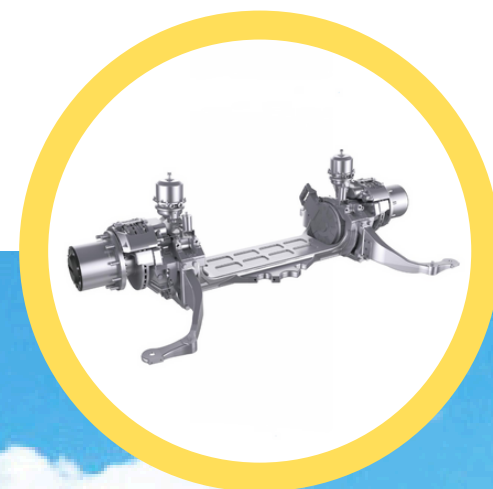


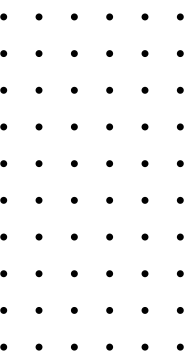


SHANGHAI OE INDUSTRIAL CO., LTD.



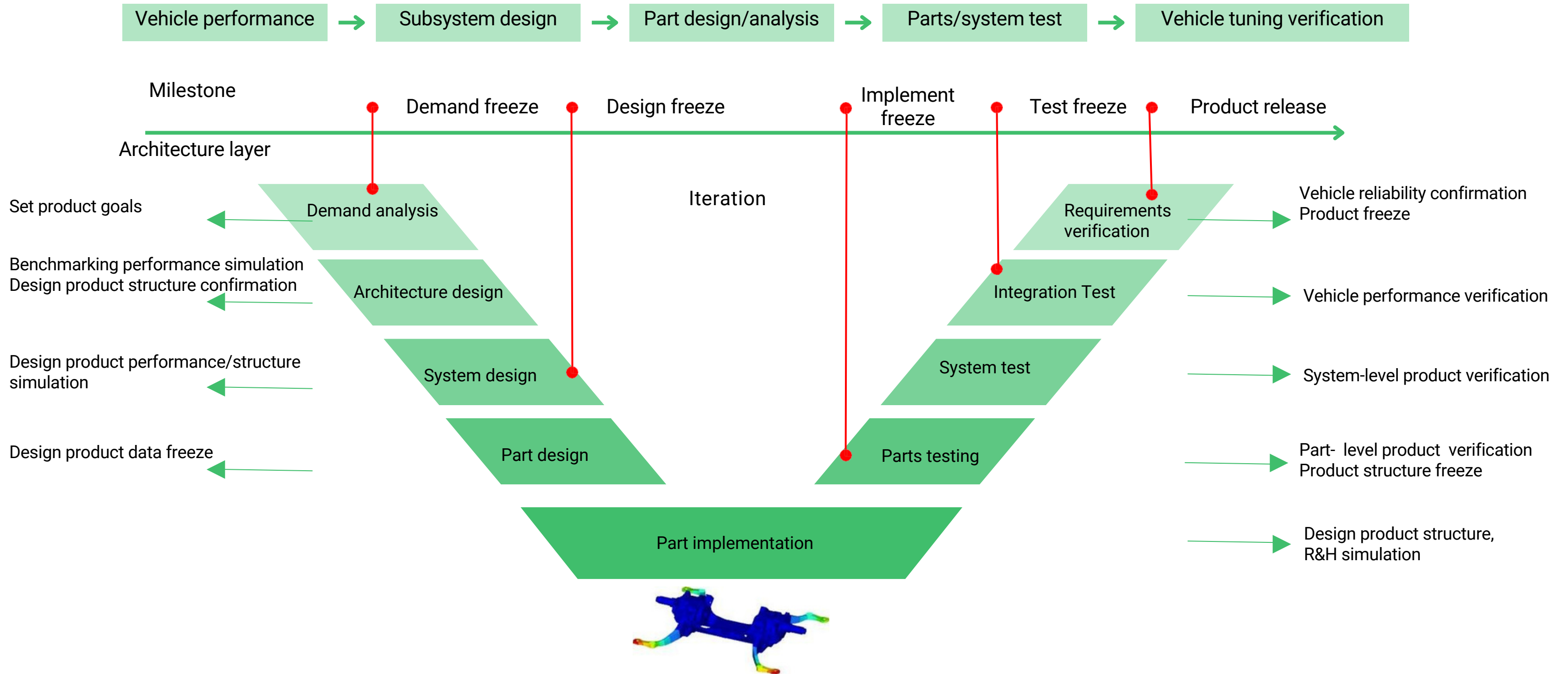
SHANGHAI OE INDUSTRIAL CO., LTD.

