



***A*** **AUMAN**

# N New Energy Intelligent Manufacturing Base

The construction of the FOTON new energy plant was completed in May 2020. With an area of 288,500 m<sup>2</sup> and an annual production capacity of 60,000 vehicles, it is built as an intelligent network production workshop configured with RFID, sensors, robots, image detectors, AGV logistics and other equipment.



## Flexible

Following the flexible design and production concept, and realizing high efficiency and high quality to meet market order requirements.



## Digital

Visualized management, configuring the self-comparison error-proof function to ensure high manufacturing quality and efficiency.



## Networking

Interconnected electronic terminals, realizing resource and data sharing, and building a key characteristic control system for unified management.



## Intelligent

IT and OT integration and longitudinal integration of upper layer management and lower layer industry network, realizing intelligent manufacturing management.

# World-class Testing and Verification Ability



BEV test room



FCEV test room



Intelligent network and EMC test room



NVH noise test room



System part test room



Small test run field

## ◆ New energy laboratory



300 KW motor test stand



165 KW motor test stand



Prototype vehicle review room



HIL test room



Battery test room



Heavy-duty environmental chamber

# Famous Suppliers Worldwide



CATL



Jing-Jin Electric



ZF



SACHS



Donaldson



MEKRA LANG



HELLA



WABCO



BOSCH



Valeo



PLASTIC OMNIUM



KNORR-BREMSE



PKC



Continental



Rothwell



# Model Overview



Zero Emissions



Model		Sanitation operation (left)	Sanitation operation (right)	Sanitation transportation (left)	Logistics (left)	Logistics (left)
Body		2,200	2,200	2,200	2,200	2,200
Chassis architecture	Wheel base	3,800	3,800	4,500	5,400	5,400
	Frame	234	234	250	250	250
	Suspension	Front and rear less leaf springs	Front and rear less leaf springs	Front less leaf spring and rear air suspension	Front less leaf spring and rear air suspension	Front less leaf spring and rear air suspension
Core modules	Battery	Lithium iron phosphate (LFP) 246.7 kWh	LFP 246.7 kWh	LFP 281.9 kWh	LFP 281.9 kWh	LFP 281.9 kWh
	Motor	Single motor direct drive	Single motor direct drive	Dual motor direct drive	Dual motor direct drive	Dual motor direct drive
	Rear axle	10.5T	10.5T	9T	9T	9T
Key modules	Tires	275/80R22.5 6+1	275/80R22.5 6+1	275/80R22.5 6+1	275/80R22.5 6+1	275/80R22.5 6+1
	Brakes	Air brake/front disc and rear drum	Air brake/front disc and rear drum	Air brake/front disc and rear drum	Air brake/front disc and rear drum	Air brake/front disc and rear drum

Product Requirements

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城市因我而美  
BETTER LIFE BETTER ME

# SOLUTIONS

- Product portfolio
- Product configuration
- Three-view drawing



## 01

## Product portfolio



Model		Sanitation operation (left)	Sanitation operation (right)	Sanitation transportation(left)	Logistics (left)	Logistics (left)	
	Body	2,200	2,200	2,200	2,200	2,200	
Product Requirements	Chassis architecture	Wheel base	3,800	3,800	4,500	5,400	5,400
		Frame	234	234	250	250	250
		Suspension	Front and rear less leaf springs	Front and rear less leaf springs	Front less leaf spring and rear air suspension	Front less leaf spring and rear air suspension	Front less leaf spring and rear air suspension
	Core modules	Battery	LFP 246.7 kWh	LFP 246.7 kWh	LFP 281.9 kWh	LFP 281.9 kWh	LFP 281.9 kWh
		Motor	Single motor direct drive	Single motor direct drive	Dual motor direct drive	Dual motor direct drive	Dual motor direct drive
		Rear axle	10.5T	10.5T	9T	9T	9T
	Key modules	Tires	275/80R22.5 6+1	275/80R22.5 6+1	275/80R22.5 6+1	275/80R22.5 6+1	275/80R22.5 6+1
		Brakes	Air brake/front disc and rear drum	Air brake/front disc and rear drum	Air brake/front disc and rear drum	Air brake/front disc and rear drum	Air brake/front disc and rear drum

