豪盛 HAO SHENG 恒昇 HEN SEN

豪盛 HAO SHENG 恒昇 HEN SEN

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PRODUCT CATALOG

SINCE 2005

HANGZHOU HAOSHENG ELECTRIC VEHICLES CO., LTD.
HANGZHOU HENSEN TECHNOLOGY CO.,LTD.

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ENERGY CONSERVATION EMISSION REDUCTION CO_2 3060双碳目标 3060

MILESTONES

The road may be long and hard, but keep walking and you will arrive.

2025

·Developed 25-ton-class outdoor lithium-battery high-speed AGV (10 km/h)
·Developed heavy-load latent-lifting ultra-low tooling RGV
·Developed explosion-proof AGV for logistics transfer in explosion-proof areas
·Developed 600-ton-class ultra-heavy AGV
·Officially launched a proprietary dispatching system with independent IP, supporting multiple navigation types of AGV and RGV, scheduling of forklift AGVs, AMRs, robotic arms and other equipment, and integration with WMS, MES, ERP and other systems

2024

·Mature application of 2nd-generation 3D-SLAM laser navigation + RTK hybrid navigation
·Successfully delivered a 135-ton intelligent coating-line RGV mother-child cart for the wind power industry
·Successfully delivered 2 fully automatic AGV-40 tunnel-segment production lines
·Successfully delivered AGV-150 for dedicated use in the wind power industry
·Developed and delivered dual-vehicle linked rubber-wheel differential steering-wheel AGV
·Dual-vehicle linked heavy-tonnage AGV over 30 meters
·Developed and delivered hydraulic-motor-driven differential steering-wheel AGV

2023

·60-ton hydraulic self-balancing differential steering-wheel AGV unveiled at the Changsha Construction Machinery Exhibition
·Successfully delivered a 200-ton nacelle assembly line and an 80-ton hub assembly line for a major global wind power company
·Cooperated with Qili (Anhui), a large high-tech vehicle-modification enterprise, on an automated special-vehicle conversion production line; the first batch (20 units) of AGVs officially delivered and put into use
·ERP system went live

2022

·Developed 35-ton-class electric tractor
·Developed 50-ton-class lithium-battery electric transfer cart
·Developed 50-ton laser-navigation heavy-duty AGV
·Successfully delivered an automated final-assembly line for a large injection-molding machine group in Guangdong
·Successfully delivered an integrated logistics line for high-precision, irregular and combined fasteners in Taizhou, Jiangsu

2021

·Established subsidiary Hangzhou HENSEN Technology Co., Ltd.
·Developed differential drive and applied it to a 45-ton fully automatic AGV intelligent transfer cart; developed and applied intelligent control boards
·Developed 35-ton dual-steering-axle bridge-type AGV
·Developed 40-ton dual differential steering-wheel AGV
·Developed Ackermann-steering AGV based on color-tape navigation
·Developed steering-wheel AGV based on magnetic-tape navigation
·Developed differential steering-wheel AGV based on satellite positioning (RTK) navigation

2020

·Developed on-board AGV controller integrated on ARM chips
·Developed 70-ton APM rail-transit engineering tractor
·Developed 60-ton multi-wheel-set heavy-load AGV
·Developed 160-ton four-wheel-drive low-platform heavy-load RGV
·Developed 40-ton automatic track-change AGV

2019

·Developed vision-navigation 15-ton AGV intelligent transfer cart
·Developed 10-ton driverless transfer cart
·Developed IoV (Internet of Vehicles) intelligent on-board instrument
·Developed 180-ton rail tractor

2013

·Developed the first 30-ton Ackermann-steering electric trackless transfer cart, put into use at a well-known automobile company
·Developed a 4 m³ pure-electric fire sprinkler truck

2008

Initiated and developed a 10-ton electric transfer cart; obtained special-equipment manufacturing qualification for fixed-platform transfer carts

2005

·HAOSHENG Company founded in Qiaosi Industrial Park, Hangzhou City, Zhejiang Province



Built to Carry
Engineered to Evolve.

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Company Profile

豪盛 HAO SHENG
以优为豪 | 盛载天下



Hangzhou Haosheng Electric Vehicles Co., Ltd. was founded in 2005. It is a high-tech enterprise dedicated to the R&D, manufacturing, sales and service of all kinds of intelligent logistics, warehousing and handling equipment. The company is located in Qingshanhu Sci-Tech City in the Hangzhou West Sci-Innovation Corridor, covering a site of more than 30,000 m², with more than 25,000 m² of production plant and an annual production capacity of over 5,000 units.

Technological innovation is the soul of an enterprise and the driving force of its development. Haosheng has always upheld the development philosophy of "technology first, people oriented". While vigorously introducing and cultivating technical talent, the company carries out institute–enterprise (research institutes) and university–enterprise (colleges) cooperation, and has set up a Technology R&D Center and an Intelligence Research Institute for independent R&D and innovation, forming a virtuous cycle of industry–academia–research–marketing. It holds more than one hundred intellectual property rights, including national invention patents, utility models and software copyrights.

The products have grown into six major series with more than 60 specifications of intelligent logistics, warehousing and handling equipment: heavy-load AGVs, heavy-load RGVs, electric transfer carts, electric tractors, rail flat cars (battery rail cars, low-voltage powered rail cars, cable-reel/towed-cable rail cars) and heavy flatbed trailers. The company also provides customers with composite, safer, more mature and more efficient intelligent logistics warehousing equipment integration and system solutions. The products are widely used in industries such as machinery and electronics, photovoltaics, energy storage, wind power, construction (PC components, tunnel segments, box culverts), steel structures, ports and docks, metallurgy and smelting, coal, shipbuilding, heavy industry and steel.

Upholding the mission and pursuit of "Pride in Excellence, Carrying the World", the company advances with the times with determination. It has passed ISO9001 quality management system, ISO14001 environmental management system, ISO45001 occupational health and safety management system, TSG and CE certifications, and has successively been recognized as a Hangzhou High-Tech Enterprise, Zhejiang Science & Technology Enterprise, Zhejiang AAA-Level Contract-Abiding and Trustworthy Enterprise, Zhejiang "Specialized, Refined, Distinctive and Innovative" (SRDI) Enterprise, and National High-Tech Enterprise, among other honors.

Looking ahead, Haosheng Electric follows the continuous progress and practice of Industry 4.0, striving for excellence with ingenious manufacturing. Relying on scientific and technological R&D, guaranteed by products made with dedication, and supported by attentive service, the company continuously enhances its core competitiveness, achieves new leaps, and strives to build a leading Chinese brand of intelligent, environmentally friendly logistics equipment.

豪盛
HAO SHENG

2005
Founded in

30,000+ m²
Site area

5,000+ units
Annual production capacity

Certificates & Patents

豪盛 HAO SHENG
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Since its establishment, Haosheng has attached great importance to improving its own capabilities. In recent years the company has made breakthrough progress in market access and qualification certification.

Qualification and honor certificates obtained include:

1. National High-Tech Enterprise; Zhejiang Provincial High-Tech R&D Center; Hangzhou High-Tech Enterprise; Zhejiang "Specialized, Refined, Distinctive and Innovative" (SRDI) honor certificate.

2. Zhejiang AAA-Level "Contract-Abiding and Trustworthy" Publicly Announced Enterprise certificate; drafting and co-compiling unit of mobile-robot industry standards; graduate practice base of Huazhong Agricultural University; employment practice and training base of the School of Information Engineering, Hangzhou Dianzi University.

3. TSG Special Equipment Manufacturing License; ISO Quality Management System certification; ISO Environmental Management System; ISO Occupational Health and Safety Management System; EU CE certification.



High-Tech Enterprise Certificateer Certificate



High-Tech Research & Development Center Certificate



Huazhong Agricultural University Graduate Joint Training & Practice Base



Zhejiang AAA-Level "Contract-Abiding and Trustworthy" Publicly Announced Enterprise Certificate



Zhejiang "Specialized, Refined, Distinctive and Innovative" SME Honor Certificate



Mobile Robot Industry Alliance — industry-standard drafting and co-compiling member enterprise



ISO Quality Management System Certificate



ISO Environmental Managemen System Certificate



ISO Occupational Health & Safety Management System Certificate



Trademark Registration Certificate ("Haosheng")



QSD Electric Tractor — CE Certification



BD Electric Transfer Cart — CE Certification



AGV — CE Certification



PT Flatbed Trailer — CE Certification



RGV — CE Certification

Patents

Holder of more than one hundred invention, utility-model and design patents



Note: Due to layout constraints, only part of the patents are displayed.



Integrated Circuit Layout Design Certificate



Computer Software Copyright Registration Certificate No. 7997140



Computer Software Copyright Registration Certificate No. 799723



Computer Software Copyright Registration Certificate No. 9560968

PARTNERS

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BAOSTEEL · 上海电气 · 徐工集团 XCMG · 上汽集团 SAIC MOTOR · HANGCHA · JinKO Solar
中国交建 · 中国铁建 CRCC · 浙江大学 ZHEJIANG UNIVERSITY · 魏桥创业 WEIQIAO PIONEERING · 三一集团 SANY

Ranking in no particular order | Partial display of client logos

豪盛 HAO SHENG　恒昇 HEN SEN

Move the Heavy
Master the Smart.



AGV SERIES

Capacity classes: 2–5 t | 10–40 t | 50–200 t | 300–800 t

Intelligent Heavy-Load AGV Trackless Flat Carts

AUTOMATED GUIDED VEHICLES

AGV

2–5 t Dual Steering-Wheel Drive



- Driverless, equipped with an automatic guidance system; travels automatically along preset routes and transports materials automatically from the starting point to the destination.
- Highly automated and intelligent; process and transport routes can be flexibly adjusted according to storage-location requirements and changes in the production process.
- Automatic interfacing with other logistics equipment enables full-process automation of material loading, unloading and handling.
- The AGV also features clean production: powered by its own traction battery, it runs without noise or emissions and can be used in many places requiring a clean working environment.
- Navigation modes: 3D laser navigation, magnetic-tape navigation, hybrid navigation.
- The AGV can perform lateral movement, longitudinal movement, diagonal travel and on-the-spot turning, operating with extremely high positioning accuracy in complex and narrow working conditions.
- High compatibility and adaptability: the AGV can be perfectly integrated into workshop intelligent material management systems and production management systems, becoming part of the process flow and serving as a link connecting numerous processes.
- High safety and reliability: the AGV's travel path and speed are controllable, with real-time obstacle avoidance during operation and precise positioning stops; meanwhile the AGV dispatching management system can monitor the AGVs throughout the whole process, greatly improving reliability.
- High efficiency: the AGV supports automatic charging, achieving 24-hour continuous operation, which helps improve work efficiency and reduce labor costs.
- Good flexibility and system expandability: the AGV dispatching system can change AGV travel routes to the greatest extent; after tasks are assigned, traffic control can be applied to AGV running routes, providing good flexibility. The dispatching system supports adding more AGVs to meet higher production demands, hence high scalability.



Type \ Model		AGV-2	AGV-5
Size of loading table(mm)		2200×1200	2500×1500
Rated loadin capacity(T)		2000	5000
Max speed (m/min)		40	40
Travel director		Longitudinal / lateral / omnidirectional / on-the-spot turning	
Driving method		Dual steering-wheel drive	
Drive motor power(kW*Q'ty)		0.75×2	3×2
Power source		LFP (lithium iron phosphate) battery	
Tire		Polyurethane wheels	
Dia of wheel	Driving wheel	200	260
	Universal wheel	200	250
Voltage(v)		25.6	51.2
Battery capacity(Ah)		150	150
Charging Method	Manual charging	●	●
	Auto Charging	○	○
Charging time (≤h)		3	3
Navigation Method	Megnetic tape navigation	○	○
	Optical Navigation	○	○
	Laser SLAM Navigation	○	○
	Ourdoor RTK	○	○
Navigation Accuracy(mm)	Magnetic/optical/ Laser SLAM	±10	±10
Positioning Accuracy	RFID Positioning	±30	±30
	Magnetic tape QR code/Laser position	±10	±10
	Ourdoor RTK	\	\
Wireless network	2.4G/5G	○	○
Bumper	Front&Rear bumper	●	●
	Two sides bumper	○	○
Contactless safety device	Front&rear laser obstacle senser	○	○
Safety sensing range	4m	\	\
	10m	○	○
Emergency stop buttons		●	●
Latent lifting function		○	○
Adaptive Driving System		\	\
Dispatching system		○	○

Remarks: 1. Body dimensions can be customized within a certain range; height is confirmed after design according to actual requirements.