PRODUCT BROCHURE – ELECTRIC AXLE



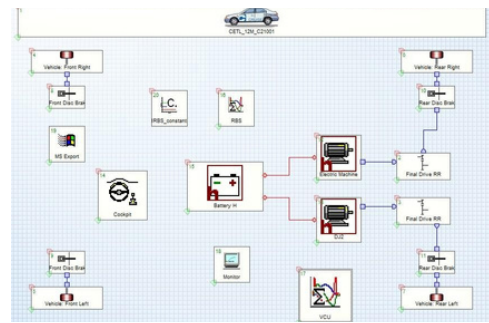
R&D CAPABILITY

Following functional safety standards, we adopt a V-shaped positive development process. By utilizing advanced project management methods and supportive processes, we ensure efficient project development and reliable products.

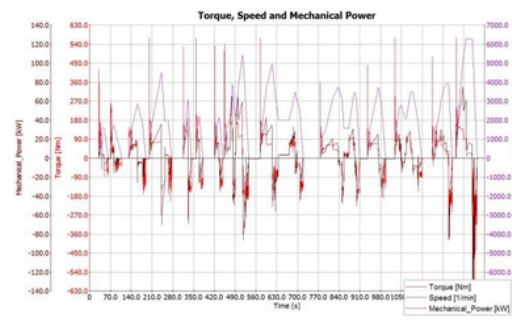


PRODUCT VERIFICATION

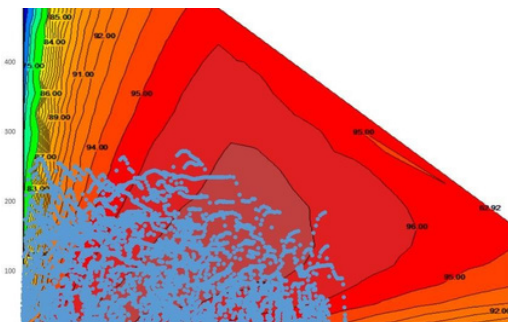
- Based on the customer's power and economic needs, we analyze actual working conditions to optimize motor and system efficiency. We then provide VCU-driving strategy recommendations or integrate economic strategies into the DCU control.
- Using enhanced road spectrum data, we conduct load-bearing reliability analysis to ensure accurate initial design and successful first-time testing, reducing development costs and cycle time.
- By analyzing data from enhanced and social roads, we design the drive system and conduct accelerated fatigue testing to ensure a first-time pass. This process reduces costs, shortens development time, and meets customer needs.



Dynamic and economic analysis



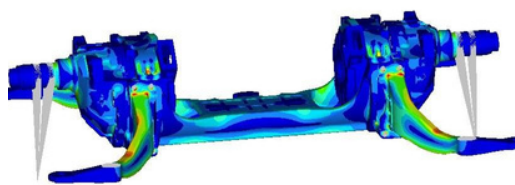
Road condition analysis



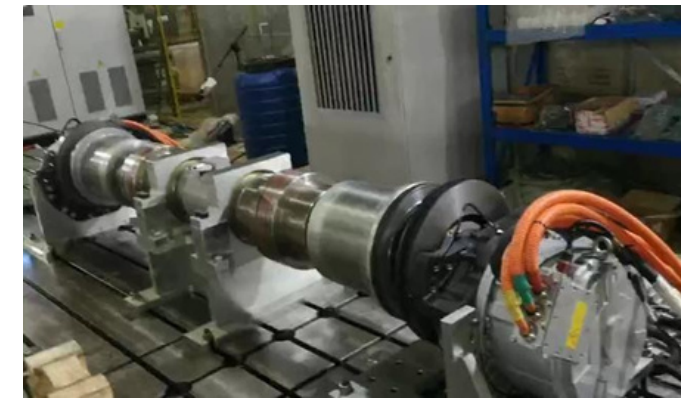
Optimize the high efficiency area of the motor according to the working conditions



