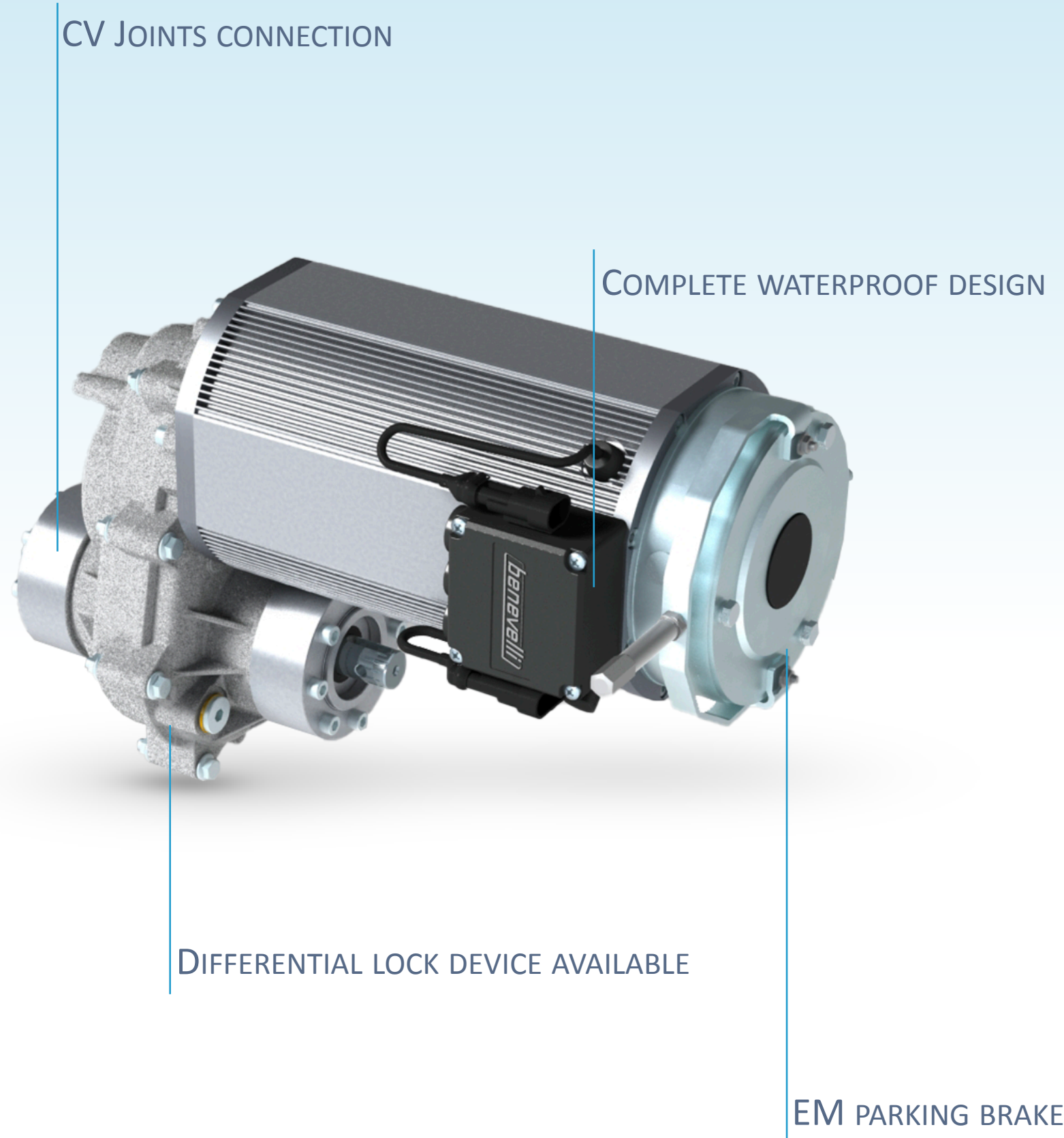
7 MOUNTING POSITION
DIFFERENT STANDARD MOUNTING POSSIBILITIES
ROTATING MOTOR ON Z AXIS FROM 0 TO 180°

8 WHEEL CONNECTION
AVAILABLE WITH DIFFERENT WHEEL HUBS TYPES OR
WITH MECHANICAL-HYDRAULIC DRUM BRAKES

TX1 SERIE - MODULAR DRIVE SYSTEM




DRIVING THE FUTURE OF ELECTRIC VEHICLES




GEARBOX FEATURES		
RATIOS	I	6 - 10 - 12 - 16 - 22 - 24 - 28 - 32
OUTPUT TORQUE	NM	300
INPUT SPEED (MAX)	RPM	3.500
STATIC LOAD	KG	-
TRACK-WIDTH	MM	-
GEARBOX FINISHING		GROUND GEARS
EFFICIENCY	%	95
DIFFERENTIAL LOCK		OPTIONAL


MOTOR FEATURES		
MOTOR TYPE		PMDC - AMAC
RATED POWER	kW	0,3 ÷ 1,7
RATED VOLTAGE	V	24 ÷ 120
INSULATION CLASS		F (155°)
PROTECTION DEGREE	IP	54 ÷ 67
SERVICE BRAKING		-
PARKING BRAKING		ELECTROMAGNETIC - NM 6 ÷ 20
MANUAL RELEASE		OPTIONAL



TECHNICAL SUPPORT

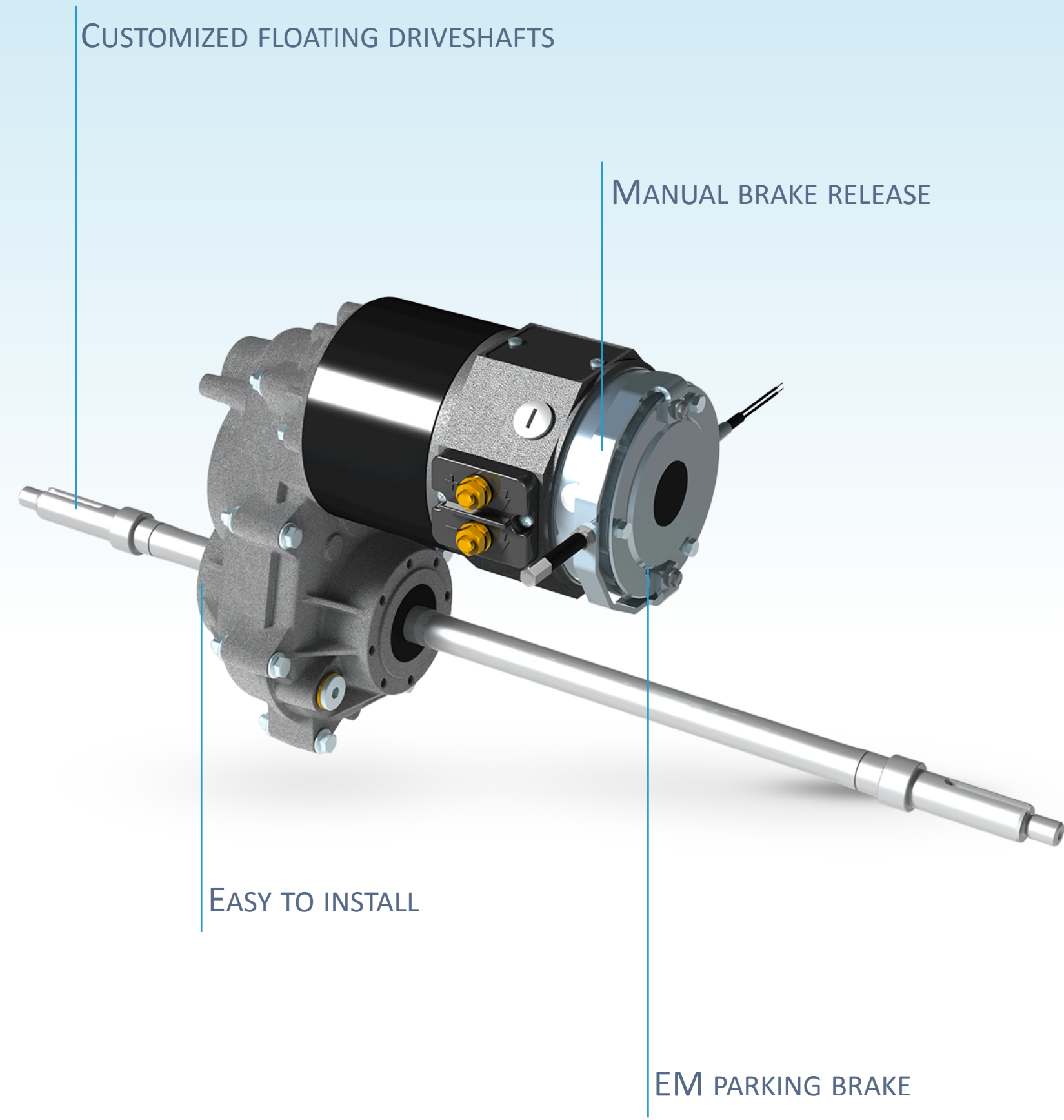


3D DRAWING



REQUEST A QUOTE

TX1 SERIE - FLOATING DRIVESHAFTS VERSION



GEARBOX FEATURES

RATIOS	I	6 - 10 - 12 - 16 - 22 - 24 - 28 - 32
OUTPUT TORQUE	NM	300
INPUT SPEED (MAX)	RPM	3.500
STATIC LOAD	KG	-
TRACK-WIDTH	MM	400 ÷ 1150
GEARBOX FINISHING		GROUND GEARS
EFFICIENCY	%	95
DIFFERENTIAL LOCK		OPTIONAL