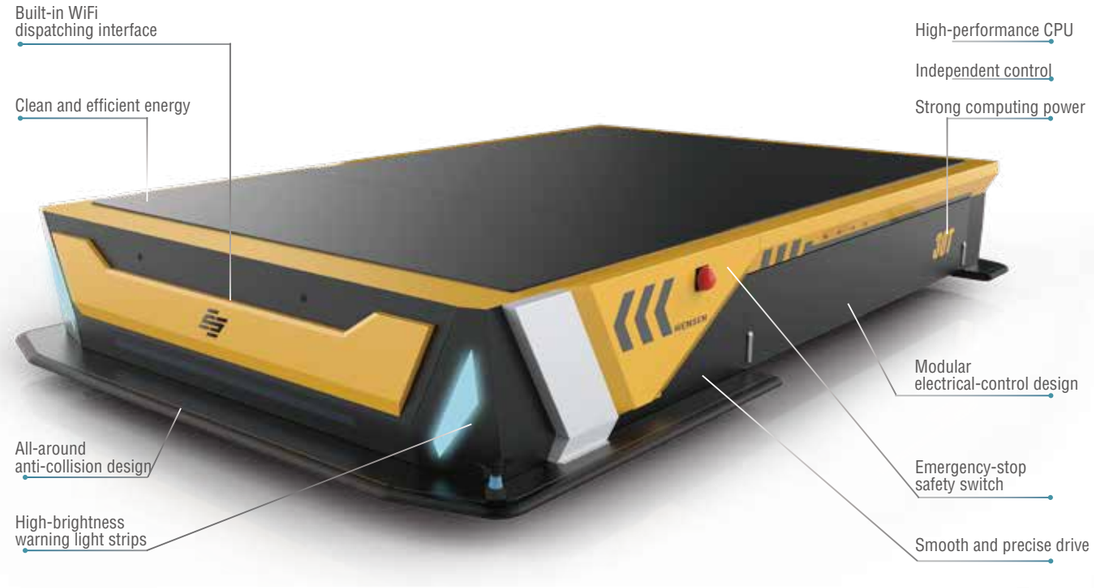
2. Battery capacity may be fine-tuned according to module upgrades; for special non-standard endurance requirements, mileage is customized.

3. ● Standard ○ Optional \non-optional

Products and specifications may change due to improvement without further notice; actual product prevails.

AGV

10–40 t Dual Differential Steering-Wheel Drive



- Driverless, equipped with an automatic guidance system; travels automatically along preset routes and transports materials automatically from the starting point to the destination.
- Highly automated and intelligent; process and transport routes can be flexibly adjusted according to storage-location requirements and changes in the production process.
- Automatic interfacing with other logistics equipment enables full-process automation of material loading, unloading and handling.
- The AGV also features clean production: powered by its own traction battery, it runs without noise or emissions and can be used in many places requiring a clean working environment.
- Navigation modes: 3D laser navigation, magnetic-tape navigation, hybrid navigation.
- The AGV can perform lateral movement, longitudinal movement, diagonal travel and on-the-spot turning, operating with extremely high positioning accuracy in complex and narrow working conditions.
- High compatibility and adaptability: the AGV can be perfectly integrated into workshop intelligent material management systems and production management systems, becoming part of the process flow and serving as a link connecting numerous processes.
- High safety and reliability: the AGV's travel path and speed are controllable, with real-time obstacle avoidance during operation and precise positioning stops; meanwhile the AGV dispatching management system can monitor the AGVs throughout the whole process, greatly improving reliability.
- High efficiency: the AGV supports automatic charging, achieving 24-hour continuous operation, which helps improve work efficiency and reduce labor costs.
- Good flexibility and system expandability: the AGV dispatching system can change AGV travel routes to the greatest extent; after tasks are assigned, traffic control can be applied to AGV running routes, providing good flexibility. The dispatching system supports adding more AGVs to meet higher production demands, hence high scalability.



Type \ Model		AGV-10	AGV-15	AGV-20	AGV-25	AGV-30	AGV-40
Size of loading table(mm)		3500×1800	3500×2000	3800×2000	3800×2000	3000×2000	4000×2500
Rated loadin capacity(T)		10000	15000	20000	25000	30000	40000
Max speed (m/min)		30	30	30	30	30	30
Travel director		Longitudinal / lateral / omnidirectional / on-the-spot turning					
Driving method		Dual steering-wheel drive					
Drive motor power(kW*Q'ty)		1.5×4	3×4	3×4	3×4	3×8	5×4
Power source		LFP (lithium iron phosphate) battery					
Tire		Polyurethane wheels					
Dia of wheel	Driving wheel	260	260	300	300	300	440
	Universal wheel	250	260	300	300	\	440
Voltage(v)		51.2	51.2	51.2	51.2	51.2	76.8
Battery capacity(Ah)		150	230	230	280	300	280
Charging Method	Manual charging	●	●	●	●	●	●
	Auto Charging	○	○	○	○	○	○
Charging time (≤h)		3	2	2	2	2	2
Navigation Method	Megnetic tape navigation	○	○	○	○	○	○
	Optical Navigation	○	○	○	○	○	○
	Laser SLAM Navigation	○	○	○	○	○	○
	Ourdoor RTK	○	○	○	○	○	○
Navigation Accuracy(mm)	Magnetic/optical/ Laser SLAM	±10	±10	±10	±10	±10	±10
Positioning Accuracy	RFID Positioning	±30	±30	±30	±30	±30	±30
	Magnetic tape QR code/Laser position	±10	±10	±10	±10	±10	±10
	Ourdoor RTK	±25	±25	±25	±25	±25	±25
Wireless network	2.4G/5G	○	○	○	○	○	○
Bumper	Front&Rear bumper	●	●	●	●	●	●
	Two sides bumper	○	○	○	○	○	○
Contactless safety device	Front&rear laser obstacle senser	○	○	○	○	○	○
Safety sensing range	4m	\	\	\	\	\	\
	10m	○	○	○	○	○	○
Emergency stop buttons		●	●	●	●	●	●
Latent lifting function		○	○	○	○	○	○
Adaptive Driving System		\	\	\	\	○	○
Dispatching system		○	○	○	○	○	○

Remarks: 1. Body dimensions can be customized within a certain range; height is confirmed after design according to actual requirements.

2. Battery capacity may be fine-tuned according to module upgrades; for special non-standard endurance requirements, mileage is customized.

3. ● Standard ○ Optional \non-optional

Products and specifications may change due to improvement without further notice; actual product prevails.

AGV

50–200 t Dual Differential Steering-Wheel Drive



- Driverless, equipped with an automatic guidance system; travels automatically along preset routes and transports materials automatically from the starting point to the destination.
- Highly automated and intelligent; process and transport routes can be flexibly adjusted according to storage-location requirements and changes in the production process.
- Automatic interfacing with other logistics equipment enables full-process automation of material loading, unloading and handling.
- The AGV also features clean production: powered by its own traction battery, it runs without noise or emissions and can be used in many places requiring a clean working environment.
- Navigation modes: 3D laser navigation, magnetic-tape navigation, hybrid navigation.
- The AGV can perform lateral movement, longitudinal movement, diagonal travel and on-the-spot turning, operating with extremely high positioning accuracy in complex and narrow working conditions.
- High compatibility and adaptability: the AGV can be perfectly integrated into workshop intelligent material management systems and production management systems, becoming part of the process flow and serving as a link connecting numerous processes.
- High safety and reliability: the AGV's travel path and speed are controllable, with real-time obstacle avoidance during operation and precise positioning stops; meanwhile the AGV dispatching management system can monitor the AGVs throughout the whole process, greatly improving reliability.
- High efficiency: the AGV supports automatic charging, achieving 24-hour continuous operation, which helps improve work efficiency and reduce labor costs.
- Good flexibility and system expandability: the AGV dispatching system can change AGV travel routes to the greatest extent; after tasks are assigned, traffic control can be applied to AGV running routes, providing good flexibility. The dispatching system supports adding more AGVs to meet higher production demands, hence high scalability.



Type \ Model		AGV-50	AGV-60	AGV-80	AGV-100	AGV-150	AGV-200
Size of loading table(mm)		5500×2500	6000×2500	6500×3000	7000×3100	7000×3100	8000×3100
Rated loadin capacity(T)		50000	60000	80000	100000	150000	200000
Max speed (m/min)		30	30	30	30	25	20
Travel director		Longitudinal / lateral / omnidirectional / on-the-spot turning					
Driving method		Quad differential steering-wheel drive	Quad differential steering-wheel drive	Quad differential steering-wheel drive	Quad differential steering-wheel drive	Quad differential steering-wheel drive	Six differential steering-wheel drive
Drive motor power(kW*Q'ty)		4×8	4×8	4×8	5×8	4×12	5×12
Power source		LFP (lithium iron phosphate) battery					
Tire		Polyurethane wheels					
Dia of wheel	Driving wheel	440	440	500	500	500	500
	Universal wheel	\	\	\	\	\	\
Voltage(v)		76.8	76.8	83.2	83.2	83.2	83.2
Battery capacity(Ah)		300	350	450	560	690	900
Charging Method	Manual charging	●	●	●	●	●	●
	Auto Charging	○	○	○	○	○	○
Charging time (≤h)		2	2.5	3	3	4	4
Navigation Method	Megnetic tape navigation	○	○	○	○	○	○
	Optical Navigation	○	○	○	○	○	○
	Laser SLAM Navigation	○	○	○	○	○	○
	Ourdoor RTK	○	○	○	○	○	○
Navigation Accuracy(mm)	Magnetic/optical/ Laser SLAM	±10	±10	±10	±10	±10	±10
Positioning Accuracy	RFID Positioning	±30	±30	±30	±30	±30	±30
	Magnetic tape QR code/Laser position	±10	±10	±10	±10	±10	±10
	Ourdoor RTK	±25	±25	±25	±25	±25	±25
Wireless network	2.4G/5G	○	○	○	○	○	○
Bumper	Front&Rear bumper	●	●	●	●	●	●
	Two sides bumper	○	○	○	○	○	○
Contactless safety device	Front&rear laser obstacle senser	○	○	○	○	○	○
Safety sensing range	4m	\	\	\	\	\	\
	10m	○	○	○	○	○	○
Emergency stop buttons		●	●	●	●	●	●
Latent lifting function		○	○	○	○	○	○
Adaptive Driving System		○	○	○	○	○	●
Dispatching system		○	○	○	○	○	○

Remarks: 1. Body dimensions can be customized within a certain range; height is confirmed after design according to actual requirements.

2. Battery capacity may be fine-tuned according to module upgrades; for special non-standard endurance requirements, mileage is customized.

3. ● Standard ○ Optional \non-optional

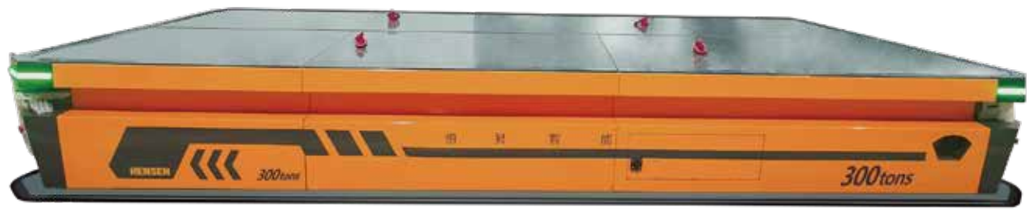
Products and specifications may change due to improvement without further notice; actual product prevails.

AGV

300–800 t Dual Differential Steering-Wheel Drive



- Driverless, equipped with an automatic guidance system; travels automatically along preset routes and transports materials automatically from the starting point to the destination.
- Highly automated and intelligent; process and transport routes can be flexibly adjusted according to storage-location requirements and changes in the production process.
- Automatic interfacing with other logistics equipment enables full-process automation of material loading, unloading and handling.
- The AGV also features clean production: powered by its own traction battery, it runs without noise or emissions and can be used in many places requiring a clean working environment.
- Navigation modes: 3D laser navigation, magnetic-tape navigation, hybrid navigation.
- The AGV can perform lateral movement, longitudinal movement, diagonal travel and on-the-spot turning, operating with extremely high positioning accuracy in complex and narrow working conditions.
- High compatibility and adaptability: the AGV can be perfectly integrated into workshop intelligent material management systems and production management systems, becoming part of the process flow and serving as a link connecting numerous processes.
- High safety and reliability: the AGV's travel path and speed are controllable, with real-time obstacle avoidance during operation and precise positioning stops; meanwhile the AGV dispatching management system can monitor the AGVs throughout the whole process, greatly improving reliability.
- High efficiency: the AGV supports automatic charging, achieving 24-hour continuous operation, which helps improve work efficiency and reduce labor costs.
- Good flexibility and system expandability: the AGV dispatching system can change AGV travel routes to the greatest extent; after tasks are assigned, traffic control can be applied to AGV running routes, providing good flexibility. The dispatching system supports adding more AGVs to meet higher production demands, hence high scalability.