## 02

## Product configuration



## Vehicle Parameters

Drive type	4×2	4×2	4×2	4×2	4×2
Cab	Single low	Single low	Single low	Single low	Extra cab
Steering wheel position	Left	Right	Left	Left	Left
Body width (mm)	2,442	2,442	2,200	2,200	2,200
Wheel base (mm)	3,800	3,800	4,500	5,400	5,400
Vehicle dimensions (mm)	6,630 × 2,442 × 2,810	6,630 × 2,442 × 2,810	7,900 × 2,455 × 2,780	9,500 × 2,455 × 2,780	9,500 × 2,455 × 2,780
GVW(kg)	16,000	16,000	18,000	18,000	18,000
Curb weight (kg)	6,500	6,500	6,780	6,811	6,854
Max. speed (km/h)	80	80	90	90	90
Brake system	Front disc and rear drum	Front disc and rear drum	Front disc and rear drum	Front disc and rear drum	Front disc and rear drum
Front suspension type	Less leaf spring	Less leaf spring	Less leaf spring	Less leaf spring	Less leaf spring
Rear suspension type	Less leaf spring	Less leaf spring	Less leaf spring	Air suspension	Air suspension

## Power Battery

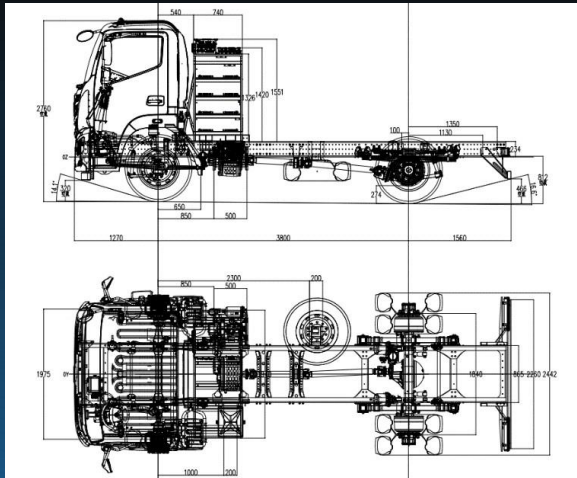
Type	LFP	LFP	LFP	LFP	LFP
Manufacturer	CATL	CATL	CATL	CATL	CATL
Energy (kWh)	246.68	246.68	281.91	281.91	281.91
Normal Voltage (V)	537.6	537.6	618.24	618.24	618.24
Charging type	Quick/*trickle	Quick/*trickle	Quick/*trickle	Quick/*trickle	Quick/*trickle



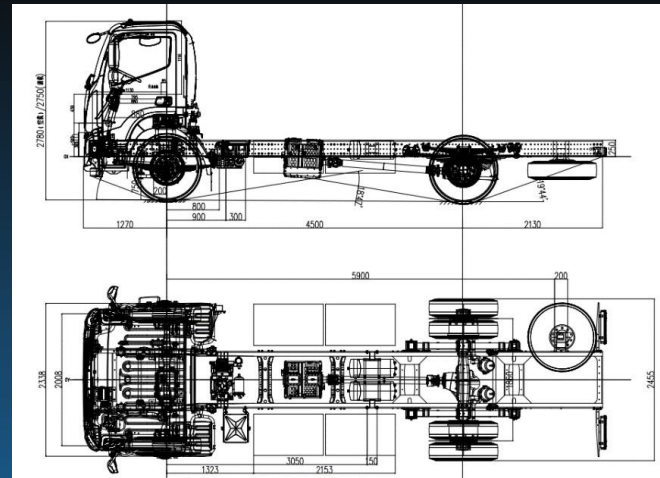
# 02 Product configuration

Type	Motor				
	Permanent magnet synchronous	Permanent magnet synchronous	Permanent magnet synchronous	Permanent magnet synchronous	Permanent magnet synchronous
Power (rated/peak, kW)	100/160	100/160	253/380	253/380	253/380
Torque (rated/peak, Nm)	1,432/2,800	1,432/2,800	2,400/5,000	2,400/5,000	2,400/5,000
Equipment					
Multi-function steering wheel	•	•	•	•	•
Power window and central locking	•	•	•	•	•
Electric A/C system	•	•	•	•	•
MP5	•	•	•	•	•
ABS	•	•	•	•	•
ESP	•	•	•	•	•
AEBS	•	•	•	•	•
LDWS	•	•	•	•	•
Reversing radar	•	•	•	•	•
Reversing image	•	•	•	•	•
Daytime light	•	•	•	•	•
Fog lamps	•	•	•	•	•