MOTOR FEATURES

MOTOR TYPE		PMDC - AMAC
RATED POWER	kW	0,3 ÷ 1,7
RATED VOLTAGE	V	24 ÷ 120
INSULATION CLASS		F (155°)
PROTECTION DEGREE	IP	54 ÷ 67
SERVICE BRAKING		-
PARKING BRAKING		ELECTROMAGNETIC - Nm 6 ÷ 20
MANUAL RELEASE		OPTIONAL



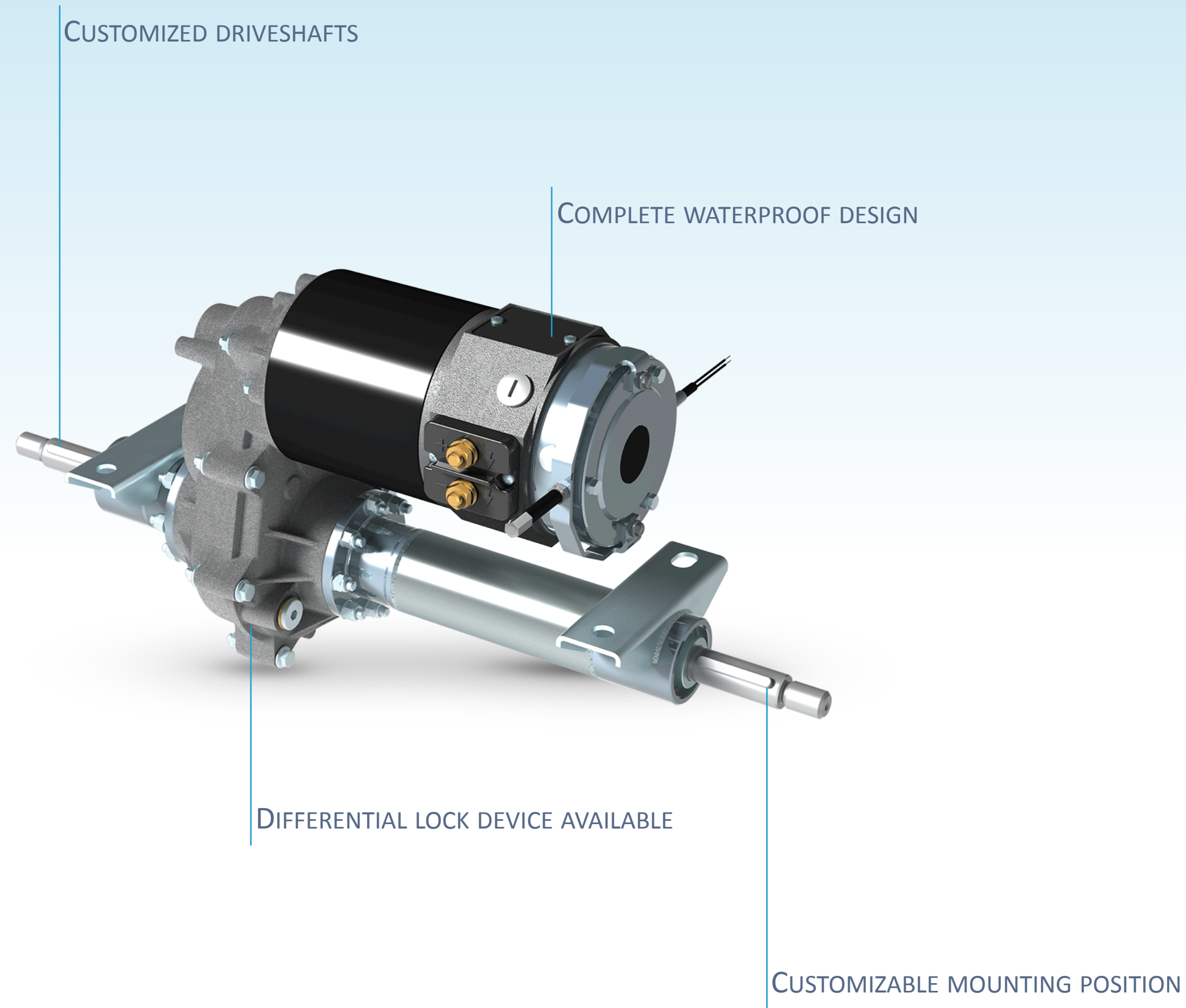
TECHNICAL SUPPORT



3D DRAWING



REQUEST A QUOTE



GEARBOX FEATURES

RATIOS	I	6 - 10 - 12 - 16 - 22 - 24 - 28 - 32
OUTPUT TORQUE	NM	300
INPUT SPEED (MAX)	RPM	3.500
STATIC LOAD	KG	300
TRACK-WIDTH	MM	400 ÷ 1150
GEARBOX FINISHING		GROUND GEARS
EFFICIENCY	%	95
DIFFERENTIAL LOCK		OPTIONAL

MOTOR FEATURES

MOTOR TYPE		PMDC - AMAC
RATED POWER	kW	0,3 ÷ 1,7
RATED VOLTAGE	V	24 ÷ 120
INSULATION CLASS		F (155°)
PROTECTION DEGREE	IP	54 ÷ 67
SERVICE BRAKING		-
PARKING BRAKING		ELECTROMAGNETIC - Nm 6 ÷ 20
MANUAL RELEASE		OPTIONAL



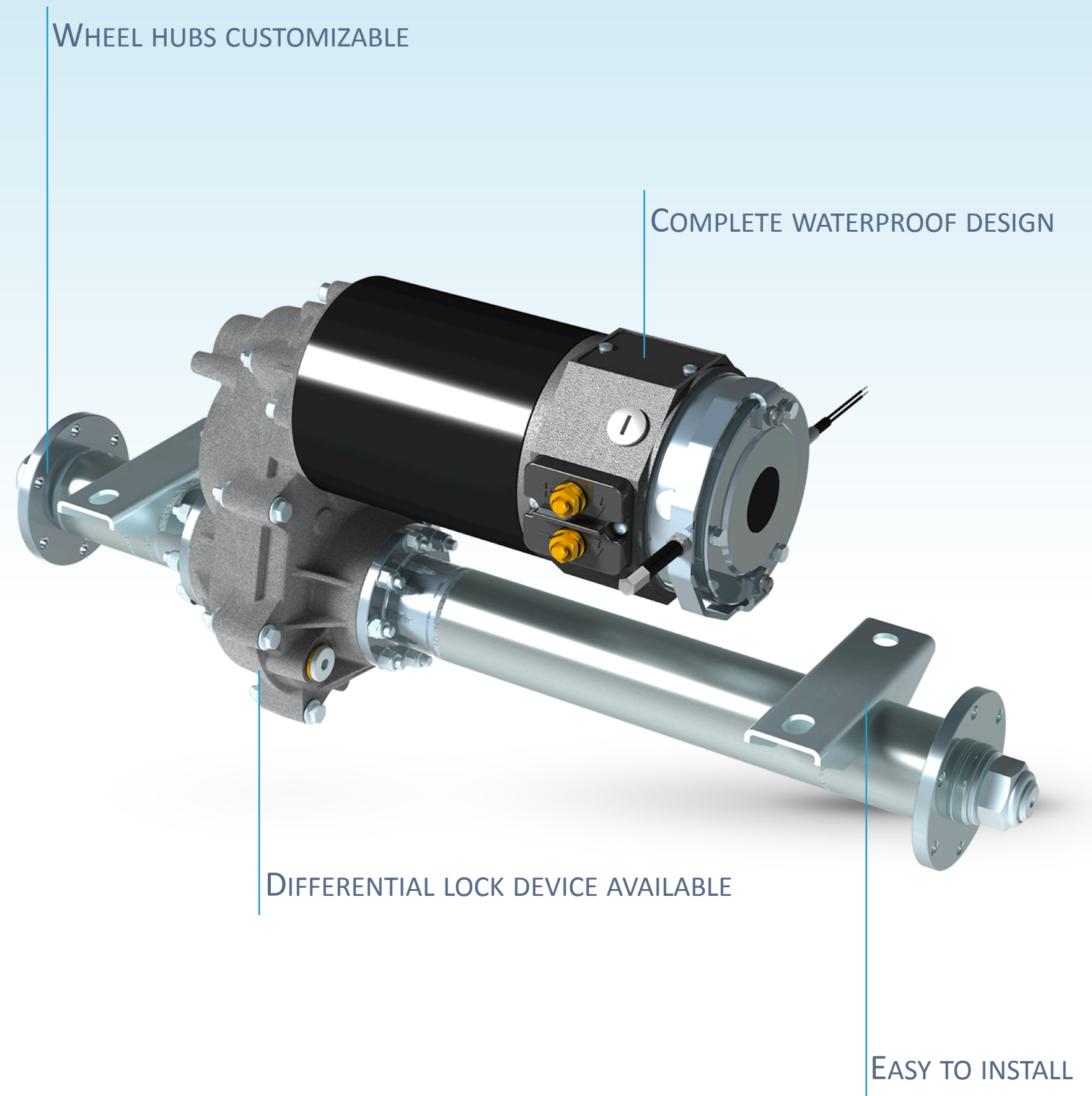
TECHNICAL SUPPORT



3D DRAWING




REQUEST A QUOTE




GEARBOX FEATURES		
RATIOS	I	6 - 10 - 12 - 16 - 22 - 24 - 28 - 32
OUTPUT TORQUE	NM	300
INPUT SPEED (MAX)	RPM	3.500
STATIC LOAD	KG	300
TRACK-WIDTH	MM	400 ÷ 1150
GEARBOX FINISHING		GROUND GEARS
EFFICIENCY	%	95
DIFFERENTIAL LOCK		OPTIONAL