Rotary drum test



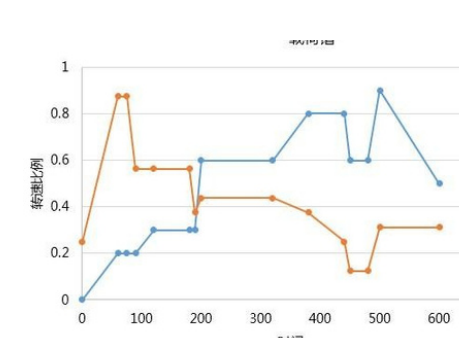
Loading reliability simulation



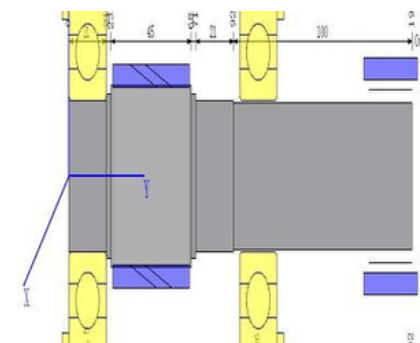
Drive system durability test



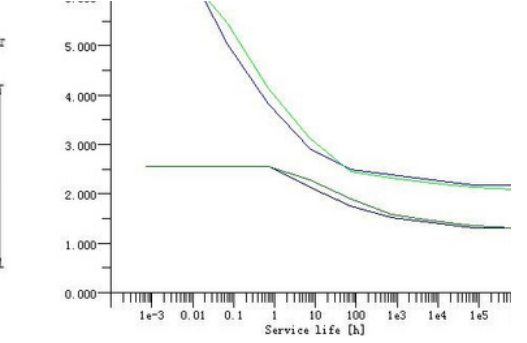
Enhanced road test



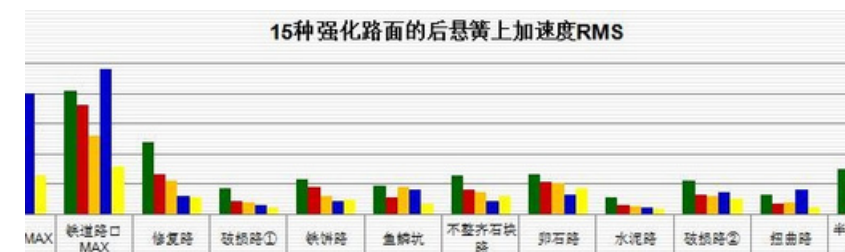
Load spectrum



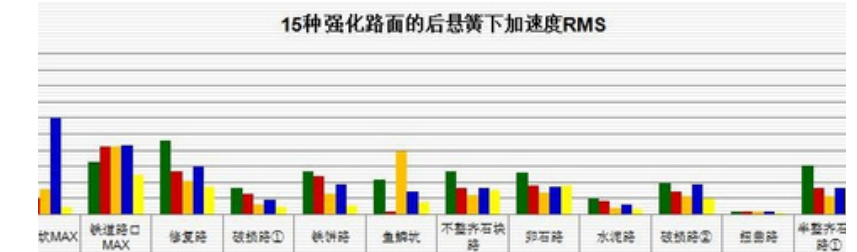
Gear shaft model



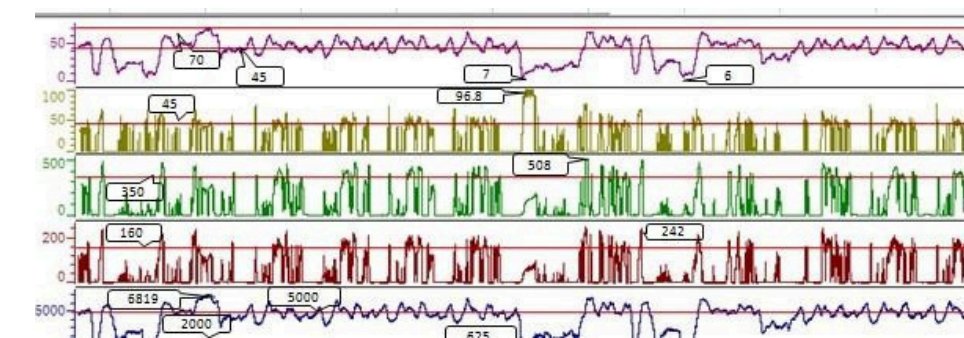
Life prediction



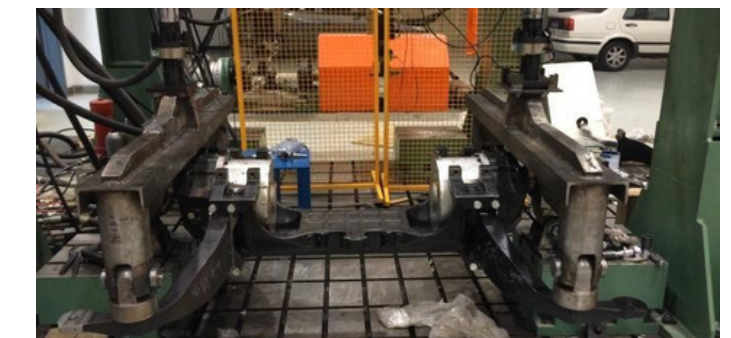
Strengthen the vibration acceleration collection on the suspension spring after the road



Enhancing the acceleration collection of the lower and upper vibration of the suspension spring



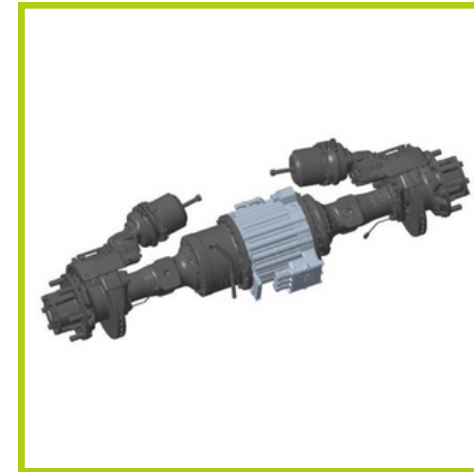
Enhancing load spectrum collection of road drive system



Loading reliability test

FULL VEHICLE COVERAGE