AGV Technical Parameter

Type \ Model		AGV-300	AGV-400	AGV-500	AGV-600	AGV-800
Size of loading table(mm)		13000×3200	16000×3200	18000×3200	13000×6400	16000×6400
Rated loadin capacity(T)		300000	400000	500000	600000	800000
Max speed (m/min)		20	20	20	20	20
Travel director		Longitudinal / lateral / omnidirectional / on-the-spot turning				
Driving method		8 differential steering-wheel drive	12 differential steering-wheel drive	14 differential steering-wheel drive	16 differential steering-wheel drive	20 differential steering-wheel drive
Drive motor power(kW*Q'ty)		5×16	4×20	4×28	4×32	4×40
Power source		LFP (lithium iron phosphate) battery				
Tire		Polyurethane wheels				
Dia of wheel	Driving wheel	500	500	500	500	500
	Universal wheel	\	\	\	\	\
Voltage(v)		144	310	310	540	540
Battery capacity(Ah)		900	690	900	840	900
Charging Method	Manual charging	●	●	●	●	●
	Auto Charging	○	○	○	○	○
Charging time (≤h)		4	4	4.5	4	4.5
Navigation Method	Megnetic tape navigation	○	○	○	○	○
	Optical Navigation	○	○	○	○	○
	Laser SLAM Navigation	○	○	○	○	○
	Ourdoor RTK	○	○	○	○	○
Navigation Accuracy(mm)	Magnetic/optical/ Laser SLAM	±10	±10	±10	±10	±10
Positioning Accuracy	RFID Positioning	±30	±30	±30	±30	±30
	Magnetic tape QR code/Laser position	±15	±15	±15	±15	±15
	Ourdoor RTK	±25	±25	±25	±25	±25
Wireless network	2.4G/5G	○	○	○	○	○
Bumper	Front&Rear bumper	●	●	●	●	●
	Two sides bumper	○	○	○	○	○
Contactless safety device	Front&rear laser obstacle senser	○	○	○	○	○
Safety sensing range	4m	\	\	\	\	○
	10m	○	○	○	○	○
Emergency stop buttons		●	●	●	●	●
Latent lifting function		○	○	○	○	○
Adaptive Driving System		●	●	●	●	●
Dispatching system		○	○	○	○	○

Remarks: 1. Body dimensions can be customized within a certain range; height is confirmed after design according to actual requirements.

2. Battery capacity may be fine-tuned according to module upgrades; for special non-standard endurance requirements, mileage is customized.

3. ● Standard ○ Optional \non-optional

Products and specifications may change due to improvement without further notice; actual product prevails.

AGV System Features

AGV SYSTEM FEATURES

- **Strong development capability**
  - a. Non-standard customized development based on multiple controllers
  - b. Such as embedded ARM chips, PLC (Siemens, Phoenix and other well-known brands), industrial PCs, etc.
  - c. Various drive-steering control methods, e.g. self-designed and manufactured differential steering wheels
  - d. Adapts to various communication protocols and connects to plant-area dispatching systems for unified management

- **Efficient system management capability**
  - a. Multi-level task management system
  - b. Multi-mode vehicle movement dispatching system
  - c. Traffic-control dispatching system with real-time route planning

- **High flexibility**
  - a. Flexible path and station planning
  - b. Multiple drive-steering chassis structures to choose from
  - c. Customization of pallets, material racks, fixtures and other auxiliary equipment closely related to the AGV
  - d. Multiple automatic guidance modes supported: magnetic, laser, vision, RTK

- **Simple and easy to use**
  - a. Multiple operating modes, such as manual mode and automatic mode
  - b. Graphical human-machine interface; can be equipped with 7–15 inch industrial configuration displays
  - c. Intelligent voice and light alarm system
  - d. Supports AGV automatic charging — no worries about vehicle endurance



Portable remote controller



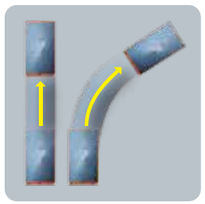
Industrial control computer



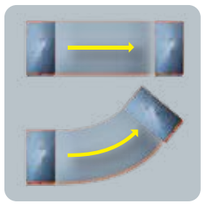
Self-developed robot controller

MOTION MODES

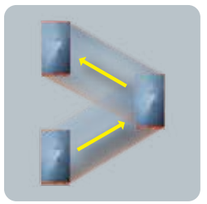
Longitudinal mode



Lateral mode

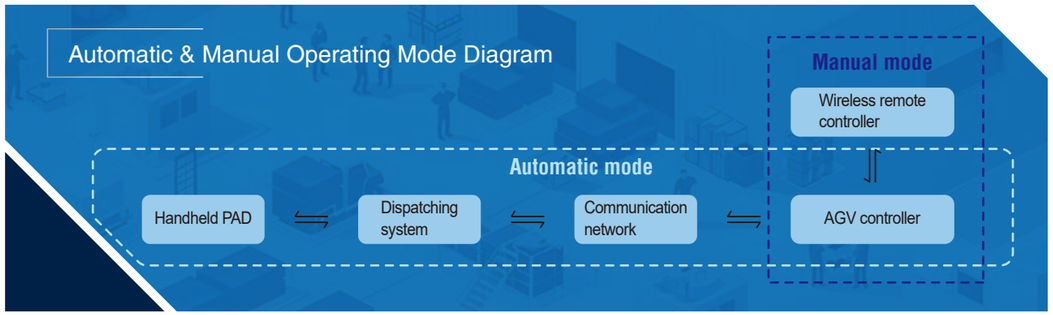


Omnidirectional mode



On-the-spot turning





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FEATURED MODEL HIGH-SPEED AGV

HOT 爆款

running speed up to 166 m/min

Featured Models

- Hybrid navigation modes
- Radar obstacle avoidance + safety edges
- 360° real-time cameras
- **Multiple safeguards — safer!**

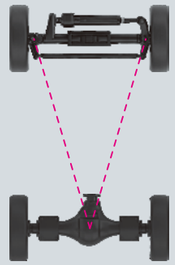
Speed is no longer a constraint: introducing the high-speed version of the heavy-load AGV.
Load capacity 2–60 t, running speed up to 166 m/min —

6 times the speed of an ordinary AGV!

Note: In-plant transfer vehicle; driving on public roads is prohibited.

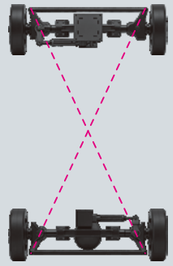
DRIVING METHODS

Electric-Cylinder Steering



Single-axle steering AGV

The Ackermann steering structure has a large load capacity, high travel speed, excellent climbing performance and strong passability on complex roads. It adopts a modular design with the front steering axle separated from the rear drive axle for easy maintenance and servicing; the left and right electric-control boxes are quick-release, and the battery can be quickly removed; low cost and high reliability.



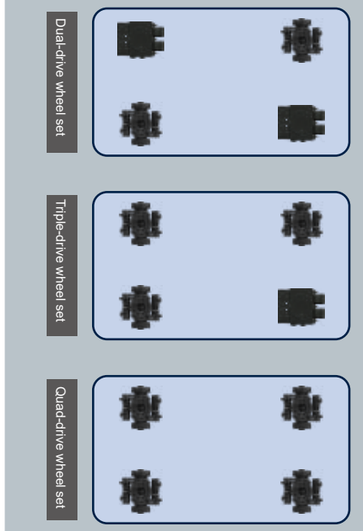
Dual-axle steering AGV

Optimized on the basis of the Ackermann model — the rear axle is not merely a drive axle but becomes a steering drive axle. With both axles steering, the turning radius is greatly reduced and adaptability to different working conditions is improved; climbing: excellent performance and strong passability on complex road conditions.

Single Steering-Wheel Steering



The steering wheel is highly integrated and highly adaptable; used with a servo system, it is more precise and responds faster. Through different wheel-train angle states and wheel speeds, the vehicle can achieve omnidirectional movement — longitudinal, lateral, diagonal and on-the-spot turning in different directions within a plane.



Differential Steering Wheels



Compared with ordinary steering wheels, differential steering wheels have stronger load-bearing capacity and more even force distribution; at the same time they enable more operating modes and can meet more complex working conditions.

Rubber differential steering wheel

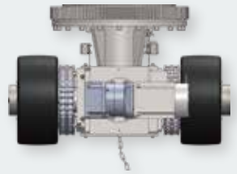


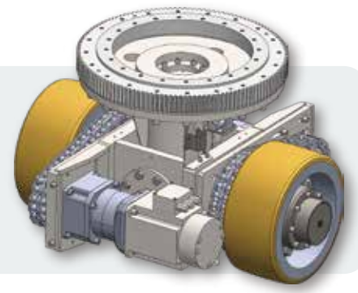
Polyurethane differential steering wheel



Hydraulic Self-Adaptive Differential Steering Wheel

On the basis of the differential steering wheel, hydraulic suspension is added. When encountering ditches or bumps, the hydraulic suspension responds quickly to prevent the wheel set from hanging in the air; self-adaptive adjustment gives the AGV stronger ground adaptability and grip.





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FEATURED MODEL ULTRA-LOW BODY LATENT LIFT HEAVY-LOAD AGV

Body Height: 24.5 cm
Platform Size: 3850*1950 mm

Lifting Height: 70 mm
Design Load: 20000 kg

Featured Models



3D SLAM navigation
Longitudinal mode · lateral mode · omnidirectional mode · on-the-spot turning
2D laser obstacle avoidance + obstacle-avoidance radar + mechanical safety edges
Implemented with a self-developed industrial controller

Precise · Agile · Safe
that's truly hardcore!

NAVIGATION MODES

Vision navigation (QR code, color tape)
a. Precise positioning, compact and agile, immune to sound/light interference
b. Simple to lay out; easy to change routes later

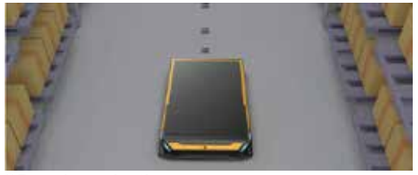
Magnetic-tape navigation
a. Mature magnetic-sensing technology with high positioning accuracy, up to millimeter level.
b. Magnetic navigation is not easily affected by light changes; during operation, the magnetic sensing system is highly reliable.
c. Once surface-mounted magnetic tape is laid, it is easy to add or change routes.
d. After buried magnetic tape is installed, it is maintenance-free with a long service life — no worries about vehicles rolling over it.

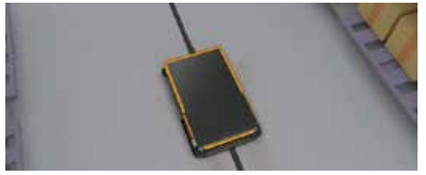
3D laser navigation
a. Uses two 3D lidars to build an indoor map with high construction accuracy
b. Automatic path planning for precise positioning and navigation
c. No fixed infrastructure needed — offers customers flexible and versatile transport solutions
d. While building the map and navigating, the two lidars also serve as obstacle-avoidance radars

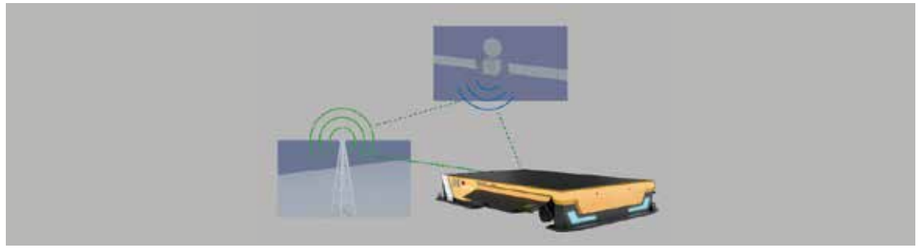
RTK navigation
a. High positioning accuracy, safe and reliable data, no error accumulation.
b. RTK is less affected and restricted by lighting conditions, weather and other factors — suitable for large outdoor sites
c. No site construction required; changing running routes and stations later is more convenient
d. Running routes can be changed freely, providing customers with flexible and versatile transport solutions


Laser reflector-panel navigation


Laser SLAM navigation


QR-code navigation


Magnetic-tape navigation


RTK navigation

POSITIONING METHODS

RFID radio-frequency communication

•Usage scenario: usable both indoors and outdoors
•Features:
1. Centimeter-level positioning accuracy
2. RFID tags are buried underground — long service life, maintenance-free
3. Strong anti-interference capability, usable in all weather



QR-code positioning

•Usage scenario: indoor use
•Features:
1. High positioning accuracy, up to millimeter level
2. High cost-performance
3. Flexible routes, easy to adjust



Magnetic-tape positioning

•Usage scenario: usable both indoors and outdoors
•Features:
1. Precise positioning, up to millimeter level
2. High sensitivity; mature and reliable technology
3. Wide sensing range, suitable for multiple paths



Laser SLAM positioning

•Usage scenario: usable both indoors and outdoors
•Features:
1. High positioning accuracy, up to millimeter level
2. Positioning without external construction work
3. Flexible routes, easy to adjust



SAFETY PROTECTION



Emergency-stop switch
contact-type safety protection

Safety edges
contact-type safety protection

Laser radar
contactless safety protection

CUSTOMIZED PLATFORMS & TOOLING

Piggyback heavy-load AGV





Basic AGV style — simple appearance and convenient operation; large design space for dimensions and load.