MOTOR FEATURES		
MOTOR TYPE		PMDC - AMAC
RATED POWER	kW	0,3 ÷ 1,7
RATED VOLTAGE	V	24 ÷ 120
INSULATION CLASS		F (155°)
PROTECTION DEGREE	IP	54 ÷ 67
SERVICE BRAKING		-
PARKING BRAKING		ELECTROMAGNETIC - Nm 6 ÷ 20
MANUAL RELEASE		OPTIONAL



TECHNICAL SUPPORT

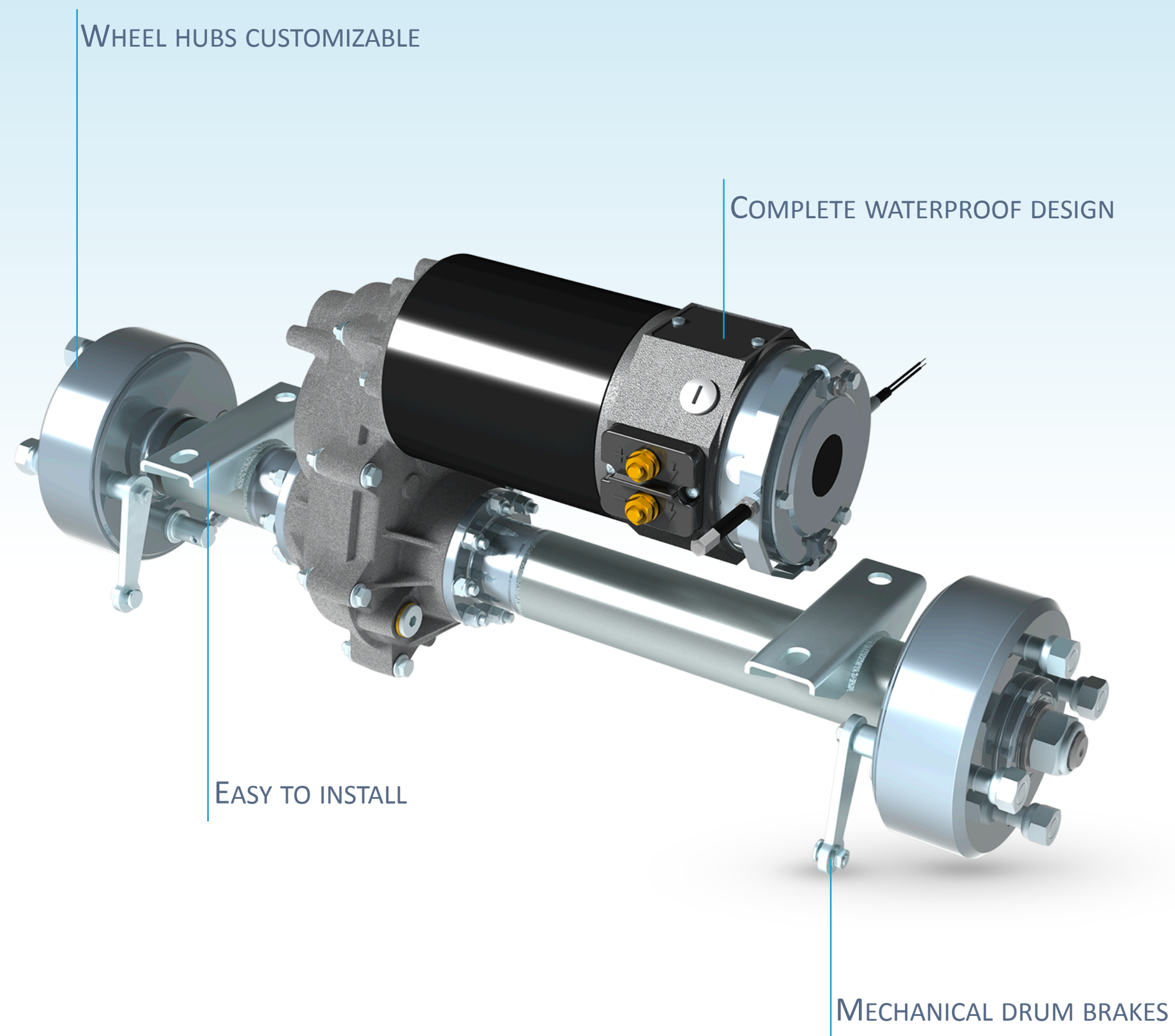


3D DRAWING



REQUEST A QUOTE

TX1 SERIE - MECHANICAL DRUM BRAKES VERSION

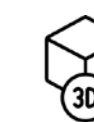


GEARBOX FEATURES		
RATIOS	I	6 - 10 - 12 - 16 - 22 - 24 - 28 - 32
OUTPUT TORQUE	NM	300
INPUT SPEED (MAX)	RPM	3.500
STATIC LOAD	KG	300
TRACK-WIDTH	MM	400 ÷ 1150
GEARBOX FINISHING		GROUND GEARS
EFFICIENCY	%	95
DIFFERENTIAL LOCK		OPTIONAL

MOTOR FEATURES		
MOTOR TYPE		PMDC - AMAC
RATED POWER	kW	0,3 ÷ 1,7
RATED VOLTAGE	V	24 ÷ 120
INSULATION CLASS		F (155°)
PROTECTION DEGREE	IP	54 ÷ 67
SERVICE BRAKING		MECHANICAL - NM 500
PARKING BRAKING		ELECTROMAGNETIC - NM 6 ÷ 20
MANUAL RELEASE		OPTIONAL



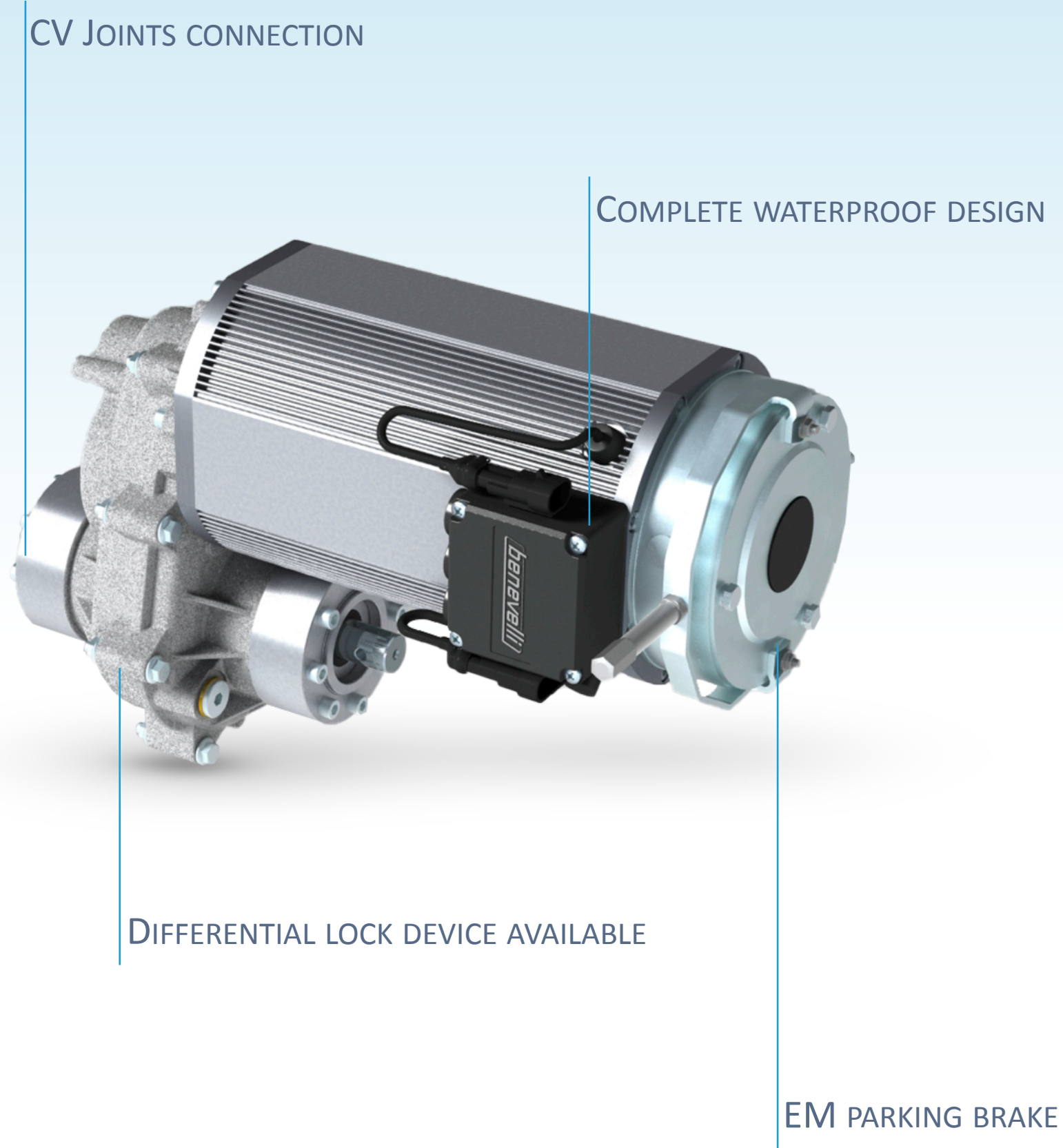
TECHNICAL SUPPORT



3D DRAWING



REQUEST A QUOTE

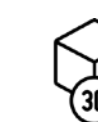


GEARBOX FEATURES		
RATIOS	I	6 - 10 - 12 - 16 - 22 - 24 - 28 - 32
OUTPUT TORQUE	NM	500
INPUT SPEED (MAX)	RPM	7.200
STATIC LOAD	KG	-
TRACK-WIDTH	MM	-
GEARBOX FINISHING		GROUND GEARS
EFFICIENCY	%	95
DIFFERENTIAL LOCK		OPTIONAL