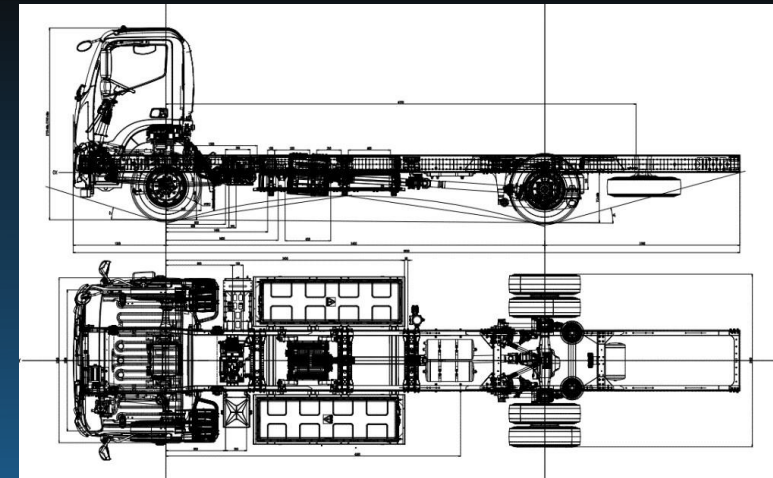
# 03 Three-view drawing



Wheel base: 3,800



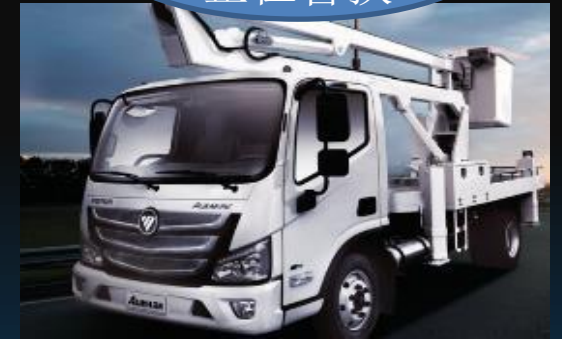
Wheel base: 4,500



Wheel base: 5,400

# 01 Modified operation trucks

车辆图片  
正在替换



Dust suppression truck	
Tank material	Q235
Tank capacity	6 m <sup>3</sup>
Mist cannon range	30 m
Mist cannon rotating angle	± 360°
Tank thickness	4 mm

Sprinkler truck	
Tank material	Q235
Tank capacity	7 m <sup>3</sup>
Tank thickness	4 mm
Water pump suction depth	6.5 m
Sprinkling width	12 m

Street sweeper truck	
Garbage tank capacity (m <sup>3</sup> )	4
Clean water tank capacity (m <sup>3</sup> )	1.5
Cleaning width (mm)	2.8–3.0
Cleaning speed (km/h)	3.15
Vacuuming weight (kg)	1.5

Hydraulic aerial cage truck	
Maximum working height	12 m
Working hopper rated load	200 kg
Slewing angle	± 360° continuously
Operating height with working hopper at max. hourly operating range	2.1 ± 0.2 m
Operating range with working hopper at max. hourly operating height	6.1 ± 0.2 m

# 02 Modified transportation trucks



Garbage truck	
Garbage tank material	Q345
Garbage tank effective capacity (m <sup>3</sup> )	10
Loader capacity (m <sup>3</sup> )	1.5
Hydraulic system rated pressure (MPa)	18
Garbage density after compaction	0.5–0.8 t/m <sup>3</sup>



Obstacle clearing truck	
Maximum bearing capacity of flat-bed mechanism (kg)	4,000
Maximum lifting weight (kg)	4,000
Maximum lifting weight in fully extended state (kg)	1,500
Minimum tilt angle of flat-bed (°)	8
Rated traction force of winch (kN)	40



Oil tank truck	
Tank material	Q235
Tank capacity	10 m <sup>3</sup>
Tank thickness	4 mm

# 03

## Modified examples



# Eco — Super — Truck — Medium



**Professional**



**Safe**



**Intelligent**



**Comfortable**

# PART 01

## Professional

- ① **W**ide applications
- ② **L**ow power consumption
- ③ **E**asy modification
- ④ **H**igh reliability
- ⑤ **A**ll-weather adaptability