Box-type AGV



By mounting a box body on the AGV platform, goods are protected from damage even during outdoor transfer on rainy days, while the tooling parts inside the box are also protected.

Roller-type AGV



With rollers and chain-drive components mounted on the AGV platform, goods can be flexibly translated on the platform, meeting the customization needs of automated production lines.

For specific customization, please contact our sales staff.
For more customized solutions, Contact us now.

Email : info@hensenagv.com

Latent lift heavy-load AGV



The latent lift AGV lifts directly via hydraulic cylinders, shortening the loading process and adapting to the special needs of automated production lines. Lifting types: full-platform lifting and partial lifting.

Scissor-lift AGV



Combines a scissor mechanism with hydraulic cylinders to achieve precise vertical lifting. Lifting travel covers 0–5 m, meeting high-travel lifting needs in complex scenarios such as high-rack access and special production-line docking.

Other special tooling



▲ Hydraulic self-lifting AGV





▲ Various types of V-shaped platforms

tooling platforms can be customized according to the cargo parameters you provide.

APPLICATIONS

CASE SHOWCASE



Customized V-shaped platform AGV



军用机场测试重载AGV



50 t laser + RTK outdoor AGV



135 t heavy AGV for wind-power casting industry



60 t heavy-load latent piggyback lifting AGV



20 t heavy-load laser-navigation AGV for the PC building-components industry



35 t heavy-load extended AGV



AGV applied on automobile (construction machinery) production lines



40 t magnetic-guided heavy-load lifting AGV



20 t magnetic-guided heavy-load motor installation line AGV



15 t magnetic-tape navigation AGV with lifting function



Customized high-precision special heavy-load AGV



Ultra-heavy 300 t AGV for the wind power industry



100 t lifting AGV for the Yalong River hydropower project



60 t heavy-load AGV for the energy-storage industry



15 t heavy-load laser + RTK navigation AGV for the copper-smelting industry



Customized outdoor box-type AGV



50 t aluminum-ingot transfer laser-navigation AGV



Customized high-accuracy precision lifting AGV

豪盛 HAO SHENG　恒昇 HEN SEN

Connecting the World, Intelligent Manufacturing for the Future

RGV SERIES

Capacity classes: 1–15 t | 20–40 t | 50–80 t | 100–500 t

Intelligent Heavy-Load RGV Rail Flat Carts

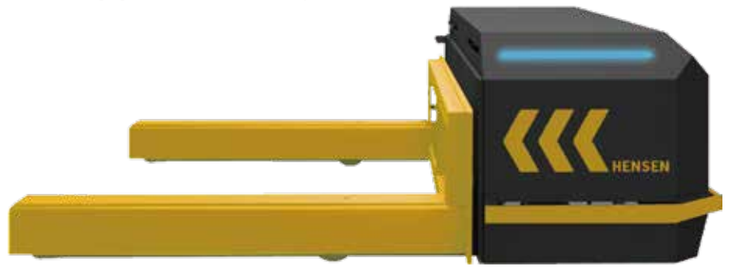
RAIL GUIDED VEHICLES

RGV 5-15t



Roller-type RGV

- Connects to the factory dispatching system to realize fully unmanned ("lighthouse factory") production
- The roller loading platform docks with robots for automatic loading and unloading
- Equipped with a 7-inch industrial display for operation/fault information display and parameter setting
- Supports automatic station function, improving production efficiency and reducing labor costs
- Equipped with laser obstacle-avoidance radar to ensure safety during transfer
- Proximity-switch positioning with high positioning accuracy
- Supports automatic charging for 24-hour continuous operation



Docking track-change RGV

- Suitable for the transfer of large integral workpieces on production lines in industrial (heavy-duty) workshops
- Hydraulic lifting fork arms automatically lift workpieces for transfer
- Equipped with a 7-inch industrial display for operation/fault information display and parameter setting
- Supports automatic station function, improving production efficiency and reducing labor costs
- Equipped with laser obstacle-avoidance radar to ensure safety during transfer
- RFID recognition with high positioning accuracy and flexible station layout
- Supports automatic charging for 24-hour continuous operation
- Supports MES remote system docking; performs automatic station transfer according to dispatching-system commands; exchanges workshop material information in real time; and cooperates with robotic arms, robots and other equipment on the production line to realize fully unmanned production.

Type \ Model		RGV-5	RGV-10	RGV-15
Size of loading table（mm）		3000×1800	3200×2000	3500×2000
Rated loadin capacity（kg）		5000	10000	15000
Max speed（m/min）		40	40	40
Drive motor power（kw*Q ty）		1.5×1	2.2×1	2.2×1
Power source		LFP battery		
Dia. of wheel		ϕ250×4	ϕ350×4	ϕ350×4
Voltage(v)		25.6	51.2	51.2
Battery capacity（Ah）		150	150	150
Charging Method	Manual charging	●	●	●
	Auto Charging	○	○	○
Charging time（≤h）		3	3	3
Positioning Accuracy（mm）	RFID Positioning	±30	±30	±30
	approach switch	±10	±10	±10
	Magnetic tape QR code/Laser position	±5	±5	±5
Wireless network	2.4G/5G	○	○	○
Bumper	Front/Rear /Sides/bumper	○	○	○
Contactless Safety device	infrared sensor	○	○	○
	Front&rear laser obstacle senser	○	○	○
Safety sensing range	1m infrared sensor	○	○	○
	4m infrared sensor	\	\	\
	10m infrared sensor	○	○	○
Emergency stop buttons		●	●	●
Power optional	LEP battery	●	●	●
	Low voltage track	○	○	○
	Slide wire	○	○	○
	Dragged cable	○	○	○
Function Optional	Latent lifting	○	○	○
	Roller table	○	○	○
	Track exchange	○	○	○
	Combined shuttle	○	○	○
	Transmission chain table	○	○	○
	Turnable table	○	○	○
	Forklift RGV	○	○	○

Remarks: 1. Body dimensions can be customized within a certain range; height is confirmed after design according to actual requirements.

2. Battery capacity may be fine-tuned according to module upgrades; for special non-standard endurance requirements, mileage is customized.

3. ● Standard ○ Optional \non-optional

Products and specifications may change due to improvement without further notice; actual product prevails.

RGV 20-40t

- Suitable for workpiece transfer on production lines in industrial (heavy-duty) workshops
- Lateral mode and longitudinal mode: the vehicle can run freely on crosswise and lengthwise rails
- Equipped with a 7-inch industrial display for operation/-fault information display and parameter setting
- Supports automatic station function, improving production efficiency and reducing labor costs
- Equipped with laser obstacle-avoidance radar to ensure safety during transfer
- Magnetic-induction high-precision positioning with millimeter-level accuracy; supports automatic charging for 24-hour continuous operation



Track-change RGV

- Supports MES remote system docking; performs automatic station transfer according to dispatching-system commands; exchanges workshop material information in real time; and cooperates with robotic arms, robots and other equipment on the production line to realize fully unmanned production.



Mother-child ferry RGV

- A laser rangefinder mounted on the RGV body emits ranging laser beams which are reflected back by reflector panels, giving the RGV its own position information. Stations can be set freely based on distance information, without quantity limits and without on-site construction — the RGV can be operated to transfer automatically between different stations.
- Multiple controller types supported: PLC, single-chip microcomputers, industrial PCs, etc.
- Equipped with a 7-inch industrial display for operation/fault information display and parameter setting
- Supports automatic station function, improving production efficiency and reducing labor costs
- Equipped with laser obstacle-avoidance radar to ensure safety during transfer
- Laser-rangefinder positioning with high accuracy — error down to millimeter level
- Supports automatic charging for 24-hour continuous operation
- Supports MES remote system docking; performs automatic station transfer according to dispatching-system commands; exchanges workshop material information in real time; and cooperates with robotic arms, robots and other equipment on the production line to realize fully unmanned production.

Type \ Model		RGV-20	RGV-25	RGV-30	RGV-40
Size of loading table（mm）		3500×2200	3800×2200	3800×2200	4200×2200
Rated loadin capacity（kg）		20000	25000	30000	40000
Max speed（m/min）		40	40	40	40
Drive motor power（kw*Q ty）		3×1	3×1	4×1	4×1
Power source		LFP battery			
Dia. of wheel		ϕ420×4	ϕ420×4	ϕ420×4	ϕ420×4
Voltage(v)		51.2	51.2	51.2	51.2
Battery capacity（Ah）		150	150	150	150
Charging Method	Manual charging	●	●	●	●
	Auto Charging	○	○	○	○
Charging time（≤h）		3	3	3	3
Positioning Accuracy（mm）	RFID Positioning	±30	±30	±30	±30
	approach switch	±10	±10	±10	±10
	Magnetic tape QR code/Laser position	±5	±5	±5	±5
Wireless network	2.4G/5G	○	○	○	○
Bumper	Front/Rear /Sides/bumper	○	○	○	○
Contactless Safety device	infrared sensor	○	○	○	○
	Front&rear laser obstacle senser	○	○	○	○
Safety sensing range	1m infrared sensor	○	○	○	○
	4m infrared sensor	\	\	\	\
	10m infrared sensor	○	○	○	○
Emergency stop buttons		●	●	●	●
Power optional	LEP battery	●	●	●	●
	Low voltage track	○	○	○	○
	Slide wire	○	○	○	○
	Dragged cable	○	○	○	○
Function Optional	Latent lifting	○	○	○	○
	Roller table	○	○	○	○
	Track exchange	○	○	○	○
	Combined shuttle	○	○	○	○
	Transmission chain table	○	○	○	○
	Turnable table	○	○	○	○
	Forklift RGV	○	○	○	○

Remarks: 1. Body dimensions can be customized within a certain range; height is confirmed after design according to actual requirements.

2. Battery capacity may be fine-tuned according to module upgrades; for special non-standard endurance requirements, mileage is customized.

3. ● Standard ○ Optional \non-optional

Products and specifications may change due to improvement without further notice; actual product prevails.

RGV 50-80t

- Suitable for workpiece transfer on production lines in industrial (heavy-duty) workshops
- Multiple controller types supported: PLC, single-chip microcomputers, industrial PCs, etc.
- Equipped with a 7-inch industrial display for operation/fault information display and parameter setting
- Supports automatic station function, improving production efficiency and reducing labor costs
- Equipped with laser obstacle-avoidance radar to ensure safety during transfer
- RFID recognition with high positioning accuracy and flexible station layout
- Supports automatic charging for 24-hour continuous operation
- With a workpiece rotating platform, workpieces can be rotated without crane hoisting
- Supports MES remote system docking; performs automatic station transfer according to dispatching-system commands; exchanges workshop material information in real time; and cooperates with robotic arms, robots and other equipment on the production line to realize fully unmanned production



Curved-track RGV



Turntable-platform RGV

Type \ Model		RGV-50	RGV-60	RGV-80
Size of loading table（mm）		5000×2400	5000×2400	5500×2400
Rated loadin capacity（kg）		50000	60000	80000
Max speed（m/min）		30	30	30
Drive motor power（kw*Q ty）		6.6×1	6.6×1	8×1
Power source		LFP battery		
Dia. of wheel		ϕ420×4	ϕ420×4	ϕ420×4
Voltage(v)		51.2	51.2	76.8
Battery capacity（Ah）		150		150
Charging Method	Manual charging	●	●	●
	Auto Charging	○	○	○
Charging time（≤h）		3	3	3
Positioning Accuracy（mm）	RFID Positioning	±30	±30	±30
	approach switch	±10	±10	±10
	Magnetic tape QR code/Laser position	±5	±5	±5
Wireless network	2.4G/5G	○	○	○
Bumper	Front/Rear /Sides/bumper	○	○	○
Contactless Safety device	infrared sensor	○	○	○
	Front&rear laser obstacle senser	○	○	○
Safety sensing range	1m infrared sensor	○	○	○
	4m infrared sensor	\	\	\
	10m infrared sensor	○	○	○
Emergency stop buttons		●	●	●
Power optional	LEP battery	●	●	●
	Low voltage track	○	○	○
	Slide wire	○	○	○
	Dragged cable	○	○	○
Function Optional	Latent lifting	○	○	○
	Roller table	○	○	○
	Track exchange	○	○	○
	Combined shuttle	○	○	○
	Transmission chain table	○	○	○
	Turnable table	○	○	○
	Forklift RGV	○	○	○

Remarks: 1. Body dimensions can be customized within a certain range; height is confirmed after design according to actual requirements.