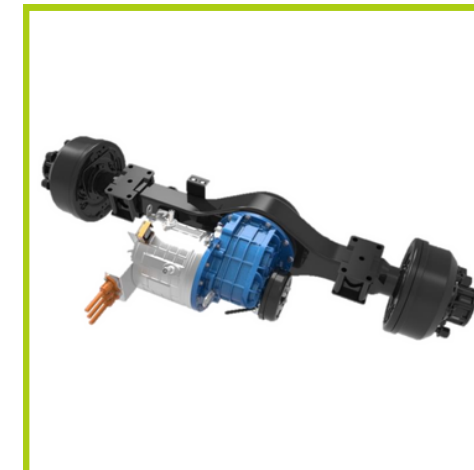
Driven by our forward-thinking approach to customer needs and the future of transportation, we have strategically developed two advanced technological routes in the electric drive axle category: distributed and integrated drive systems. These solutions comprehensively cater to the diverse requirements of new energy buses, light trucks, heavy trucks, tractors, and sanitation vehicles.



Coaxial Electric Drive System

Designed for pure electric buses, this system integrates the motor and drive axle into one unit. The motor is arranged coaxially with the axle housing, creating a more compact structure and a highly concentrated power system, which optimizes the chassis layout. It adopts an integrated structure to adapt to the specific conditions of electric vehicles.