# 01 Wide application



Lithium iron phosphate 246/282 kWh large capacity battery

- Applicable to municipal working conditions with high power consumption

- Applicable to municipal working conditions with narrow roads



The turn signal of the front axle increases to  $41^{\circ}$ , realizing a small turning radius



Dual charger fast charging, with the maximum charging current reaching 400A, reducing charging time

- Adaptable to multi-shift fast charging

- Adaptable to bumpy road conditions



Center shifting forward, ensuring rational front and rear axle load distribution



# 02 Low power consumption

## Low power consumption and high economic efficiency

An energy utilization rate of 46%, and the comprehensive energy consumption 70% lower than competitive traditional energy products

### Direct-drive motor

Fewer transmission links, higher transmission efficiency and lower power consumption



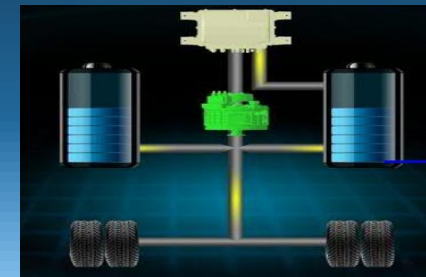
### Light weight

Providing similar reliability with a weight 1–2T lower than competitive products and lower power consumption under similar working conditions



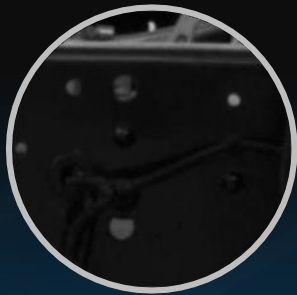
### Energy recovery

Energy recovery function and charging during braking and gliding, ensuring low comprehensive power consumption

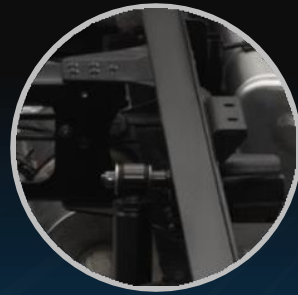


# 03 Easy modification

## Easy installation



Standard hole position



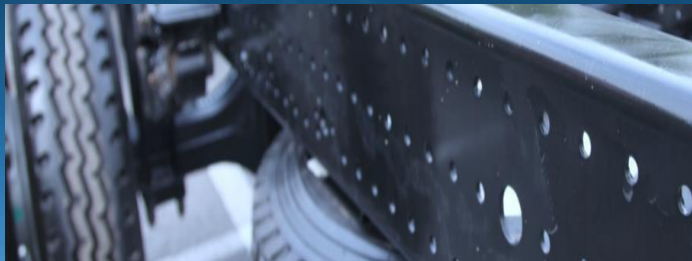
Rivet-free design

## Easy to install with improved modification efficiency



Standard power port

## Easily modifiable with high breaking strength



700L high-strength steel for local enhancement

## Easy snow shovel modification



Enhanced with plate spring to reserve a snow shovel mounting port

# 04 High reliability

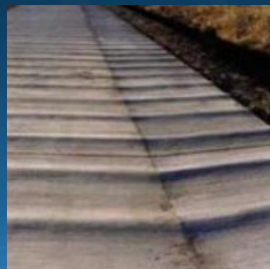
FOTON electric trucks have passed various road condition tests



Test run track



Undulating pavement



Pavement with cross ditches



Cobblestones

FOTON electric trucks have passed various environmental tests



High altitude (Qinghai-Tibet Plateau, 4700 m)



High temperature (Mountain of Flames, 50° C)



High humidity and anti-corrosion

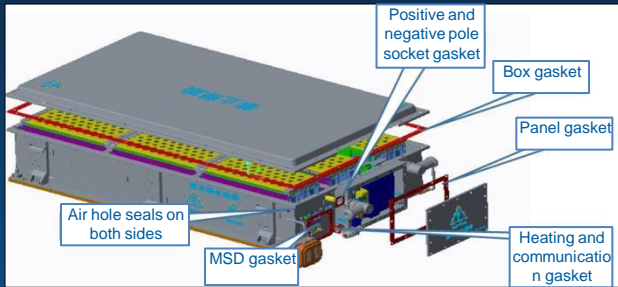


Extreme low temperature (Hailar -30° C)