2. Battery capacity may be fine-tuned according to module upgrades; for special non-standard endurance requirements, mileage is customized.

3. ● Standard ○ Optional \non-optional

Products and specifications may change due to improvement without further notice; actual product prevails.

RGV 100-500t



- Suitable for workpiece transfer on production lines in industrial (heavy-duty) workshops
- Multiple controller types supported: PLC, single-chip microcomputers, industrial PCs, etc.
- Equipped with a 7-inch industrial display for operation/fault information display and parameter setting
- Supports automatic station function, improving production efficiency and reducing labor costs
- Equipped with laser obstacle-avoidance radar to ensure safety during transfer
- RFID recognition with high positioning accuracy and flexible station layout
- Supports automatic charging for 24-hour continuous operation
- With a workpiece rotating platform, workpieces can be rotated without crane hoisting
- Supports MES remote system docking; performs automatic station transfer according to dispatching-system commands; exchanges workshop material information in real time; and cooperates with robotic arms, robots and other equipment on the production line to realize fully unmanned production

Type \ Model		RGV-100	RGV-120	RGV-160	RGV-200	RGV-300	RGV-500
Size of loading table（mm）		5500×2400	6000×2400	6500×2600	7000×2800	10000×3200	12000×3500
Rated loadin capacity（kg）		100000	120000	160000	200000	300000	500000
Max speed（m/min）		25	25	20	20	20	20
Drive motor power（kw*Q ty）		8×1	10×1	8×2	8×2	5.5×4	7.5×5
Power source		LFP battery					
Dia. of wheel		ϕ460×4	ϕ460×4	ϕ420×6	φ460×6	φ420×10	φ460×20
Voltage(v)		76.8	76.8	76.8	76.8	83.2	96
Battery capacity（Ah）				270	300	300	900
Charging Method	Manual charging	●	●	●	●	●	●
	Auto Charging	○	○	○	○	○	○
Charging time（≤h）		3	2	3	3	3	4
Positioning Accuracy（mm）	RFID Positioning	±30	±30	±30	±30	±30	±30
	approach switch	±10	±10	±10	±10	±10	±10
	Magnetic tape QR code/Laser position	±5	±5	±5	±5	±5	±5
Wireless network	2.4G/5G	○	○	○	○	○	○
Bumper	Front/Rear /Sides/bumper	○	○	○	○	○	○
Contactless Safety device	infrared sensor	○	○	○	○	○	○
	Front&rear laser obstacle senser	○	○	○	○	○	○
Safety sensing range	1m infrared sensor	○	○	○	○	○	○
	4m infrared sensor	\	\	○	○	○	○
	10m infrared sensor	○	○	○	○	○	○
Emergency stop buttons		●	●	●	●	●	●
Power optional	LEP battery	●	●	●	●	●	●
	Low voltage track	○	○	○	○	○	○
	Slide wire	○	○	○	○	○	○
	Dragged cable	○	○	○	○	○	○
Function Optional	Latent lifting	○	○	○	○	○	○
	Roller table	○	○	○	○	○	○
	Track exchange	○	○	○	○	○	○
	Combined shuttle	○	○	○	○	○	○
	Transmission chain table	○	\	\	\	\	\
	Turnable table	○	○	○	○	○	○
	Forklift RGV	\	\	\	\	\	\

Remarks: 1. Body dimensions can be customized within a certain range; height is confirmed after design according to actual requirements.

2. Battery capacity may be fine-tuned according to module upgrades; for special non-standard endurance requirements, mileage is customized.

3. ● Standard ○ Optional \non-optional

Products and specifications may change due to improvement without further notice; actual product prevails.

CASE SHOWCASE

APPLICATIONS



300 t RGV for component transfer in the wind power industry



RGV-5 for intelligent logistics transport of anode plates in the copper-smelting industry



RGV-5 automatic flame-cutting/blanking sorting line for construction machinery



Track-change RGV-100 for the wind power industry



400 t ultra-heavy RGV ferry vehicle for infrastructure projects



Laser blanking-line ferry docking cart RGV-20



135 t intelligent coating-line RGV mother-child cart for the wind power industry



10 t RGV mother-child cart for Han's Laser flexible laser blanking production line

豪盛 HAO SHENG　恒昇 HEN SEN

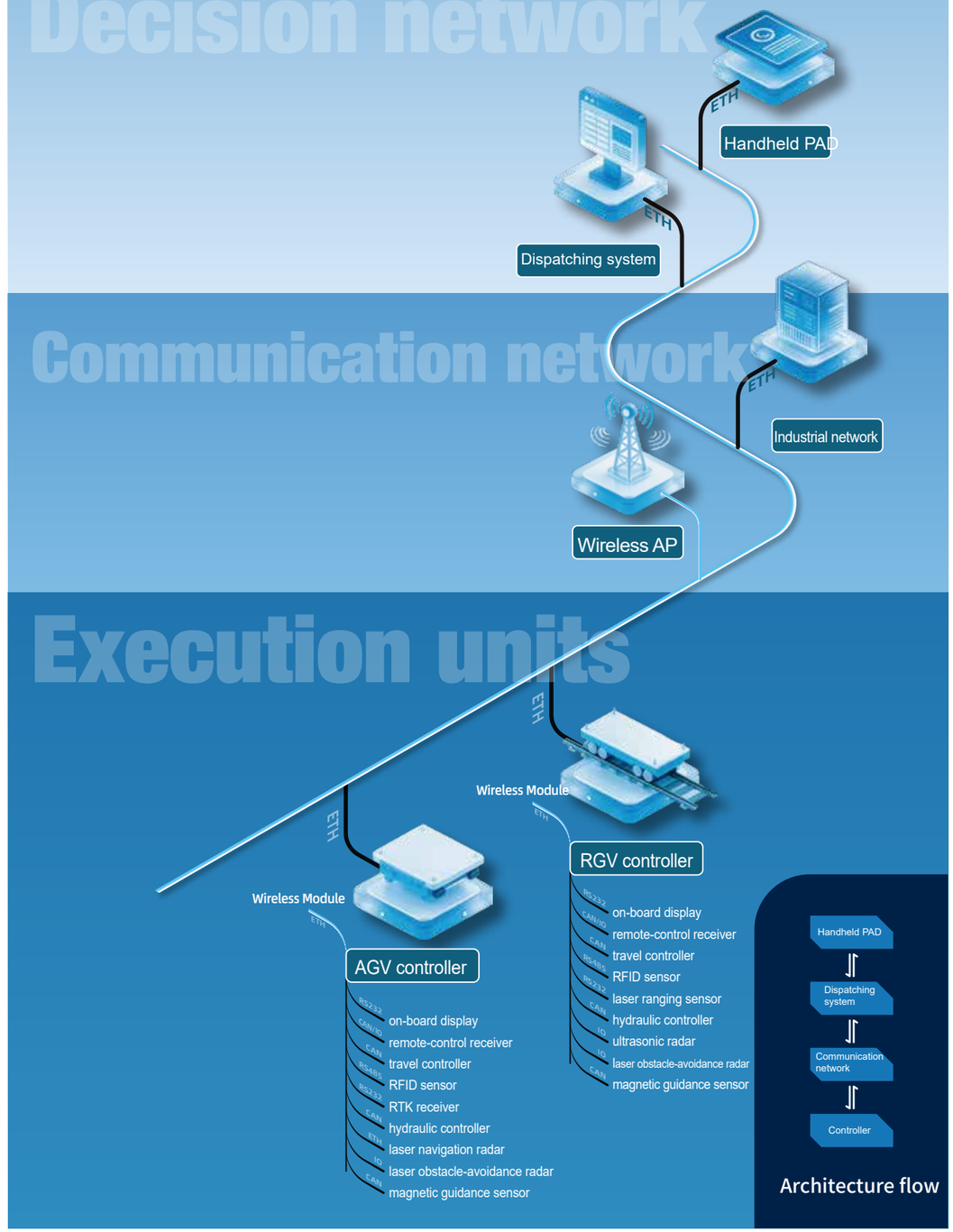
Production Lines Empower Linking the Future

PRODUCTION LINE INTEGRATION

CUSTOMIZED PROFESSIONAL PRODUCTION LINE

INTELLIGENT MANUFACTURING LOGISTICS PRODUCTION LINE

INTELLIGENT MANUFACTURING & SMART LOGISTICS PRODUCTION LINE



INTELLIGENT MANUFACTURING & SMART LOGISTICS PRODUCTION LINE



An intelligent production line is a production mode that uses advanced science, technology and intelligent equipment to achieve automated, efficient and high-quality production. Through IoT, big data, artificial intelligence and other technologies, the intelligent production line interconnects every link on the line, realizing automated control and intelligent operation. This production mode aims to improve production efficiency, reduce costs and enhance product quality, achieving comprehensive digitalization and intelligence of the production process by building information platforms and introducing intelligent equipment.

Intelligent production lines offer many advantages: automated operation greatly reduces manual intervention and improves production efficiency; data is collected automatically via sensors or RFID to display production status in real time; mixed production and assembly of multiple similar products is supported, with flexible process adjustment adapted to small-batch, multi-variety production modes; and the line is resilient, able to cope with equipment failures and other emergencies.

Intelligent production lines are applied in a wide range of fields, including automobile manufacturing, electronics manufacturing and machinery manufacturing. In the future, the development trend of intelligent production lines will put more emphasis on flexibility and customization, enabling more diversified production methods; on collaboration and human-machine integration, making work processes more efficient, safe and people-friendly; and on green environmental protection and sustainability, promoting sustainable development of the production process. In addition, intelligent monitoring and remote management will become important development directions, realizing comprehensive monitoring and remote management of the production process.

In summary, intelligent production lines represent the development direction of modern manufacturing; their application and development are of great significance for enhancing the competitiveness of manufacturing and promoting industrial upgrading.

WHAT IS AN INTELLIGENT PRODUCTION LINE?

1. Intelligent AGV/RGV vehicles are the core components of an intelligent production line. They are usually motor-driven and capable of autonomous travel.

2. Navigation system: An important part of intelligent AGV/RGV vehicles, enabling the AGV to complete assigned tasks on preset or dynamic paths. Navigation systems usually include laser radar, cameras, GPS, magnetic guidance sensors and other sensors, as well as landmarks, signposts and other markers used for positioning.

3. Dispatching system: Responsible for managing and scheduling the movement and operating tasks of intelligent AGV/RGV vehicles. The control system consists of vehicle controllers, path-planning algorithms, task schedulers and other components, achieving intelligent and safe vehicle operation.

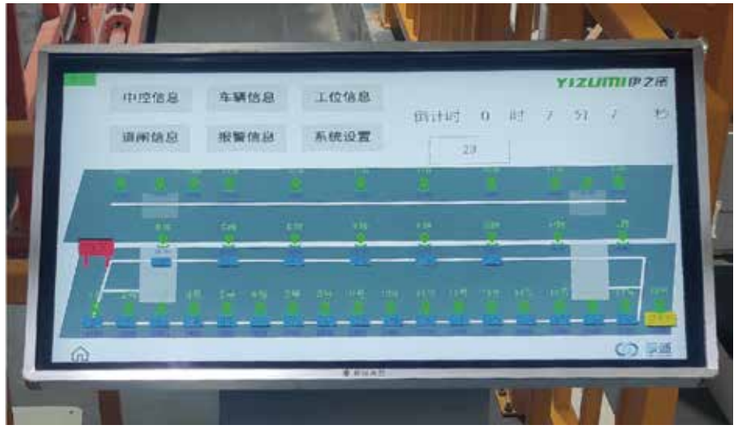
4. Communication module: Responsible for real-time communication with the factory information system or manufacturing execution system (MES), receiving task commands and feeding back operation progress and status information to the system. Communication modules usually include wireless communication equipment and sensor networks.