MOTOR FEATURES		
MOTOR TYPE		AMAC - SMAC
RATED POWER	kW	0,6 ÷ 3,0
RATED VOLTAGE	V	24 ÷ 120
INSULATION CLASS		F (155°)
PROTECTION DEGREE	IP	54 ÷ 67
SERVICE BRAKING		-
PARKING BRAKING		ELECTROMAGNETIC - Nm 6 ÷ 20
MANUAL RELEASE		OPTIONAL



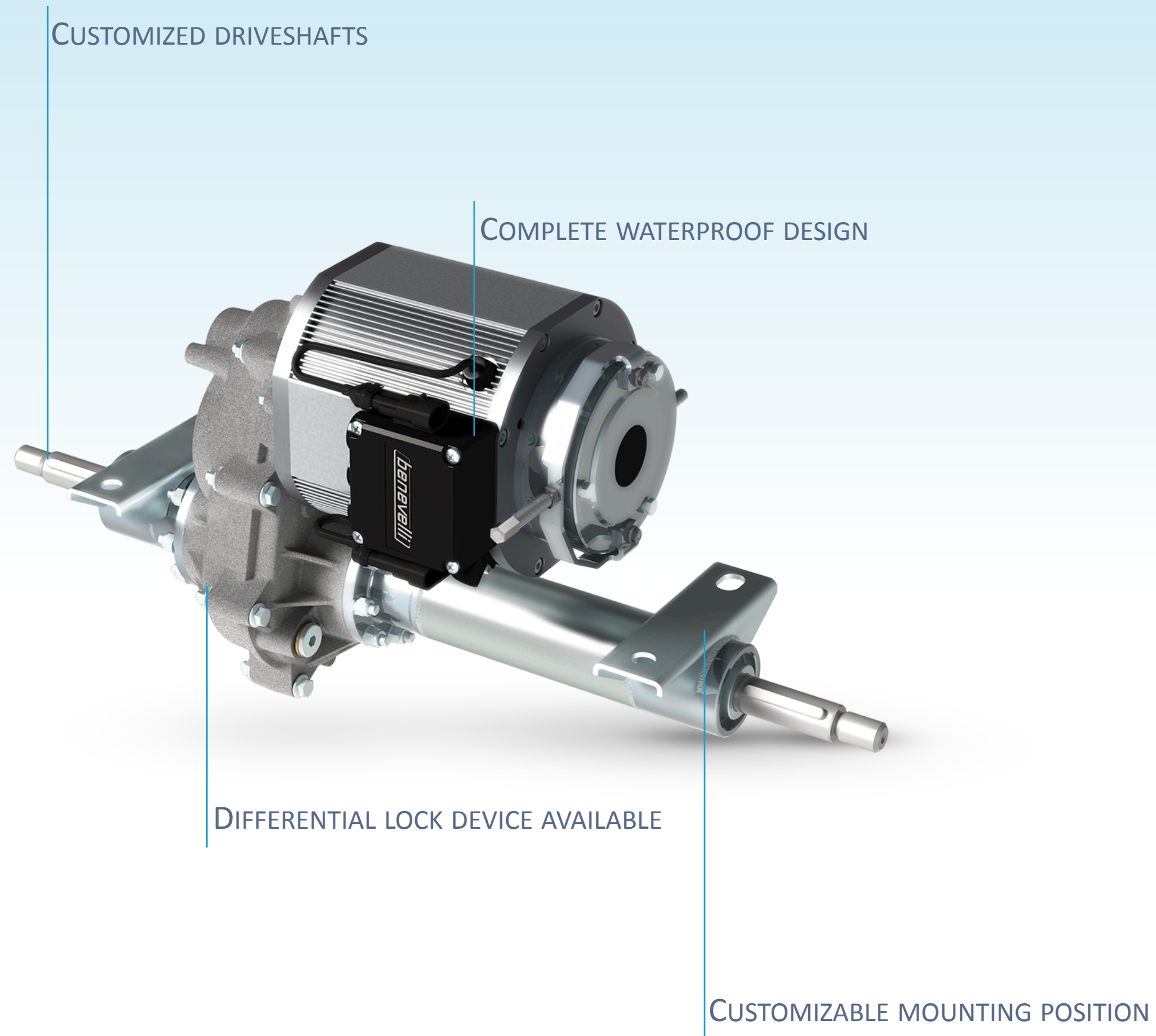
TECHNICAL SUPPORT



3D DRAWING



REQUEST A QUOTE



GEARBOX FEATURES

RATIOS	I	6 - 10 - 12 - 16 - 22 - 24 - 28 - 32
OUTPUT TORQUE	NM	500
INPUT SPEED (MAX)	RPM	7.200
STATIC LOAD	KG	500
TRACK-WIDTH	MM	400 ÷ 1150
GEARBOX FINISHING		GROUND GEARS
EFFICIENCY	%	95
DIFFERENTIAL LOCK		OPTIONAL

MOTOR FEATURES

MOTOR TYPE		AMAC - SMAC
RATED POWER	kW	0,6 ÷ 3,0
RATED VOLTAGE	V	24 ÷ 120
INSULATION CLASS		F (155°)
PROTECTION DEGREE	IP	54 ÷ 67
SERVICE BRAKING		-
PARKING BRAKING		ELECTROMAGNETIC - Nm 6 ÷ 20
MANUAL RELEASE		OPTIONAL



TECHNICAL SUPPORT

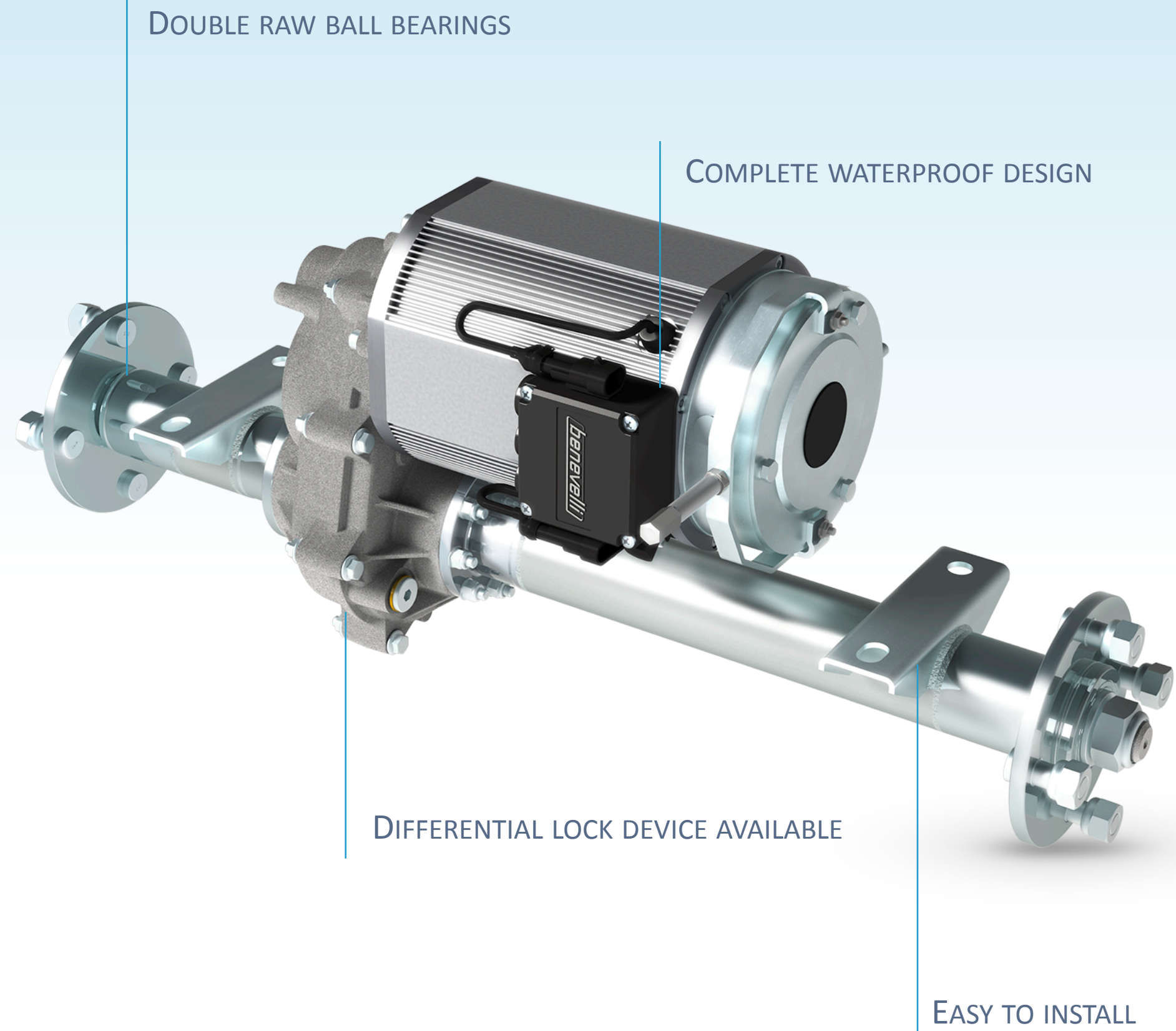


3D DRAWING



REQUEST A QUOTE

TX1 SERIE PLUS - WHEEL HUBS VERSION



GEARBOX FEATURES

RATIOS	I	6 - 10 - 12 - 16 - 22 - 24 - 28 - 32
OUTPUT TORQUE	NM	500
INPUT SPEED (MAX)	RPM	7.200
STATIC LOAD	KG	500
TRACK-WIDTH	MM	400 ÷ 1150
GEARBOX FINISHING		GROUND GEARS
EFFICIENCY	%	95
DIFFERENTIAL LOCK		OPTIONAL