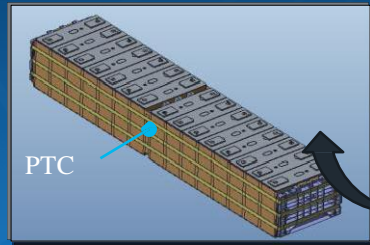
# 05 All-weather

Pack technologies including heating and heat dissipation protection are employed, and control strategies including driving heating and charge preheating are adopted, ensuring normal running in all weather between -20–40°C

- Limit structure + silicone foam
- Full welding method
- Electric device, connector + silicone pad

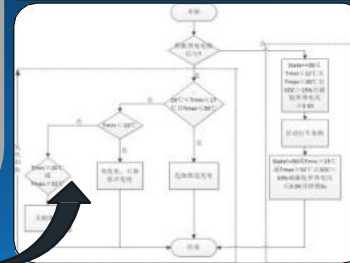
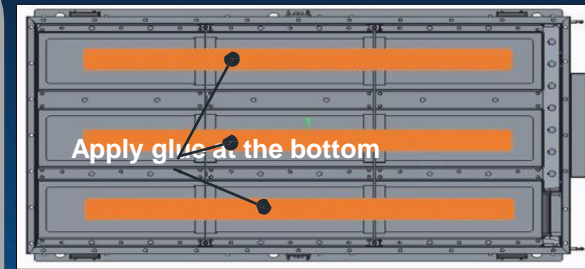


- PTC arranged on sides of module



Normal running in all weather  
between -20–40°C  
(rainy season, summer, winter)

- Heat-conducting glue for heat dissipation



- Preheating and heating while charging
- Driving heating

No water will enter the battery system when it is immersed in water for one hour. Driving heating and charging preheating strategies are adopted to ensure the normal running of the vehicle in low temperature environments.

# PART 02

## Safe

- ① **B**attery material safety
- ② **A**ctive safety
- ③ **P**assive safety



# 01 Battery safety

## ● Battery material safety

Lithium iron phosphate batteries are configured for high thermal stability, with the ignition point reaching 500–600° C; the waterproof and dustproof grade of the battery meets the IP67 standard, ensuring battery material safety; liquid cooling is adopted to ensure a stable battery material temperature; and the batteries have passed tests under extreme working conditions such as crash, squeeze, immersion, fire, plateau, salt spray, overcurrent, short circuit, temperature shock, overcharging and over-discharging.