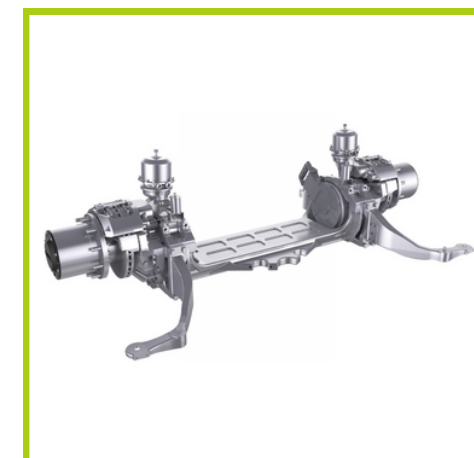
- Smallest chassis footprint in the industry
- High-precision cylindrical helical gear transmission



Parallel-Axis Electric Drive System

The motor and reducer are mounted on the drive axle, with the motor positioned parallel to the axle housing. Utilizing cylindrical gear transmission for a high gear ratio, the integrated design removes unnecessary transmission components, resulting in a more compact structure and increased transmission efficiency.

- Achieved mass deployment
- Integrated multi-speed, multi-motor system



Distributed Electric Drive System

The dual motor system using the wheel-side reducer features a short transmission chain and lightweight design for high transmission efficiency. The integrated design conserves chassis space and allows the battery to be located underneath. Wheel-side vectoring improves handling and maneuverability.

- Low-floor design, extra-wide aisle
- 20% lighter than direct drive system

**ELECTRIC AXLE CATALOG**

Coaxial Electric Drive System				
Model	Applicable models	Rated axle load capacity	Motor power	Max. output torque
6PE	5 m - 6 m bus; minibus	3500 kg	60/130 kW	5700 N.m
8PE	6 m - 7.2 m bus	5500 kg	90/160 kW	7285 N.m
31PE	8 m - 8.5 m bus	8500 kg	80/150 kW	13000 N.m
Parallel-Axis Electric Drive System				
Model	Applicable models	Rated axle load capacity	Motor parameters	Max. output torque
Z0024AETS	3.5 T - 4.5 T truck; 6 m bus	2500 kg	60/110 kW; 150/350 N.m	4200 N.m
Z0035AETS	4.5 T - 6.0 T truck; 6 m bus	3500 kg	60/120 kW; 145/335 N.m	5300 N.m
Z00093AETS	4x2/6x4 tractor; 18 T municipal vehicle	13000 kg	150/252 kW; 285/550 N.m	39089 N.m
Z00004AETS	4x2/6x4 tractor; 18 T municipal vehicle	13000 kg	125/250 kW; 350/800 N.m	41690 N.m
Z00054AETS	4x2/6x4 tractor; 18 T municipal vehicle	13000 kg	2x72/2x160 kW; 2x156/2x380 N.m	44783 N.m
A5PE (front axle steering)	4.5 T - 6.0 T truck; 5 m - 6 m bus	2700 kg	60/115 kW; 135/350 N.m	5400 N.m
Distributed Electric Drive System				
Model	Applicable models	Rated axle load capacity	Motor max. power	Max. output torque
F058AE	Tourist bus, light-duty truck	5000 kg	2x74 kW	2x4060 N.m
K0011AE	Virtual rail metros with rubber-tire	9000 kg	2x90 kW	2x6142 N.m
100041C	8 m - 9 m bus	9000 kg	2x120 kW	2x7020 N.m
N0012AE	10.5 m - 18 m bus	13000 kg	2x160 kW	2x10776 N.m
P0012AE	Airport shuttle bus	14000 kg	2x160 kW	2x10776 N.m
N0005AE	4x2/6x2/6x4 tractor, 4x2/8x4/6x2 truck	13000 kg	2x180 kW	2x25000 N.m

COAXIAL ELECTRIC DRIVE SYSTEM



Highly-integrated transmission system; weight reduced by over **100 kg**; passenger capacity increased by over **30%**



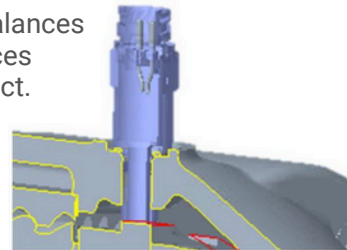
Cabin noise under **70 dB**; enhanced driving comfort



100,000 km maintenance intervals; reduced lifecycle costs

100% reverse torque; energy consumption reduced by 15%; range extended significantly

Symmetrical layout balances unsprung mass, reduces suspension load impact.