MOTOR FEATURES

MOTOR TYPE		AMAC - SMAC
RATED POWER	kW	0,6 ÷ 3,0
RATED VOLTAGE	V	24 ÷ 120
INSULATION CLASS		F (155°)
PROTECTION DEGREE	IP	54 ÷ 67
SERVICE BRAKING		-
PARKING BRAKING		ELECTROMAGNETIC - Nm 6 ÷ 20
MANUAL RELEASE		OPTIONAL



TECHNICAL SUPPORT

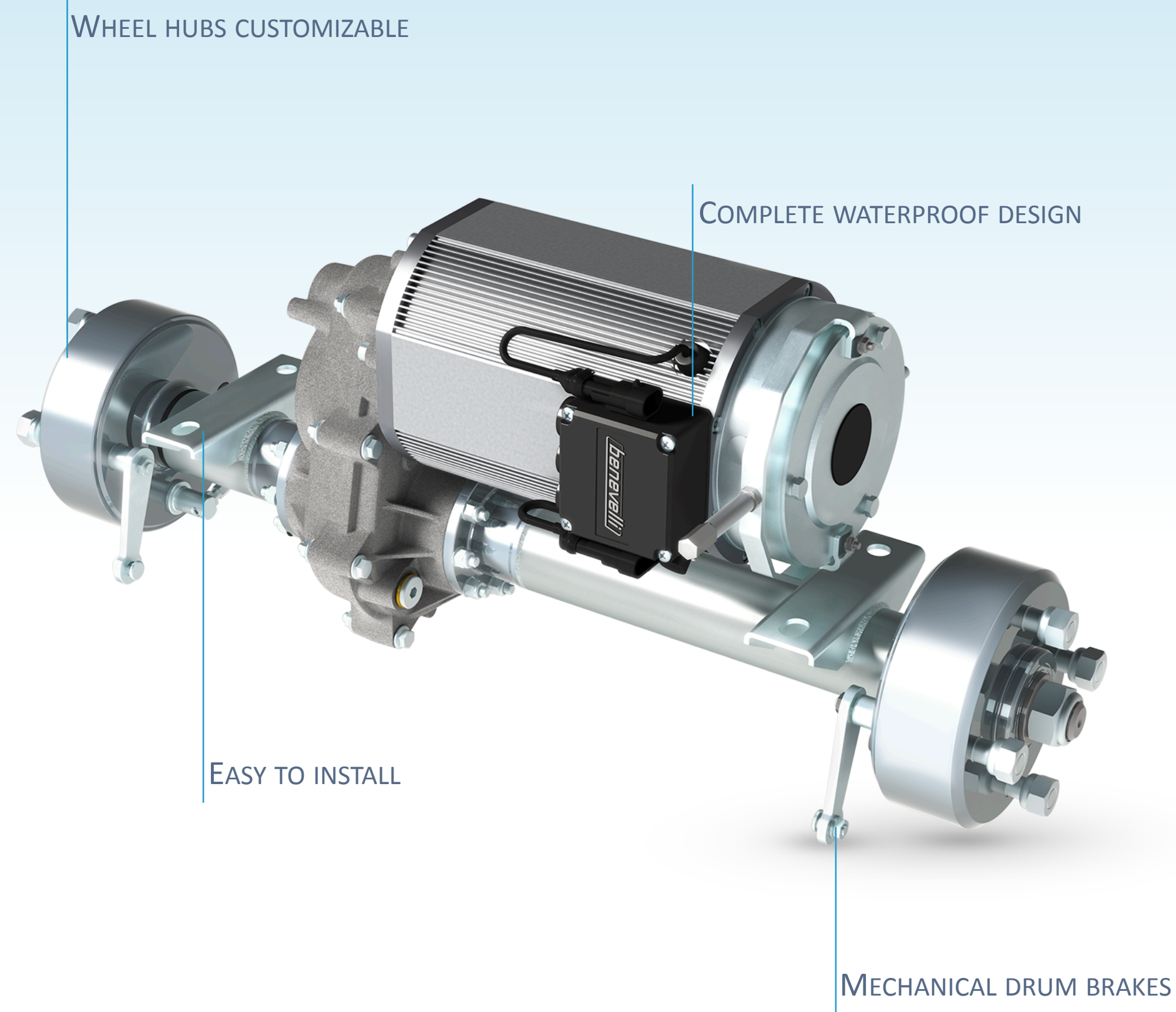


3D DRAWING



REQUEST A QUOTE

TX1 SERIE PLUS - MECHANICAL DRUM BRAKES VERSION

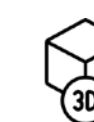


GEARBOX FEATURES		
RATIOS	I	6 - 10 - 12 - 16 - 22 - 24 - 28 - 32
OUTPUT TORQUE	NM	500
INPUT SPEED (MAX)	RPM	7.200
STATIC LOAD	KG	500
TRACK-WIDTH	MM	400 ÷ 1150
GEARBOX FINISHING		GROUND GEARS
EFFICIENCY	%	95
DIFFERENTIAL LOCK		OPTIONAL

MOTOR FEATURES		
MOTOR TYPE		AMAC - SMAC
RATED POWER	kW	0,6 ÷ 3,0
RATED VOLTAGE	V	24 ÷ 120
INSULATION CLASS		F (155°)
PROTECTION DEGREE	IP	54 ÷ 67
SERVICE BRAKING		MECHANICAL - NM 500
PARKING BRAKING		ELECTROMAGNETIC - NM 6 ÷ 20
MANUAL RELEASE		OPTIONAL



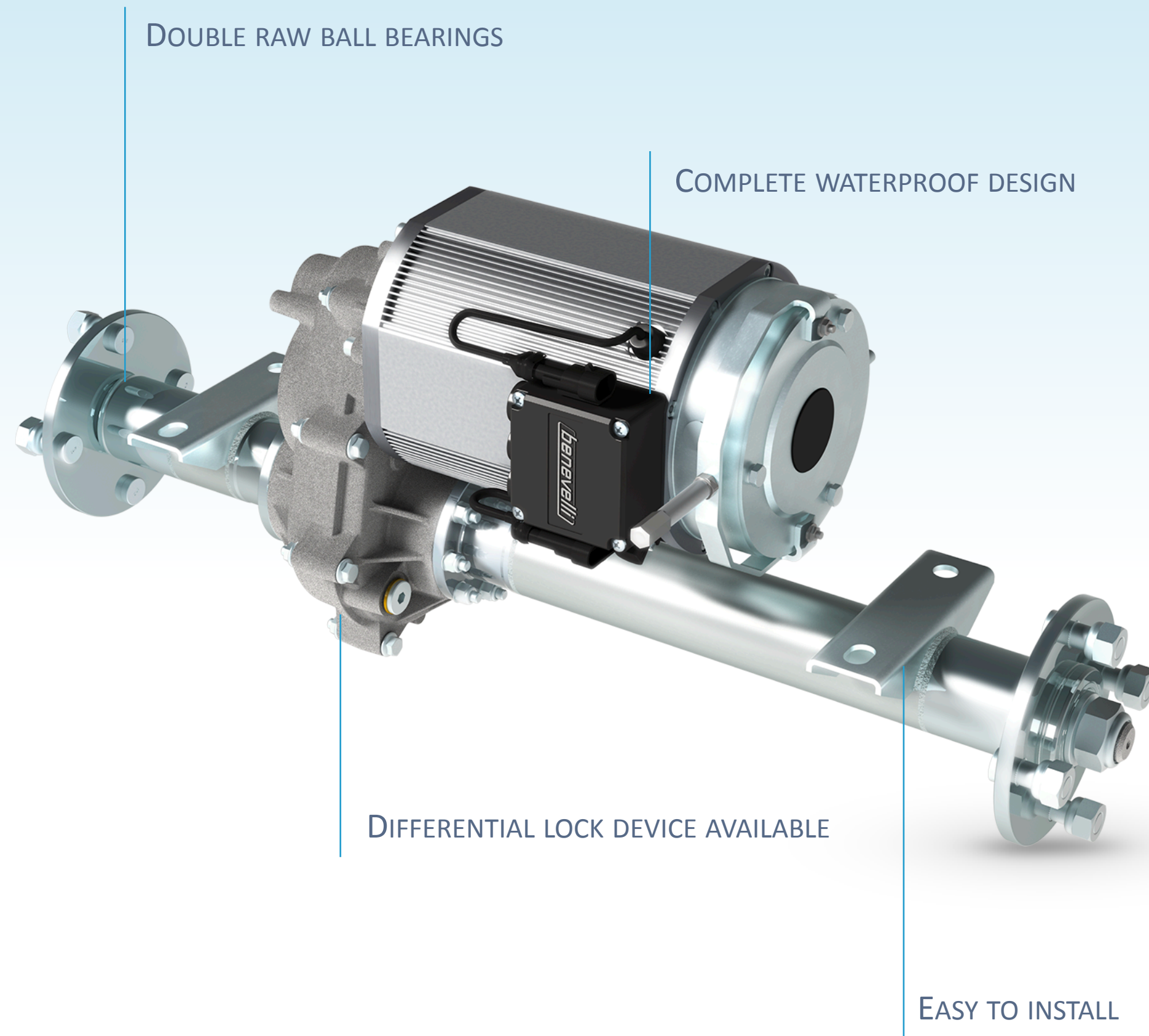
TECHNICAL SUPPORT



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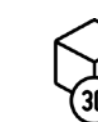


GEARBOX FEATURES		
RATIOS	I	6 - 10 - 12 - 16 - 22 - 24 - 28 - 32
OUTPUT TORQUE	NM	500
INPUT SPEED (MAX)	RPM	7.200
STATIC LOAD	KG	700
TRACK-WIDTH	MM	400 ÷ 1150
GEARBOX FINISHING		GROUND GEARS
EFFICIENCY	%	95
DIFFERENTIAL LOCK		OPTIONAL