5. Safety system: Key equipment for ensuring the safety of intelligent AGV/RGV vehicles and personnel. The safety system includes emergency stop devices, anti-collision sensors, safety-zone settings and other functions, used to prevent accidents and handle abnormal situations in time.

6. Power supply and charging equipment: Intelligent AGV/RGV vehicles need power to drive their motors and various electronic devices. Charging equipment is usually installed in designated areas within the factory to charge the AGV/RGV vehicles and ensure their continuous operating capability.

7. Accessories and auxiliary equipment: According to different operating needs, an intelligent AGV/RGV production line may be equipped with various accessories and auxiliary equipment, such as fixtures, conveyor chains and roller lines, to achieve specific operating functions and task requirements.

WHAT YOU SEE IS WHAT YOU GET — BUSINESS AND DISPATCHING STATUS AT A GLANCE



Based on an integrated evaluation function, a globally optimal task-allocation scheme is applied from the bottom up to the "warehouse ⇄ production line" round-trip transport link. The position and current working status of each handling robot are clearly visible, and adjustments can be made in response to unexpected situations.

ADVANTAGES OF THE NTELLIGENT PRODUCTION LINE

1. Higher production efficiency:

Through automated operation and continuous working capability, the intelligent production line greatly improves production efficiency and reduces errors and delays caused by human factors.

2. Lower labor costs:

Automated operation reduces dependence on manual labor, lowers labor costs, and improves the safety and stability of the production line.

3. Flexibility and adaptability:

The intelligent production line has flexible task-dispatching and path-planning capabilities, allowing operating procedures to be quickly adjusted according to production needs and adapting to different production scenarios and task requirements.

4. Less material loss:

Thanks to precise vehicle control and path planning, loss and waste during material transport are reduced, improving production efficiency and resource utilization.

5. Higher safety:

The intelligent production line is equipped with safety systems and anti-collision sensors to ensure the safety of vehicles and personnel during production.



FUNCTIONS OF THE INTELLIGENT PRODUCTION LINE

1. Automated material transport: *The intelligent production line automatically transports raw materials, semi-finished products and finished products between different workstations inside the factory, reducing the need for manual handling and improving the efficiency and accuracy of material transport.*

2. Intelligent path planning: *With intelligent path-planning functions, the line can plan optimal routes according to real-time production needs and environmental changes, avoiding obstacles and optimizing workflows.*

3. Automatic loading/unloading: *The intelligent production line can perform loading and unloading operations automatically, realizing unmanned production processes. It can cooperate with other equipment on the line to achieve automated material loading and unloading.*

4. Task dispatching and coordination: *With task-dispatching and coordination functions, vehicles are dynamically scheduled according to task priority, vehicle status and production plans, ensuring tasks are completed on time.*

5. Real-time monitoring and feedback: *The line monitors vehicle position, status and operation progress in real time and feeds the information back to the production management system promptly, so managers can keep track of line operation at any time and make timely adjustments and optimizations.*

6. Safety assurance: *Equipped with multiple safety functions, including anti-collision sensors and emergency stop devices, to ensure the safety of vehicles and personnel during production.*

7. Flexible adaptability: *The intelligent production line can adapt to different production needs and environments; it can quickly adjust operating procedures to accommodate changes in production plans and unexpected events.*

8. Data recording and analysis: *Key data in the production process is recorded, analyzed and compiled statistically; this data can be used to evaluate production efficiency, optimize workflows and formulate production strategies.*



CUSTOMIZED PRODUCTION LINE — ON-SITE CASE PRESENTATION



Intelligent logistics conveying line AGV for the paper industry

AGV INTELLIGENT PRODUCTION LINE

- More flexible routes
- More convenient installation
- Wider application range
- Higher environmental adaptability
- supports outdoor long-distance operation



40 t intelligent pipeline/segment final-assembly production line for the large tunnel-segment industry





Intelligent manufacturing production line with 20 AGVs for the automobile manufacturing industry



80 t RGV hub intelligent production line for the wind power industry in Inner Mongolia

RGV INTELLIGENT PRODUCTION LINE

- Low investment
- Low maintenance cost
- 24-hour uninterrupted operation
- Track charging is more convenient
- stable, safe and more durable



12 t RGV intelligent production line for the injection-molding machine industry



160 t RGV nacelle intelligent production line for the wind power industry in Beijing



5 t forklift-type RGV intelligent final-assembly production line for the injection-molding machine industry



20 t RGV + 25 t turntable intelligent logistics conveying line for a machining logistics park

豪盛 HAO SHENG　恒昇 HEN SEN

Strength That Makes Handling Easy

BD SERIES

Capacity classes: 2–4 t | 5–12 t | 15–25 t | 30–80 t

Battery Fixed Platform Trucks

BD　2-80 t

HIGH COMFORT

1. Ergonomic design — the steering-wheel tilt angle is adjustable and the seat adjusts forward/backward, so drivers of different heights can find the best driving position.
2. New large-screen LED instrument with good visibility, intuitive reading and a friendly human-machine interface; equipped with remote fault-diagnosis capability.
3. Choice of high and low driving speeds, suitable for both unrestricted-speed and restricted-speed areas.

EFFICIENT AND ENERGY-SAVING

1. Equipped with electrical safety switches: master power switch, key switch, brake switch, etc.
2. Chassis developed on the basis of construction-machinery vehicles — load capacity far exceeds other converted chassis.
3. High-frequency MOSFET integrated controller with a highly efficient travel-control system ensures smooth and precise travel control with excellent speed-regulation performance, featuring regenerative braking, reverse-connection braking and hill anti-slip functions.

SAFE AND RELIABLE

1. Maintenance-free AC motor reduces maintenance costs such as carbon-brush replacement. The AC power system offers high efficiency and complete protection functions, with built-in speed and temperature sensors — reliability and service life are greatly improved.
2. Regenerative braking system: no mechanical wear during braking, while charging the battery — effectively saving energy and extending driving range.
3. The whole series is equipped with permanent-magnet synchronous full-hydraulic steering — flexible and easy steering; the permanent-magnet motor is maintenance-free with high steering efficiency.

ESCORT FUNCTIONS

1. Automatic low-electrolyte alarm for lead-acid batteries; lithium batteries with long cycle life and remote information diagnosis.
2. Automatic reminders of maintenance cycles for the vehicle and parts.
3. Provides vehicle information data for digital factories.

The Battery Fixed Platform Truck features high efficiency and energy saving, clean environmental protection, simple operation, strong load capacity, low maintenance cost and wide applicability — one of the indispensable logistics handling devices in modern enterprises.

FEATURES


Driver cab



Multi-function IoV instrument panel


Fault towing device


Hydraulic (pneumatic) braking + motor regenerative braking


Brushless full-hydraulic steering


AC drive controller assembly


Lithium battery pack


Standard wiring harness

FUNCTIONS


Electric fan


Cup holder


High/low two-speed switching


Cargo-bed side rails


Vehicle four-way split-screen camera view


Customized roof


Shock-absorbing driver seat


Driving warning light


Air conditioner


Reversing camera


Air-brake system


Automatic water replenishing for lead-acid batteries

LIGHT-DUTY 2–4 t



Single-row fully enclosed cab SA



Single-side fully enclosed cab DA



Single-side semi-open canopy cab DB



Single-row semi-enclosed cab SB



Single-side open canopy cab DC



Fully open canopy cab SC

MEDIUM-DUTY 5–12 t



Single-row fully enclosed cab SA



Single-side fully enclosed cab DA



Single-row semi-enclosed cab SB



Single-side semi-open canopy cab DB



Single-side open canopy cab DC



Fully open canopy cab SC

LIGHT-DUTY 2–4 t

BD Truck		BD 2-4 Tons					
Basic Parameters	Model	BD-2		BD-3		BD-4	
	Configuration options	Standard	Premium	Standard	Premium	Standard	Premium
	Rated load capacity	2000kg		3000kg		4000kg	
	Loading table(mm)	L2400×W1500×H＜750		L2400×W1500×H＜770		L3000×W1500×H＜800	
	Peak motor power	8.6kW	11.6kW	11.6kW	13.5kW	13.5kW	16.1kW
	Maximum free-load speed(km/h)	⩾20		⩾20		⩾20	
	Maximum full-load speed(km/h)	⩾16		⩾16		⩾16	
	Maximum climbing capacity	8%×15m	12%×15m	8%×15m	12%×15m	8%×15m	12%×15m
	Lithium battery	7680Wh	11520Wh	7680Wh	11520Wh	11520Wh	11520Wh
	Tires	Pneumatic engineering tires		Pneumatic engineering tires		Pneumatic engineering tires	
	All models offer optional cabs (SA/DA/SB/DB/DC/SC).						

Optional Functions	Model	Configu-Ration	Cargo-bed Side Rails	lead-acid battery	Automatic Battery Water Replenishing	Permanent Magnet Brushless Hydraulic Steering	Driving Indicator	Air Condi-Tioning	Solid Tires	Reversing Camera			
	BD-2	Standard	○	○	○	●	○	○	○	○			
		Premium	○	○	○	●	○	○	○	○			
	BD-3	Standard	○	○	○	●	○	○	○	○			
		Premium	○	○	○	●	○	○	○	○			
	BD-4	Standard	○	○	○	●	○	○	○	○			
		Premium	○	○	○	●	○	○	○	○			

MEDIUM-DUTY 5–12 t

BD Truck		BD 5-12Tons							
Basic Parameters	Model	BD-5		BD-8		BD-10		BD-12	
	Configuration options	Standard	Premium	Standard	Premium	Standard	Premium	Standard	Premium
	Rated load capacity	5000kg		8000kg		10000kg		12000kg	
	Loading table(mm)	L3600×W1600×H＜870		L3800×W1800×H＜900		L4000×W2000×H＜950		L4500×W2200×H＜990	
	Peak motor power	16.1kW	20.6kW	20.6kW	25.6kW	25.6 kW	27.8 kW	27.8 kW	30.2 kW
	Maximum free-load speed(km/h)	⩾16	⩾20	⩾16	⩾20	⩾16	⩾20	⩾15	⩾18
	Maximum full-load speed(km/h)	⩾13	⩾16	⩾13	⩾16	⩾13	⩾16	⩾12	⩾13
	Maximum climbing capacity	8%×15m	12%×15m	8%×15m	12%×15m	8%×15m	12%×15m	8%×15m	12%×15m
	Lithium battery	11520Wh	15744Wh	15744Wh	17664Wh	17664Wh	21504Wh	21504Wh	21504Wh
	Tires	Pneumatic engineering tires		Pneumatic engineering tires		Pneumatic engineering tires		Pneumatic engineering tires	
	All models offer optional cabs (SA/DA/SB/DB/DC/SC).								

Optional Functions	Model	Configu-Ration	Cargo-bed Side rails	Lead-acid battery	Automatic Battery Water Replenishing	Hydraulic Power braking	Air-brake System	Driving Warning light	Air condi-Tioning	Solid tires	Reversing Camera	Permanent-magnet Brushless Full-hydraulic Steering	
	BD-5	Standard	○	○	○	\	\	○	○	○	○	●	
		Premium	○	○	○	\	\	○	○	○	○	●	
	BD-8	Standard	○	○	○	\	\	○	○	○	○	●	
		Premium	○	○	○	\	\	○	○	○	○	●	
	BD-10	Standard	○	○	○	\	\	○	○	○	○	●	
		Premium	○	○	○	\	\	○	○	○	○	●	
	BD-20	Standard	○	○	○	\	\	○	○	○	○	●	
		Premium	○	○	○	\	\	○	○	○	○	●	

● Standard ○ Optional \non-optional

Products and specifications may change due to improvement without further notice; actual product prevails.

(1) The fully enclosed cab is equipped with fan and USB charging port as standard. (2) All models are equipped with water cup holder.
(3) All models are equipped with mobile phone holder. (4) All models are equipped with high and low speed switch as standard.
(5) Half speed reversing for safety. (6) vibration damping seat.