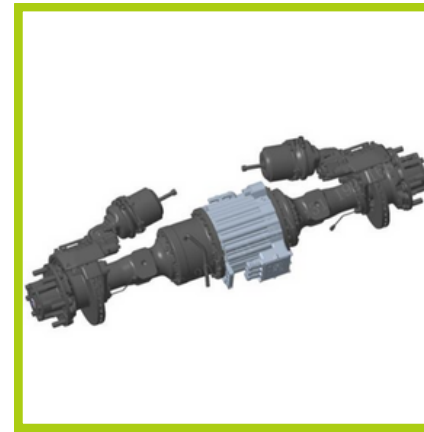


Main reducer oil temp monitoring; gear speed monitoring (optional)

Solution Features

- **Safer:** features IP68 protection, active gear speed monitoring, real-time monitoring of main reducer oil and brake disc temperatures, and friction plate wear alarms for enhanced safety.
- **Lighter:** coaxial integration of the motor and axle housing leads the industry in integration technology, resulting in the smallest chassis footprint and lightweight weight for an electric drive axle.
- **Quieter:** high-precision helical cylindrical gears ensure the reducer is lightweight, highly efficient, and operates with low noise and long lifespan.

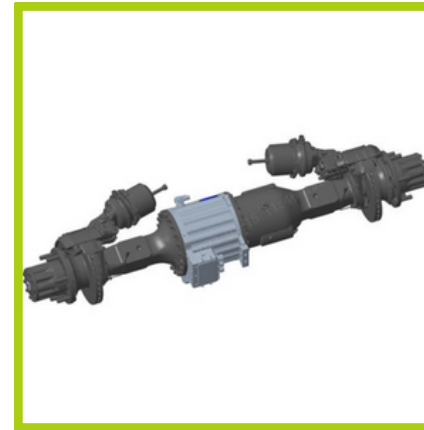
6PE



Motor	Voltage	360/540 V
	Rated/peak power	60/130 kW
	Rated/peak torque	145/350 N.m
	Rated/peak speed	4000/12000 rpm
System	Maximum output torque	5700 N.m
	Rated axle load capacity	3500 kg
	Gear ratio	16.5

- Applicable models: 4.5 T logistics vehicle, 5 m - 6 m bus/minibus

8PE



Item	Parameters	City bus	Intercity bus
Motor	Voltage	540 VDC	540 VDC
	Rated/peak power	90/160 kW	60/140 kW
	Rated/peak torque	200/500 N.m	160/360 N.m
	Rated/peak speed	4300/9000 rpm	3580/12000 rpm
System	Maximum output torque	7285 N.m	5240 N.m
	Rated axle load capacity	5500 kg	5500 kg
	Gear ratio	14.57	14.57

- Applicable models: 6 m - 7.5 m bus/coach

31PE



Motor	Voltage	540 VDC
	Rated/peak power	80/150 kW
	Rated/peak torque	230/650 N.m
	Rated/peak speed	3400/10000 rpm
System	Maximum output torque	13000 N.m
	Rated axle load capacity	8500 kg
	Gear ratio	19.89

- Applicable models: 8 m - 8.5 m bus



PARALLEL-AXIS ELECTRIC DRIVE SYSTEM

Z0024AETS



Motor	Rated/peak power	60/110 kW
	Rated/peak torque	150/350 N.m
	Maximum speed	11000 rpm
Gearbox	Gear ratio	12
System	Maximum output torque	4200 N.m
	Maximum output speed	916 rpm
	Total weight	200 kg
	Rated axle load capacity	2500 kg

- Applicable models: 3.5 T - 4 T logistics vehicle, 6 m bus

Z0035AETS



Motor	Rated/peak power	60/120 kW
	Rated/peak torque	145/335 N.m
	Maximum speed	12000 rpm
Gearbox	Gear ratio	16.6
System	Maximum output torque	5300 N.m
	Maximum output speed	723 rpm
	Total weight	270 kg
	Rated axle load capacity	3500 kg

- Applicable models: 4.5 T - 6 T logistics vehicle, 6 m bus

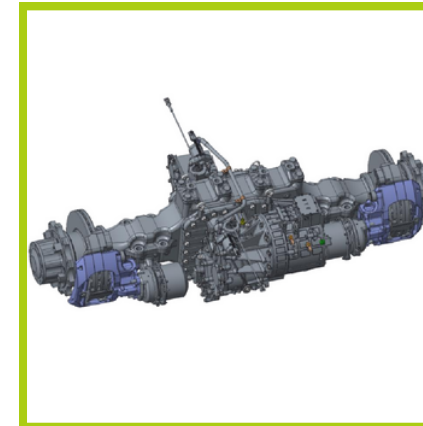
A5PE (front axle steering)