Crash test



Squeeze test



Immersion test



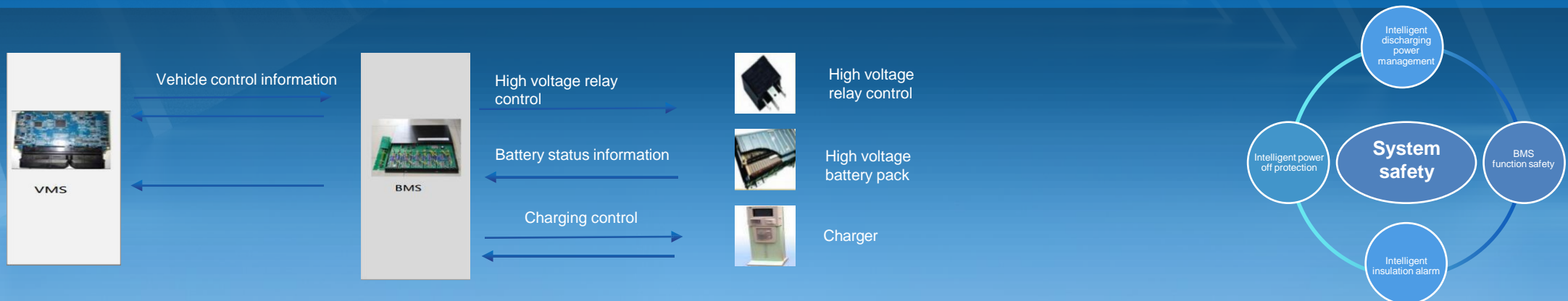
Fire test



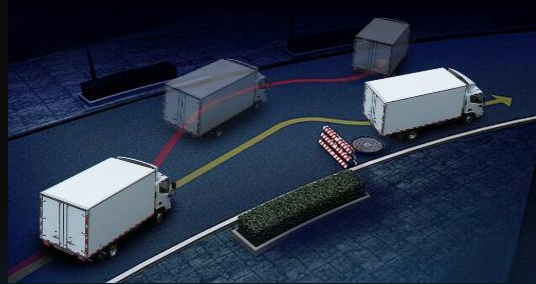
Salt spray test

## ● Battery system safety

The BMS battery management system is configured, and the unified vehicle energy management is realized through relay control, acquisition board control, battery protection, balance control, thermal management, electrical protection, charging management and other functions, ensuring the safety and reliability of vehicle system; the system adopts the anti-electric shock design, with all easily detachable barrier/housing, high-voltage connectors and high-voltage access switches configured with the high voltage interlocking function.



# 02 Active safety



### ABS

Anti-lock brake system

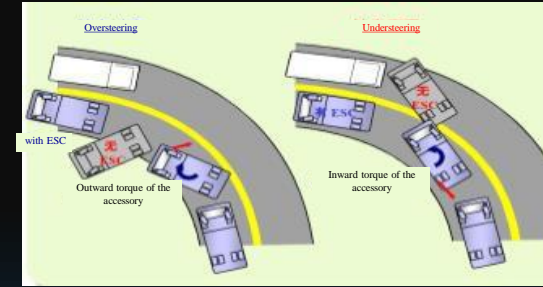
### EBD

Electronic Brake Force Distribution, ensuring driving stability and controlled steering in case of emergency brake



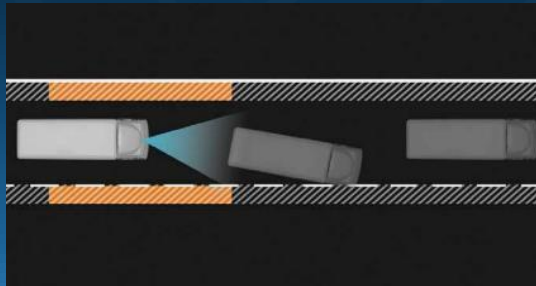
### RADAR

Reversing radar, capable of detecting barriers within 1.8 m behind the vehicle when reversing



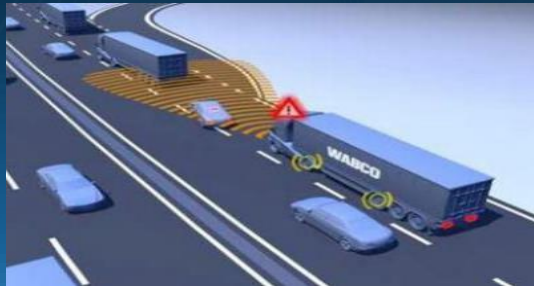
### ESP

Electronic Stability Program, improving steering stability when driving



### LDW

Lane Departure Warning, reducing the risk of traffic accidents resulting from lane departure



### AEBS

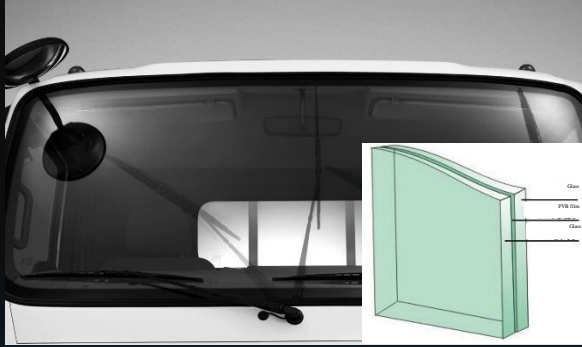
Autonomous Emergency Braking System, minimizing hazards resulting from collision utmost



### DRL

Daytime Running Light, improving vehicle identifiability and reducing the risk of accidents

# 03 Passive safety

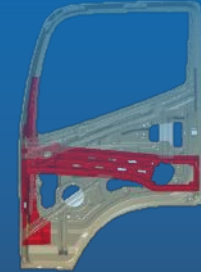


## Sandwich glass

Can effectively reduce the risk of injury by foreign matter during the driving process

## Hinge reinforcing plate and anticollision beam

Enhances occupant protection in case of collision



## Body impact safety Compliance with ECE R29



Meeting rigorous collision regulations and providing the highest occupant protection when collision is unavoidable.