HEAVY-DUTY 15–25 t



Single-row fully enclosed cab SA



Single-side fully enclosed cab DA



Single-row semi-enclosed cab SB



Single-side semi-open canopy cab DB



Single-side open canopy cab DC



Fully open canopy cab SC

ULTRA-HEAVY 30–80 t



Single-row fully enclosed cab SA



Single-side fully enclosed cab DA



Single-row semi-enclosed cab SB



Single-side semi-open canopy cab DB



Single-side open canopy cab DC



Fully open canopy cab SC

HEAVY-DUTY 15–25 t

BD Truck		Heavy-duty 15–25 t					
Basic Parameters	Model	BD-15		BD-20		BD-25	
	Configuration options	Standard	Premium	Standard	Premium	Standard	Premium
	Rated load capacity	15000 kg		20000kg		25000kg	
	Loading table(mm)	L6000xW2500xH＜1040		L6000×W2500×H＜1100		L6500×W2500×H＜1300	
	Peak motor power	30.2 kW	30.2 kW	33.2kW	36.8kW	36.8kW	42.6kW
	Maximum free-load speed(km/h)	⩾13	⩾15	⩾12		⩾11	
	Maximum full-load speed(km/h)	⩾11	⩾13	⩾10		⩾9	
	Maximum climbing capacity	8% x 15m	12% x 15m	6%×12m	8%×12m	6%×12m	8%×12m
	Lithium battery	21504Wh	24960Wh	24960Wh	38272Wh	38272Wh	46592Wh
	Tires	Pneumatic engineering tires		Pneumatic engineering tires		Pneumatic engineering tires	
	All models offer optional cabs (SA/DA/SB/DB/DC/SC).						

Optional Functions	Model	Configu-Ration	Cargo-bed Side Rails	Lead-acid battery	Automatic Battery Water Replenishing	Hydraulic power braking	Air-brake system	Driving warning light	Air Condi-Tioning	Solid Tires	Reversing Camera		
	BD-15	Standard	○	○	○	×	×	○	○	○	●		
		Premium	○	○	○	×	×	○	○	○	●		
	BD-20	Standard	○	○	○	●	×	○	○	○	●		
		Premium	○	○	○	●	×	○	○	○	●		
	BD-25	Standard	○	○	○	●	×	○	○	○	●		
		Premium	○	○	○	●	×	○	○	○	●		

ULTRA-HEAVY 30–80 t

BD Truck		Ultra-heavy 30–80 t				
Basic Parameters	Model	BD-30	BD-40	BD-50	BD-60	BD-80
	Configuration options	/	/	/	/	/
	Rated load capacity	30000kg	40000kg	50000kg	60000kg	80000kg
	Loading table(mm)	L7000×W2500×H＜1300	L7000×W2500×H＜1350	L7500×W2800×H＜1350	L9000×W2800×H＜1350	L10000×W2800×H＜140
	Peak motor power	49.8kW	61.6kW	46.3kW×2	49.8kW×2	58.2kW×2
	Maximum free-load speed(km/h)	⩾10	⩾10	⩾9	⩾9	⩾9
	Maximum full-load speed(km/h)	⩾8	⩾8	⩾7	⩾7	⩾7
	Maximum climbing capacity	6%×12m	6%×12m	6%×12m	6%×12m	6%×12m
	Lithium battery	46592Wh	58368Wh	66432Wh	80640Wh	120960Wh
	Tires	Pneumatic engineering tires	Solid front / pneumatic rear	Solid tires		
	All models offer optional cabs (SA/DA/SB/DB/DC/SC).					

Optional Functions	Model	Configu-Ration	Cargo-bed Side Rails	Lead-acid battery	Automatic Battery Water Replenishing	Hydraulic power braking	Air-brake system	Driving warning light	Air Condi-Tioning	Solid Tires	Reversing Camera	AC full-hydraulic steering	Full-hydraulic wet braking	Electric steering
	BD-30	/	○	○	○	×	●	●	○	○	●	○	×	×
	BD-40	/	○	○	○	×	●	●	○	○	●	○	×	×
	BD-50	/	○	○	○	×	×	●	○	●	●	×	●	●
	BD-60	/	○	○	○	×	×	●	○	●	●	×	●	●
	BD-80	/	○	○	○	×	×	●	○	●	●	×	●	●

● Standard ○ Optional \non-optional

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(1) The fully enclosed cab is equipped with fan and USB charging port as standard. (2) All models are equipped with water cup holder.
(3) All models are equipped with mobile phone holder. (4) All models are equipped with high and low speed switch as standard.
(5) Half speed reversing for safety. (6) Permanent magnet brushless maintenance-free fully hydraulic steering. (7) vibration damping seat.

NON-STANDARD CUSTOMIZATION & CASE SCENARIOS


Ship special-equipment transport vehicle


PC-dedicated electrictransport vehicle PC


Photovoltaic module transport vehicle


Slewing-support tilting-mechanism transport vehicle


Tilting-mechanism transport vehicle


Fully enclosed cab (with on-board air conditioner) transport vehicle


Electric wall-panel transport vehicle


Photovoltaic building-materials transport vehicle


Electric laminated-slab transport vehicle


PC-component transport vehicle PC


Electric tunnel-segment transport vehicle


Electric PC laminated-slab transport vehicle


Electric transport vehicle for excavator undercarriage assemby track


Electric PC-component transport vehicle


Electric excavator boom transport vehicle

NON-STANDARD CUSTOMIZATION & CASE SCENARIOS


Electric component transport vehicle


Electric PC laminated-slab transport vehicle


Electric box-type transport vehicle


Electric PC-component transport vehicle


Electric PC-component transport vehicle


Electric stone/large-slab transport vehicle


PC exterior/interior wall-panel transport vehicle PC


Electric steel-coil transfer vehicle


Electric tunnel-segment transport vehicle


SANY system supporting transport vehicle


Weighing electric transport vehicle


Wind-power tower-segment battery vehicle


Eastern building-materials supporting transport vehicle


Petrochemical explosion-proof vehicle-mounted crane self-dumping vehicle


Military explosion-proof battery vehicle


Hydraulic tail-lift self-unloading vehicle

豪盛 HAO SHENG　恒昇 HEN SEN

Free and Flexible Transfer

WPX SERIES

Capacity classes: 3–5 t | 10–25 t | 30–50 t | 70–200 t

TRACKLESS FLAT CAR

WPX 3-200 t

CONVENIENT AND QUICK

1. LED lights flash during running and steering, with intermittent alarm sound and start-up horn warning.
2. New large-screen LED instrument with remote fault-diagnosis function, convenient for observing speed, battery level and other vehicle status information.
3. Dual-joystick wireless remote-control operation; the remote controls running speed and steering.
4. Direction-swap function — operation is easier and more controllable with no "reversing" concept during running.

SAFE AND RELIABLE

1. Equipped with electrical safety switches: master power switch, key switch, emergency-stop switch, etc.
2. Chassis developed on the basis of construction machinery — strong load capacity and solid structure.
3. High-frequency MOSFET integrated controller with a highly efficient travel-control system ensures smooth and precise travel control with excellent speed-regulation performance, featuring regenerative braking, reverse-connection braking and hill anti-slip functions.

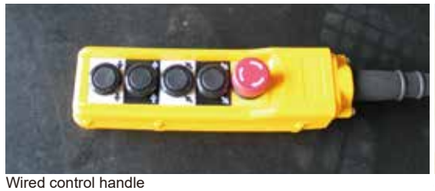
EFFICIENT AND ENERGY-SAVING

1. Maintenance-free AC motor reduces maintenance costs such as carbon-brush replacement. The AC power system offers high efficiency and complete protection functions, with built-in speed and temperature sensors — reliability and service life are greatly improved.
2. Regenerative braking system: charges the battery during braking, increasing driving range; automatic parking brake.
3. All safety-protection switches are pre-fitted with test function buttons — faults can be judged without testing tools.

ESCORT FUNCTIONS

1. Automatic low-electrolyte alarm for lead-acid batteries; lithium batteries with long cycle life and remote information diagnosis.
2. Automatic reminders of maintenance cycles for the vehicle and parts.
3. Provides vehicle information data for digital factories.




Wired control handle


Joystick wireless remote controller (optional)

FUNCTION INTRODUCTION PHOTOS


Blind-spot-free inductive safety protection


Electric control box


Inside the electric control box

WPX SERIES TRACKLESS FLAT CAR — OPTIONS INFORMATION TABLE

Parameter Information											Optional Functions					
Model	Standard Functions	Vehicle type	Configuration	Rated load capacity	Loading table (mm)	Peak motor power	Maximum speed km/h	Maximum Climbing Capacity	Battery type	Tire	Joystick wireless remote controller	Hydraulic lifting	Contact-type safety protection	End inductive safety protection (anti-collision)	Blind-spot-free inductive safety protection	Steering-speed joystick control with automatic directionreturn
3-5T	1. All-around emergency-stop buttons; 2. Running indicator lights; 3. Safety guard rails; 4. Wired control handle; 5. Towing device; 6. Reversing safety half-speed; 7.Forward / backward direction swap; 8. Fully automatic parking brake; 9. 7-inch intelligent IoV instrument; 10.Permanent-magnet brushless maintenance-free full-hydraulic steering motor; 11. Push-button remote controller.	WPX-3	Standard	3000kg	L2500×W1500	4.5kW	30	6%×15m	Boost lead-acid	6.00-9 Solid engineering tires	○	○	○	○	○	○
			Premium			5kW		10%×15m	Lithium		○	○	○	○	○	○
		WPX-5	Standard	5000kg	L3000×W1500	5kW	30	6%×15m	Boost lead-acid	6.00-9 Solid engineering tires	○	○	○	○	○	○
			Premium			6.4kW		10%×15m	Lithium		○	○	○	○	○	○
10-25T		WPX-10	Standard	10000kg	L3500×W1800	6.4kW	30	6%×15m	Boost lead-acid	Φ559 Press-fit solid tires	○	○	○	○	○	○
			Premium			8.6kW		10%×15m	Lithium		○	○	○	○	○	○
		WPX-15	Standard	15000kg	L3500×W2000	8.6kW	30	6%×15m	Boost lead-acid	Φ559 Press-fit solid tires	○	○	○	○	○	○
			Premium			11.6kW		10%×15m	Lithium		○	○	○	○	○	○
		WPX-20	Standard	20000kg	L4000×W2200	11.6kW	30	6%×15m	Boost lead-acid	Φ559 Press-fit solid tires	○	○	○	○	○	○
			Premium			14.5kW		10%×15m	Lithium		○	○	○	○	○	○
		WPX-25	Standard	25000kg	L4500×W2200	14.5kW	30	6%×15m	Boost lead-acid	Φ559 Press-fit solid tires	○	○	○	○	○	○
			Premium			16.1kW		10%×15m	Lithium		○	○	○	○	○	○
30-50T		WPX-30	Standard	30000kg	L4500×W2400	16.1kW	30	6%×15m	Boost lead-acid	Φ559 Press-fit solid tires	○	○	○	○	○	○
			Premium			20.6kW		10%×15m	Lithium		○	○	○	○	○	○
		WPX-40	Standard	40000kg	L5000×W2500	20.6kW	30	6%×15m	Boost lead-acid	Φ711 Polyurethane solid tires	○	○	○	○	○	○
			Premium			25.6kW		10%×15m	Lithium		○	○	○	○	○	○
		WPX-50	Standard	50000kg	L5500×W2500	25.6kW	30	6%×15m	Boost lead-acid	Φ711 Polyurethane solid tires	○	○	○	○	○	○
			Premium			30.6kW		10%×15m	Lithium		○	○	○	○	○	○
60-100T		WPX-60	Standard	60000kg	L6000×W2500	16.1kW ×2	30	6%×15m	Boost lead-acid	Φ559 Polyurethane solid tires	○	○	○	○	○	○
			Premium			20.6kW ×2		10%×15m	Lithium		○	○	○	○	○	○
		WPX-80	Standard	80000kg	L6500×W2500	20.6kW ×2	30	5%×15m	Boost lead-acid	Φ711 Polyurethane solid tires	○	○	○	○	○	○
			Premium			25.6kW ×2		8%×15m	Lithium		○	○	○	○	○	○
		WPX-100	Standard	100000kg	L7000×W3000	25.6kW ×2	25	5%×15m	Boost lead-acid	Φ711 Polyurethane solid tires	○	○	○	○	○	○
			Premium			30.6kW ×2		8%×15m	Lithium		○	○	○	○	○	○

● Standard ○ Optional \non-optional

Products and specifications may change due to improvement without further notice; actual product prevails.