MOTOR FEATURES		
MOTOR TYPE		AMAC - SMAC
RATED POWER	kW	0,6 ÷ 3,0
RATED VOLTAGE	V	24 ÷ 120
INSULATION CLASS		F (155°)
PROTECTION DEGREE	IP	54 ÷ 67
SERVICE BRAKING		-
PARKING BRAKING		ELECTROMAGNETIC - Nm 6 ÷ 20
MANUAL RELEASE		OPTIONAL



TECHNICAL SUPPORT

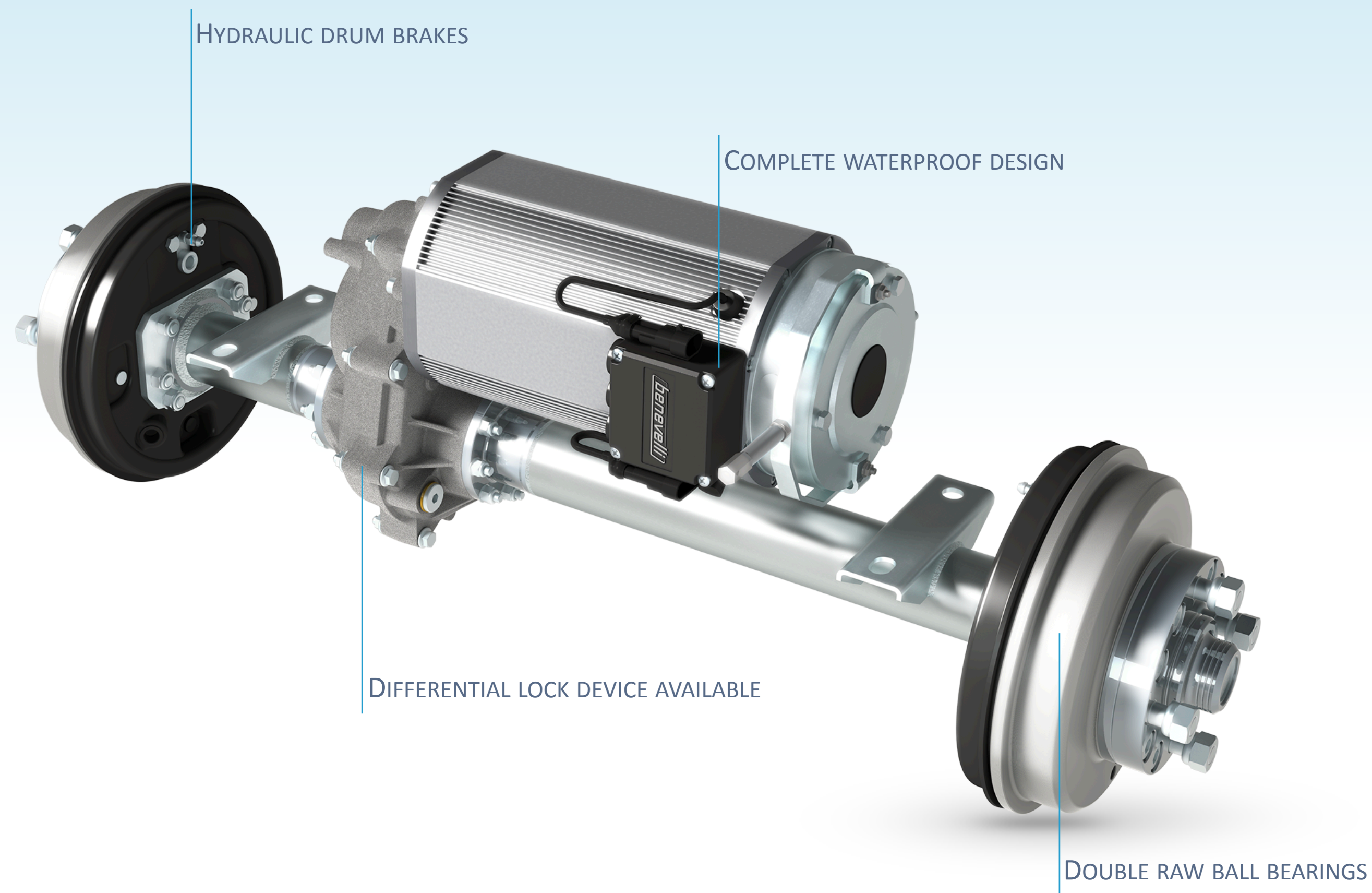


3D DRAWING



REQUEST A QUOTE

TX1 SERIE **MAX** - DRUM BRAKES VERSION

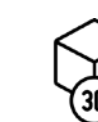


GEARBOX FEATURES		
RATIOS	I	6 - 10 - 12 - 16 - 22 - 24 - 28 - 32
OUTPUT TORQUE	NM	500
INPUT SPEED (MAX)	RPM	7.200
STATIC LOAD	KG	700
TRACK-WIDTH	MM	400 ÷ 1150
GEARBOX FINISHING		GROUND GEARS
EFFICIENCY	%	95
DIFFERENTIAL LOCK		OPTIONAL

MOTOR FEATURES		
MOTOR TYPE		AMAC - SMAC
RATED POWER	kW	0,6 ÷ 3,0
RATED VOLTAGE	V	24 ÷ 120
INSULATION CLASS		F (155°)
PROTECTION DEGREE	IP	54 ÷ 67
SERVICE BRAKING		HYDRAULIC/MECHANICAL - Nm 1.200
PARKING BRAKING		ELECTROMAGNETIC - Nm 6 ÷ 20
MANUAL RELEASE		OPTIONAL



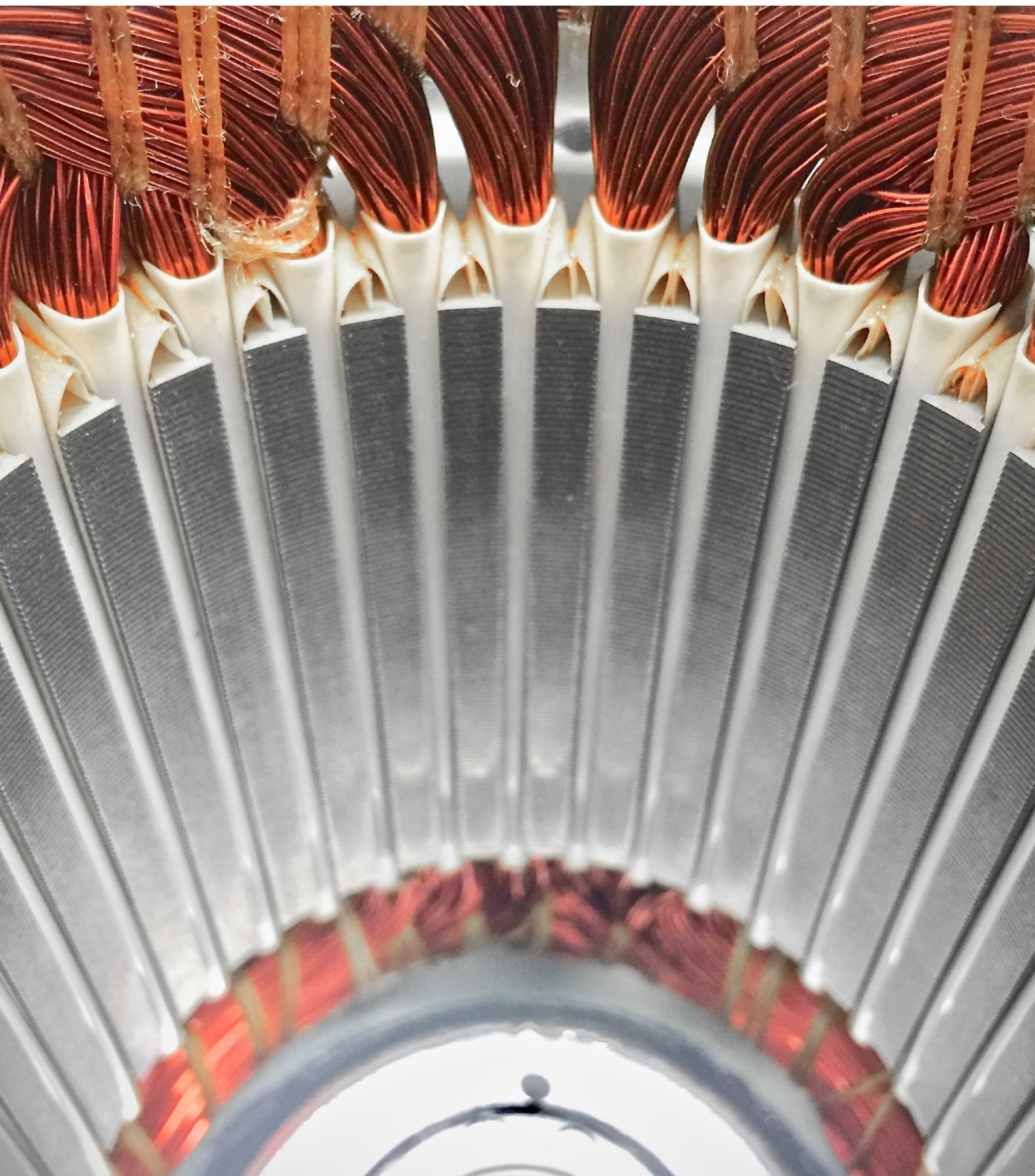
TECHNICAL SUPPORT



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MECHATRONIC SOLUTIONS

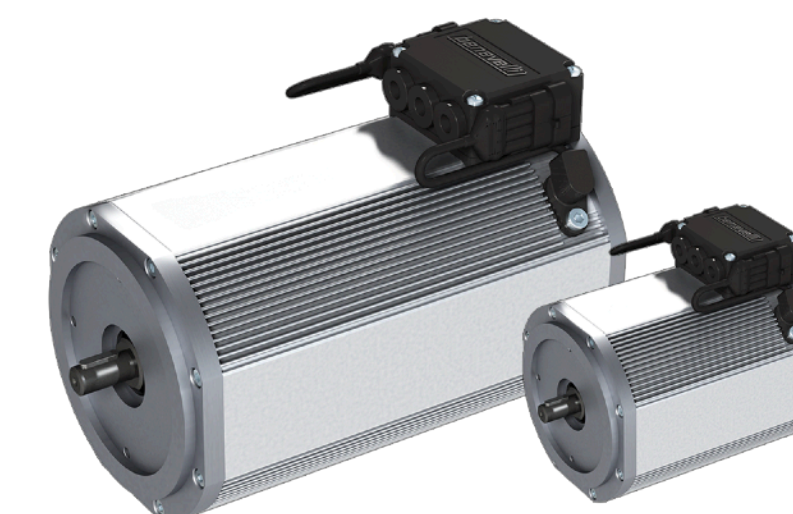
With the same philosophy that has distinguished us for 56 years, we are now able to design and build electric motors providing to customers complete mechatronic solutions.