Motor	Voltage	360/540 V
	Rated/peak power	60/115 kW
	Rated/peak torque	135/350 N.m
	Rated/peak speed	4244/12000 rpm
System	Maximum output torque	5400 N.m
	Rated axle load capacity	2700 kg
	Gear ratio	16.5

- Applicable models: 4.5 T - 6.0 T truck; 5 m - 6 m bus

~~Z00093AETS~~



Motor	Rated/peak power	150/252 kW
	Rated/peak torque	285/550 N.m
	Maximum speed	8000 rpm
Gearbox	Gear ratio	10.237 - 71.034
System	Maximum output torque	39089 N.m
	Maximum output speed	781 rpm
	Total weight	850 kg
	Rated axle load capacity	13000 kg

- Applicable models: 4x2/6x4 tractor; 18 T municipal vehicle/truck

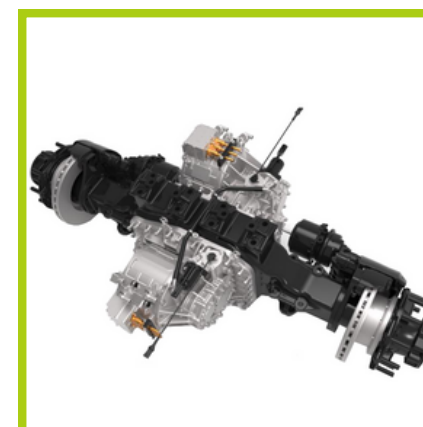
Z00004AETS



Motor	Rated/peak power	125/250 kW
	Rated/peak torque	350/800 N.m
	Maximum speed	9000 rpm
Gearbox	Gear	1 2
	Gear ratio	13.203 4.367
System	Wheel-side gear ratio	3.947
	Maximum output torque	41690 N.m
	Maximum output speed	522 rpm
	Total weight	1020 kg
	Rated axle load capacity	13000 kg

- Applicable models: 4x2/6x4 tractor; 18 T municipal vehicle/truck

~~Z00054AETS~~

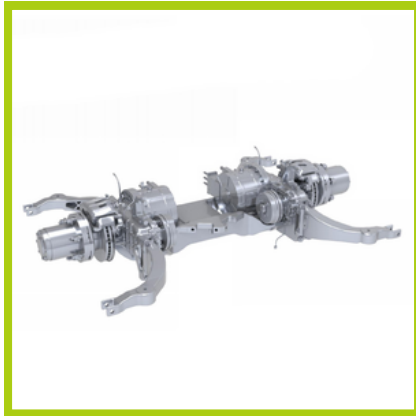


Motor	Rated/peak power	72/160 kW
	Rated/peak torque	156/380 N.m
	Maximum speed	10000 rpm
Gearbox	Gear ratio	8.32 - 71.027
System	Maximum output torque	44783 N.m
	Maximum output speed	1201 rpm
	Total weight	900 kg
	Rated axle load capacity	13000 kg

- Applicable models: 4x2/6x4 tractor; 18 T municipal vehicle/truck

DISTRIBUTED ELECTRIC DRIVE SYSTEM

F058AE



Motor	Rated voltage	540 VDC
	Rated/peak power	2x37/2x74 kW
	Rated/peak torque	2x126/2x382 N.m
	Maximum speed	10000 rpm
Gear	Gear ratio	10.63
System	Total weight	550 kg
	Rated axle load capacity	5000 kg
	Maximum output speed	940 rpm
	Brake	Hydraulic disc brake