# PART 03

## Intelligente

- ① Basic intelligent facilities
- ② Intelligent network facilities



# 01 Multi-intelligence — basic intelligent facilities



Reversing camera



Multifunction steering wheel



LED auto headlight



Power window and door lock

## Instrument introduction

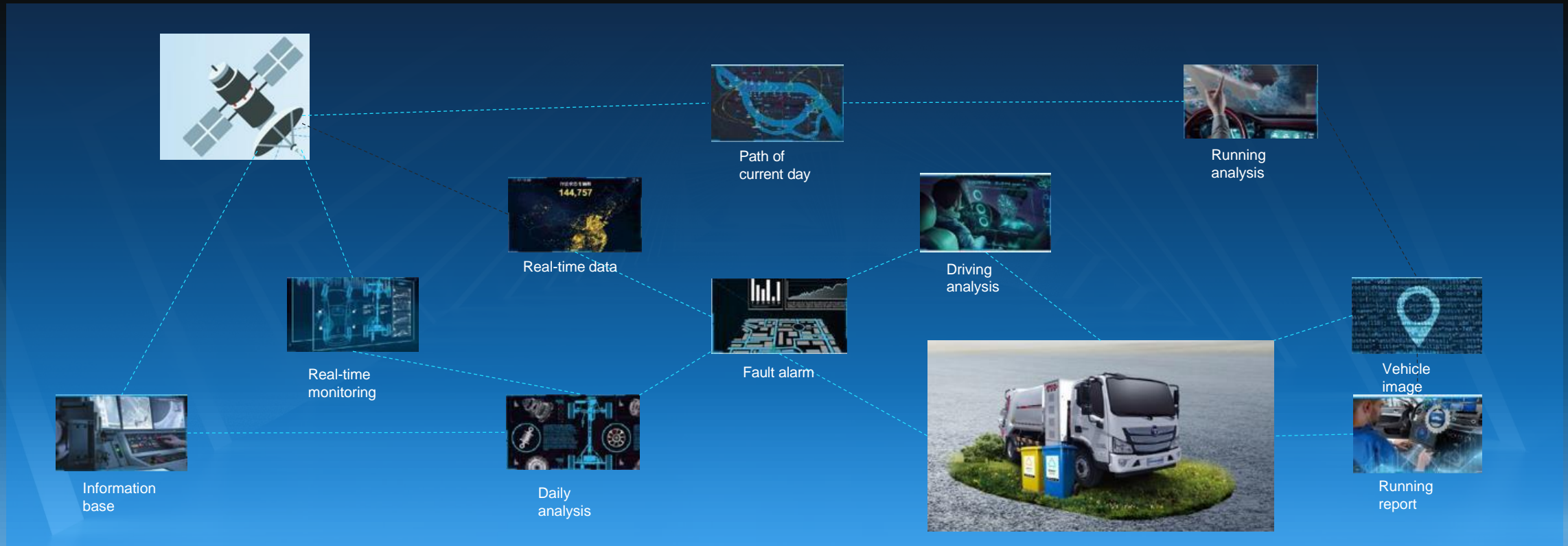
- Supports multiple languages; language switching can be realized with one button
- The LCD display realizes the intelligent display of vehicle information



# 02 Multi-intelligence — intelligent network facilities

## Intelligent network - unfold a new era of intelligence

Based on the cloud platform, big data and communication technologies, mastering the real-time information of people, vehicles and the environment, and realizing data information value conversion



# PART 04

## Comfortable

- ① **B**asic intelligent facilities
- ② **E**rgonomic design
- ③ **D**ual-channel sealing



# 01 More comfortable—comfortable driving



Shifting is not required, ensuring smoother driving



Flight control console properly arranged around the driver



Multi-functional center console to ensure convenient operation



Electric recirculating ball steering to realize user-friendly operation

# 02 More comfortable — ergonomic design



Cup holder on the table between seats



Large storage table in the middle



Adjustable steering wheel



Adjustable airbag seat (forward and backward), and adjustable backrest angle



Large storage box in the middle



Large storage space at the front passenger side

## 03 More comfortable — dual channel sealing

The body dual channel sealing design is adopted to effectively improve body noise insulation performance

Noise in the cab: 4 db lower than the national standard

Meeting European regulatory standards

NVH performance comparable to that of an ordinary car





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