Benevelli motors are available in three different technologies: DC (PMDC Serie), ACIM (AMAC Serie) and the newest PMAC (SMAC Serie) with power from 0.3 to 3kW and voltages from 24 to 120V.

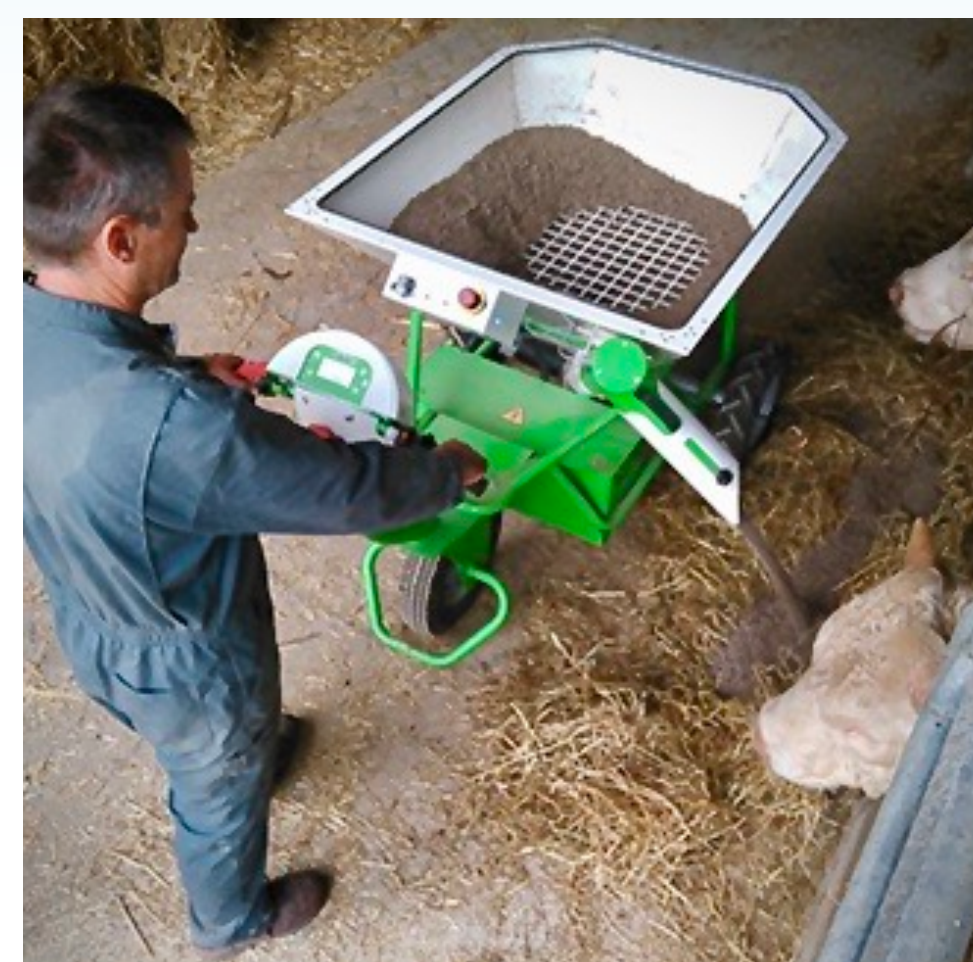
Entrust to our technicians to define what is the best choice for your vehicle, we will be able to better guide you by offering comparisons between the different available systems.

COMPARATIVE TABLE

	PMDC Serie	AMAC Serie	SMAC Serie
EM parking brake	✓	✓	✓
Speed encoder		✓	✓
Maintenance free		✓	✓
Noise level		✓	✓
Temp °C sensor		✓	✓
UL ready		✓	✓
High efficiency			✓
Constant torque			✓
Working Temp °C			✓



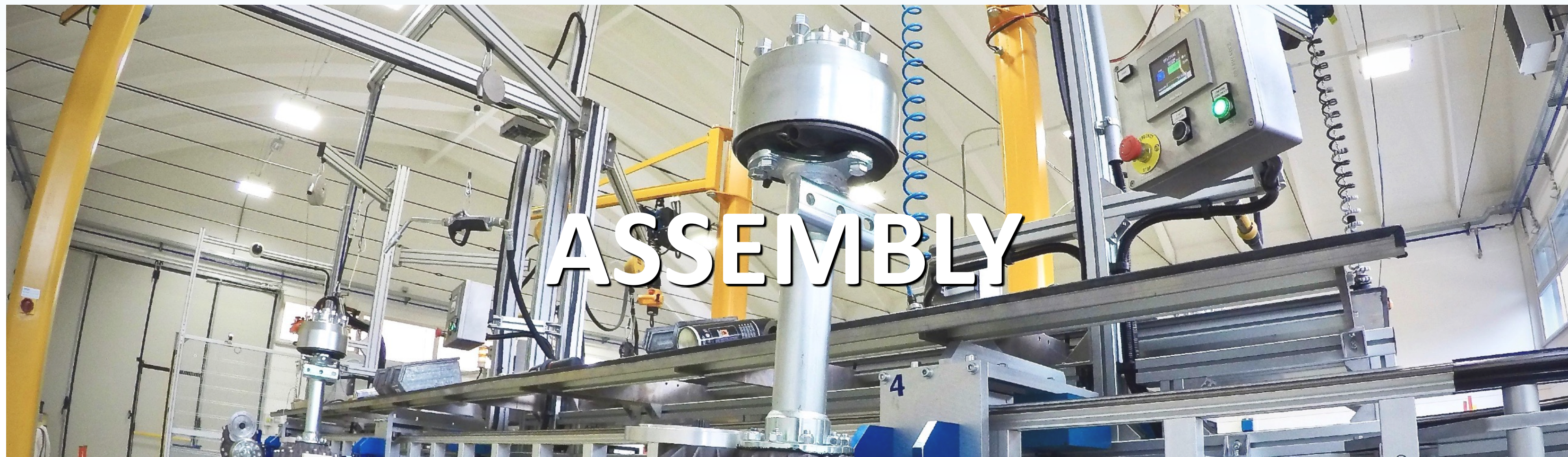
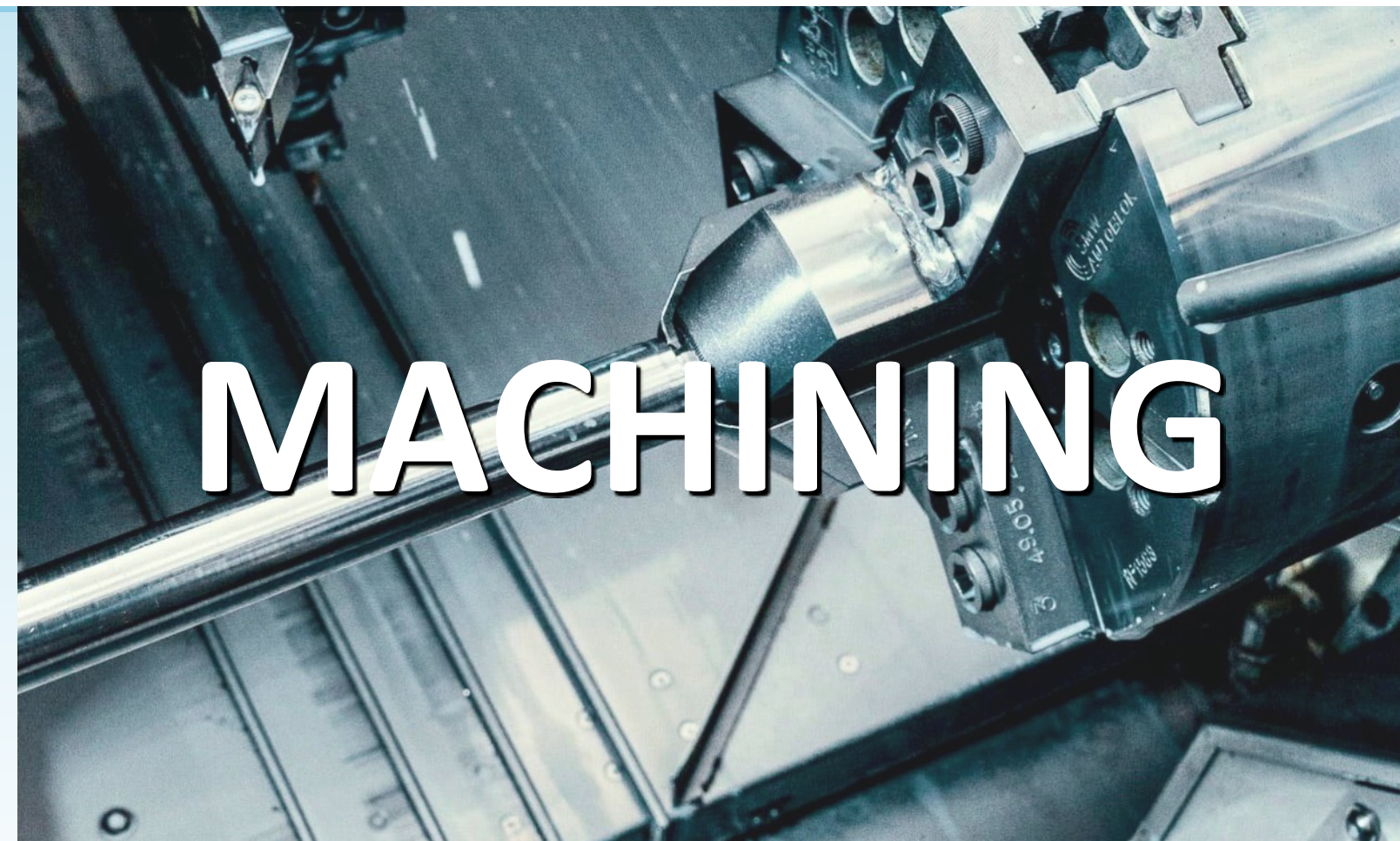
TX1 SERIE - eMOBILITY APPLICATIONS