- Applicable models: tourist bus, light-duty truck

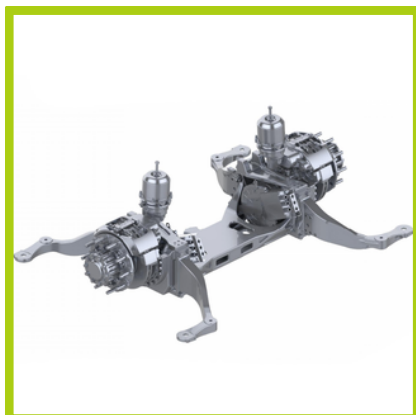
K0011AE



Motor	Rated voltage	600 VDC
	Rated/peak power	2x55/2x90 kW
	Rated/peak torque	2x140/2x350 N.m
	Maximum speed	9500 rpm
Gear	Gear ratio	17.55
System	Total weight	950 kg
	Rated axle load capacity	5000 kg
	Maximum output speed	540 rpm
	Brake	Air disc brake

- Applicable models: virtual rail metros with rubber-tire

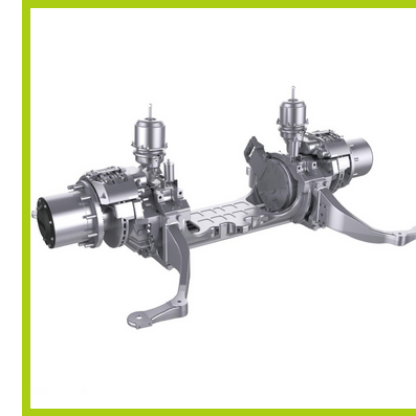
100041C



Motor	Rated voltage	540 VDC
	Rated/peak power	2x60/2x120 kW
	Rated/peak torque	2x145/2x400 N.m
	Maximum speed	9500 rpm
Gear	Gear ratio	17.55
System	Total weight	850 kg
	Rated axle load capacity	9000 kg
	Maximum output speed	540 rpm
	Brake	Air disc brake

- Applicable models: 8 m - 9 m bus

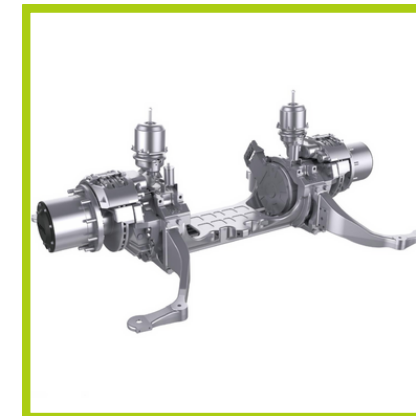
N0012AE



Motor	Rated voltage	540 VDC
	Rated/peak power	2x80/2x160 kW
	Rated/peak torque	2x220/2x580 N.m
	Maximum speed	8000 rpm
Gear	Gear ratio	18.58
System	Total weight	1080 kg
	Rated axle load capacity	13000 kg
	Maximum output speed	430 rpm
	Brake	Disc brake

- Applicable models: 10.5 m - 18 m bus

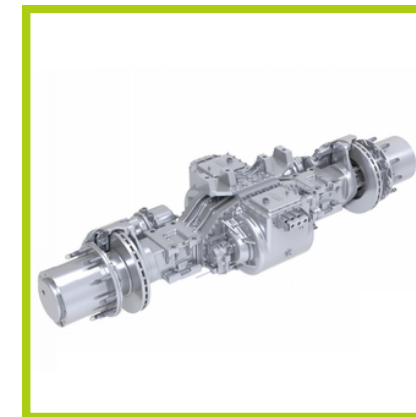
P0012AE



Motor	Rated voltage	540 VDC
	Rated/peak power	2x80/2x160 kW
	Rated/peak torque	2x220/2x580 N.m
	Maximum speed	8000 rpm
Gear	Gear ratio	18.58
System	Total weight	1127 kg
	Rated axle load capacity	14000 kg
	Maximum output speed	430 rpm
	Brake	Disc brake

- Applicable models: airport shuttle bus

N0005AE



Motor	Rated voltage	540 VDC
	Rated/peak power	2x80/2x180 kW
	Rated/peak torque	2x250/2x500 N.m
	Maximum speed	9500 rpm
Gear	Gear ratio	49.4/15.3
System	Total weight	1100 kg
	Rated axle load capacity	13000 kg
	Maximum output speed	620 rpm
	Brake	Air disc/drum brake

- Applicable models: 4x2/6x2/6x4 tractor, 4x2/8x4/6x2 truck