OUR CUSTOMERS

Benevelli expertise is transferable in many industries and our projects reflect this diversity. Benevelli has experience in eMobility market and we are able to follow the electrification of your vehicles from prototype to serial production.

DRIVING THE FUTURE OF **ELECTRIC VEHICLES**



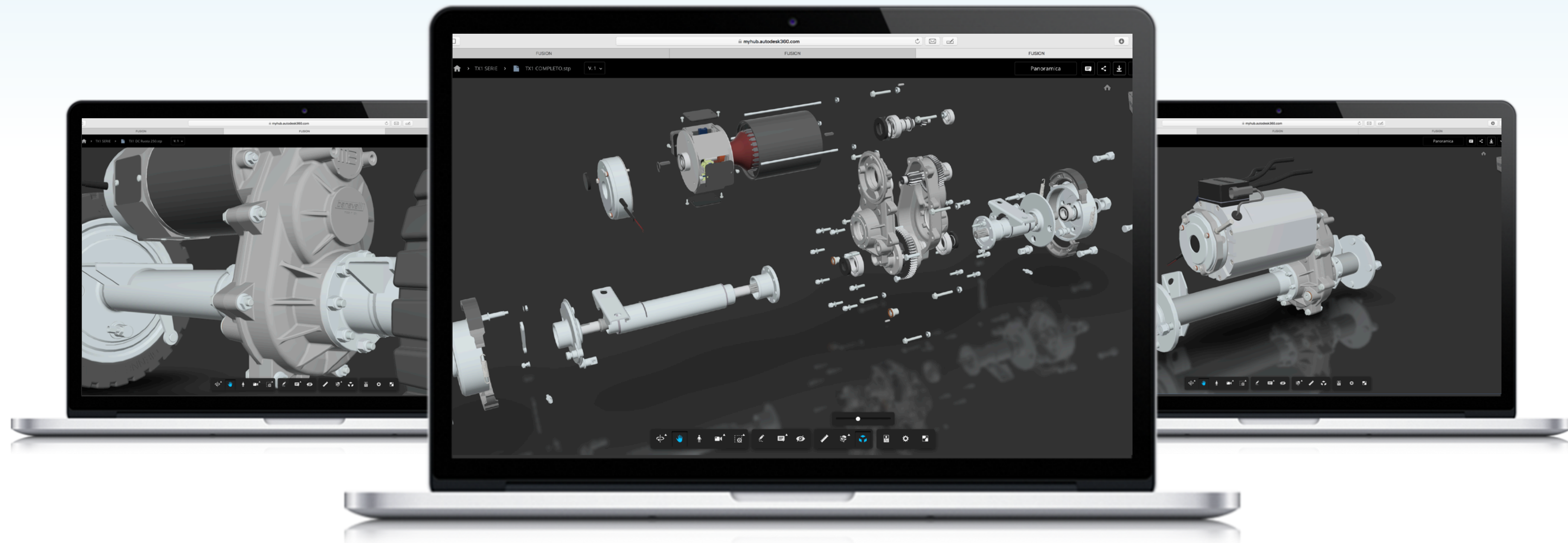
ABOUT BENEVELLI

Benevelli has been working for more than half a century manufacturing products reliable and of superior quality, creating a competitive advantage for customers. Benevelli follow 100% of production processes maintaining total control of manufactured parts and work progress.

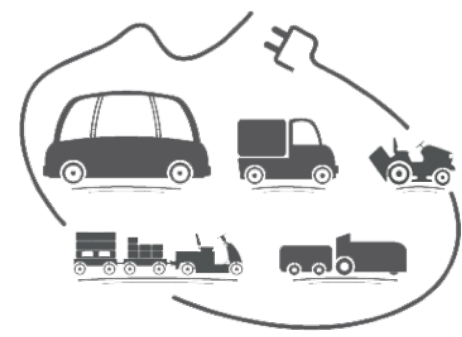
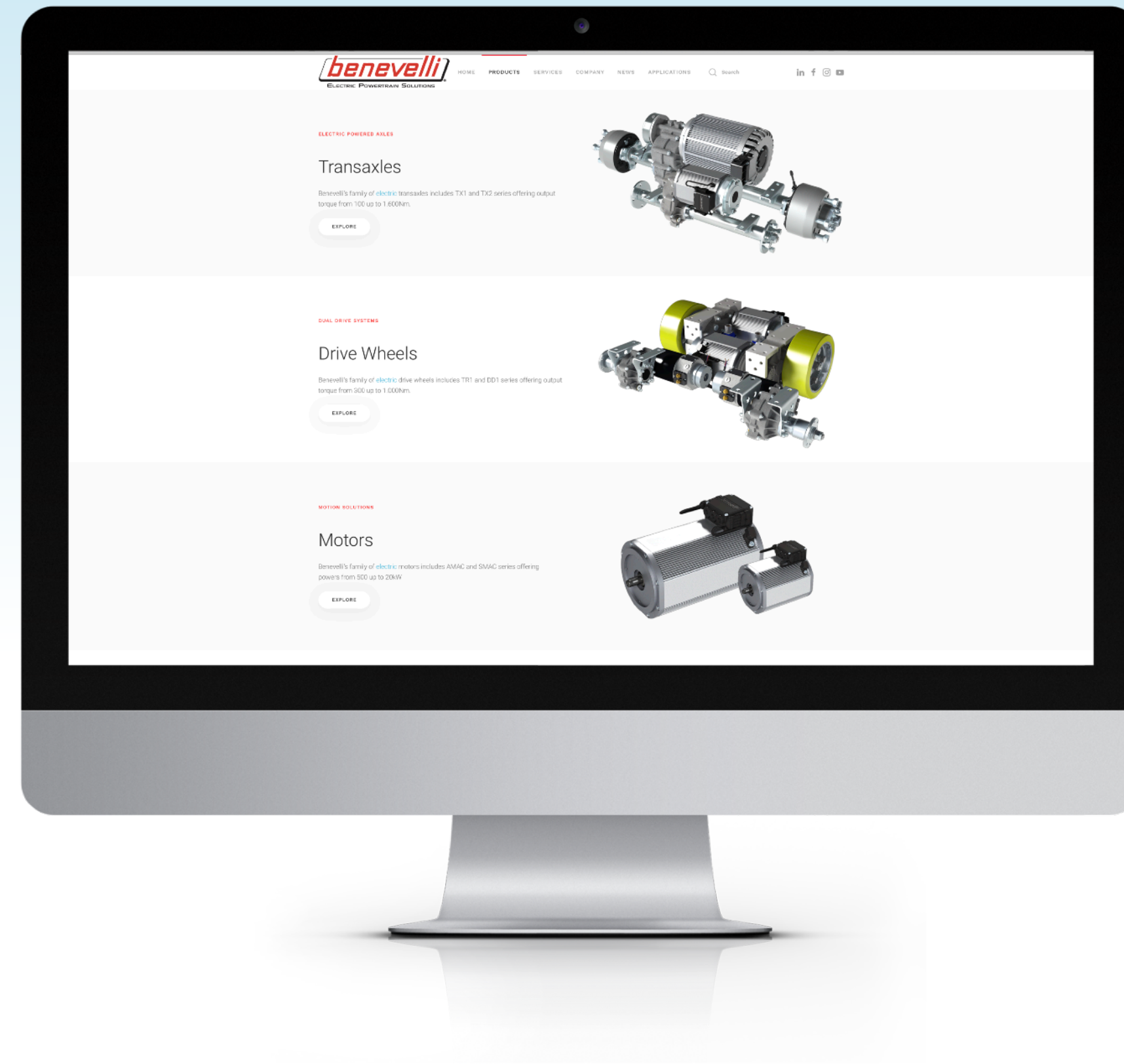
DRIVING THE FUTURE OF **ELECTRIC** VEHICLES

OUR EXPERTISE DRIVES INNOVATIONS

Our team of expert engineers is ready to work with you to understand the exact functionality your equipment needs to operate at optimum capacity, and then design a solution to help make it possible.



DRIVING THE FUTURE OF **ELECTRIC** VEHICLES



Do you want to know more?
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Italy

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