NON-STANDARD CUSTOMIZATION & CASE SCENARIOS


Heavy-load 70 t trackless flat car


Heavy-load 15 t scissor-lift platform trackless flat car


Heavy-load 50 t trackless flat car


Heavy-load 40 t trackless flat car


Heavy steel-plate transport trackless flat car


Wind-power heavy-load 60 t trackless flat car


50 t aluminum-plate trackless flat car


Excavator-undercarriage transport trackless flat car for the construction machinery industry


Heavy-load 15 t trackless flat car


15 t aluminum-bar transfer trackless flat car


Product-transfer trackless flat car for the copper-smelting industry


Wind-power gearbox transfer trackless flat car


High-voltage electrical test equipment transfer trackless flat car


Large cable-transfer heavy-load trackless flat car

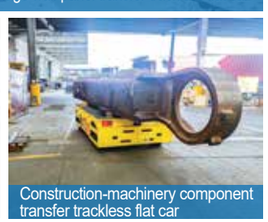

Aluminum-coil transport trackless flat car


Large-tonnage wall-panel transfer trackless flat car


25 t copper-coil transport vehicle


Injection-molding machine mould transfer trackless flat car


Injection-molding machine mould transfer trackless flat car


Construction-machinery component transfer trackless flat car

豪盛 HAO SHENG　恒昇 HEN SEN

Steady and Dedicated Handling



KP SERIES

Capacity classes: 5–30 t | 40–60 t | 80–160 t | 200–500 t

RAIL FLAT CAR

KP　5-500 t

CONVENIENT AND QUICK

1. LED lights flash during running and steering, with intermittent alarm sound.
2. New large-screen LED instrument with remote fault-diagnosis function, convenient for observing speed, battery level and other vehicle status information.
3. Choice of high and low driving speeds, suitable for different working conditions.

SAFE AND RELIABLE

1. Equipped with electrical safety switches: master power switch, key switch, emergency-stop switch, etc.
2. Chassis developed on the basis of train structures and construction machinery, using small-diameter multi-wheel sets and a low-platform design — low center of gravity, anti-tipping, strong load capacity.
3. High-frequency MOSFET integrated controller with a highly efficient travel-control system ensures smooth and precise travel control with excellent speed-regulation performance, featuring regenerative braking and reverse-connection braking functions.

EFFICIENT AND ENERGY-SAVING

1. Maintenance-free AC motor reduces maintenance costs such as carbon-brush replacement. The AC power system offers high efficiency and complete protection functions, with built-in speed and temperature sensors — reliability and service life are greatly improved.
2. Reliable and balanced regenerative braking that also charges the battery, increasing driving range; automatic parking brake.
3. Visualized, modular control system lowers the skill requirements for equipment maintenance personnel.

ESCORT FUNCTIONS

1. Automatic low-electrolyte alarm for lead-acid batteries; lithium batteries with long cycle life and remote information diagnosis.
2. Automatic reminders of maintenance cycles for the vehicle and parts.
3. Provides vehicle information data for digital factories.



HSKP　Unpowered Rail Flat Car



HSKPX　Battery-powered Rail Flat Car



HSKPD　Low-voltage-powered Rail Flat Car



HSKPH　Sliding-contact-wire-powered Rail Flat Car



HSKPT　Cable-reel High-voltage-powered Rail Flat Car



HSKPL　Dragged-cable-powered Rail Flat Car

KP Parameter Information of KP Series Rail Flat Car

Basic Parameters						Power System					
Model	Rated load	Loading table	Motor peak power	High / Low Speed	Steel wheel dia.	KP (unpowered)	KPX (battery)	KPDZ (rail low-voltage)	KPH (sliding wire low-voltage)	KPT (cable reel HV)	KPL (dragged cable HV)
5-15T	5000kg	L3000×W1800×H<460mm	4.5kW	40m/min 15m/min	Φ250	○	A / C / S	○	○	○	○
	10000kg	L3200×W2000×H<490mm	6.4kW	40m/min 15m/min	Φ350	○	A / C / S	○	○	○	○
	15000kg	L3500×W2000×H<530mm	7.6kW	40m/min 15m/min	Φ350	○	A / C / S	○	○	○	○
20-30T	20000kg	L3500×W2200×H<590mm	8.6kW	40m/min 15m/min	Φ420	○	A / C / S	○	○	○	○
	25000kg	L3500×W2200×H<590mm	10.2kW	40m/min 15m/min	Φ420	○	A / C / S	○	○	○	○
	30000kg	L3800×W2200×H<680mm	11.6kW	40m/min 15m/min	Φ420	○	A / C / S	○	○	○	○
35-60T	35000kg	L4000×W2200×H<710mm	13.5kW	40m/min 15m/min	Φ420	○	A / C / S	○	○	○	○
	40000kg	L4200×W2200×H<710mm	14.8kW	40m/min 15m/min	Φ420	○	A / C / S	○	○	○	○
	45000kg	L4500×W2200×H<720mm	16.1kW	40m/min 15m/min	Φ420	○	A / C / S	○	○	○	○
	50000kg	L5000×W2400×H<750mm	17kW	40m/min 15m/min	Φ420	○	A / C / S	○	○	○	○
	60000kg	L5000×W2400×H<750mm	18.6kW	40m/min 15m/min	Φ420	○	A / C / S	○	○	○	○
80-500T	80000kg	L5500×W2400×H<780mm	20.6kW	30m/min 11m/min	Φ420	○	A / C / S	○	○	○	○
	100000kg	L5500×W2400×H<900mm	25.6kW	30m/min 11m/min	Φ460	○	A / C / S	○	○	○	○
	120000kg	L6000×W2400×H≤950mm	27.8kW	30m/min 11m/min	Φ460	○	A / C / S	○	○	○	○
	150000kg	L6500×W2600×H<1100mm	16.1kW X 2	30m/min 11m/min	Φ420	○	A / C / S	○	○	○	○
	200000kg	L7000×W2600×H<1300mm	20.6kW X 2	30m/min 11m/min	Φ460	○	A / C / S	○	○	○	○
	300000kg	L10000×W3200×H<1300mm	16.1kW X 4	20m/min 10m/min	Φ420	○	A / C / S	○	○	○	○
	500000kg	L12000×W3500×H<1300mm	20.6kW X 5	20m/min 10m/min	Φ460	○	A / C / S	○	○	○	○

● Standard ○ Optional \non-optional

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KP Standard & Optional Equipment Table

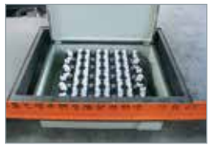
Rated Load Capacity	Standard	Isolation/ explosion-proof electrical parts	Boarding ladder	Stand-on ride-along operating platform	Wireless remote controller	On-board push buttons	Rail sweeping device	All-around guard rails	(passive) Towing device	Anti-collision buffer device	Contact-type safety protection	Inductive safety protection	Multi-station fixed-point parking	Weighing function	Customized loading table sizes	Customized automation unctions	Rail-end anti-derailment protection
5000kg	1. Foldable electric-control box for easy inspection and repair 2. High/low dual-speed mode 3. Soft start, soft stop, stepless speed change 4. Fully automatic parking brake 5. Driving indicator lights 6. Driving alarm-sound safety reminder 7. Vehicle authorization key 8. Wired control handle 9. Quick-change battery pack 10. 7-inch intelligent IoV instrument	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
10000kg		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
15000kg		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
20000kg		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
25000kg		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
30000kg		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
40000kg		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
45000kg		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
50000kg		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
60000kg		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
80000kg		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
100000kg		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
120000kg		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
150000kg		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
200000kg		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
300000kg		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
500000kg		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

● Standard ○ Optional \non-optional

Products and specifications may change due to improvement without further notice; actual product prevails.

Example of Optional Function


Explosion-proof charging plug


Explosion-proof battery pack


Isolation explosion-proof motor


Solation explosion-proof electric-control box and wired handle


Explosion-proof warning lamp


Boarding ladder


Stand-on ride-along operating platform


Wireless remote controller


On-board push-button operation


Rail sweeping device


Customized turning function


All-around guard rails


Passive) towing device


Anti-collision buffer device


Contact-type safety protection


Nductive safety protection


Rail-end anti-derailment protection

KP

FUNCTION INTRODUCTION

Product callouts
(photo of KP rail flat car)


Handle storage rack


Wireless remote control


Power switch

Vehicle authorization key

Lifting points

Electric-control box



Quick-change battery pack

Driving indicator lights


Visualized, modular control system



Multi-function instrument


Steam-turbine heavy-load transport vehicle


"Jiaolong" submersible maintenance center


Cable transport vehicle


Mould heavy-load transport vehicle

NON-STANDARD CUSTOMIZATIONS & APPLICATIONS


Steel-coil transport vehicle


Leveling-machine feeding transport vehicle


50 t steel-plate warehousing translation vehicle


Flap-type component rail vehicle


Bridge-component transport vehicle


120 t steel-coil transport vehicle



Copper-smelting slag-ladle transport vehicle


Laminated-slab transport vehicle for the PC industry


Automatic roller transport vehicle


Boom transport vehicle


300 t ultra-heavy rail vehicle for the wind power industry


Heavy-load 160 t copper-smelting high-temperature material transport vehicle

豪盛 HAO SHENG　恒昇 HEN SEN

Pragmatic and Free Handling



PT SERIES

Capacity classes: 10–20 t | 25–40 t | 50–100 t

PLATFORM TRAILER

PT　10-100 t

ADVANCED TECHNOLOGY

1. The towing device has a buffering function, reducing impact on the tractor for a more comfortable driving feel.
2. The towing device has horizontal-state elastic support, making trailer coupling easier.
3. Modular wheel-set structure keeps the loading-platform height to a minimum.

SAFE AND RELIABLE

1. Chassis developed on semi-trailer technology — load capacity far exceeds other converted chassis.
2. Large-diameter slewing support makes the whole vehicle bear force more evenly and steer more safely.
3. Solid tires optional, reducing tire maintenance.

EFFICIENT AND ENERGY-SAVING

1. Modular design and production of the whole vehicle structure — production cycle shortened by half.
2. Extra-large customized trailers can be assembled on the customer's site.

ESCORT FUNCTIONS

1. Automatic reminders of maintenance cycles for the vehicle and parts.
2. Provides vehicle information data for digital factories.



PT-10



PT-30



PT-50



PT-80



PT-100



DOUBLE-HEAD TRACTOR TRAILER

PT Series Trailer Parameter Information

Model	Rated load capacity	Loading table	Maximum speed	Steering type	Tow bar status	Tire
Light 10-20T	10000kg	L4000×W1800×H＜800	25km/h	Turntable steering	Auto level-keeping	Pneumatic engineering tires
	15000kg	L5000×W2000×H＜800	25km/h	Turntable steering	Auto level-keeping	Pneumatic engineering tires
	20000kg	L5500×W2200×H＜900	25km/h	Turntable steering	Auto level-keeping	Pneumatic engineering tires
Medium 25-50T	25000kg	L6000×W2400×H＜950	20km/h	Turntable steering	Auto level-keeping	Pneumatic engineering tires
	30000kg	L6000×W2500×H＜950	20km/h	Turntable steering	Auto level-keeping	Pneumatic engineering tires
	40000kg	L6500×W2500×H＜1000	20km/h	Turntable steering	Auto level-keeping	Pneumatic engineering tires
	50000kg	L7000×W2600×H＜1050	20km/h	Turntable steering	Auto level-keeping	Pneumatic engineering tires
Heavy 60-100T	60000kg	L7500×W2800×H＜1150	16km/h	Turntable steering	Auto level-keeping	Solid engineering tires
	80000kg	L8000×W3000×H＜1150	16km/h	Turntable steering	Auto level-keeping	Solid engineering tires
	100000k	L10000×W3000×H＜1250	16km/h	Turntable steering	Auto level-keeping	Solid engineering tires

PT Trailer Option List

Model	Light10-20T			Medium25-50T				Heavy60-100T		
Rated load capacity	10000kg	15000kg	20000kg	25000kg	30000kg	40000kg	50000kg	60000kg	80000kg	100000kg
Fully (semi-) enclosed cargo box	○	○	○	○	○	○	○	○	○	○
Cargo-bed side rails (posts)	○	○	○	○	○	○	○	○	○	○
On-board toolbox	○	○	○	○	○	○	○	○	○	○
Service braking	○	○	○	○	○	○	○	○	○	○
Handbrake parking brake	○	\	\	\	\	\	\	\	\	\
Tire-clamp parking brake	○	○	\	\	\	\	\	\	\	\
Air-cut-off parking brake	\	○	○	○	○	○	○	○	○	○
Solid tires	○	○	○	○	○	○	○	●	●	●
Towing-bar buffering function	●	●	●	●	●	●	●	●	●	●
All-around safety guard rails	○	○	○	○	○	○	○	○	○	○
Multi-section towing device	○	\	\	\	\	\	\	\	\	\
Auxiliary outriggers	○	○	○	○	○	○	○	○	○	○
Rear tail lights	○	○	○	○	○	○	○	○	○	○
All-around reflective stickers	○	○	○	○	○	○	○	○	○	○
Tire steering	\	\	\	\	\	\	\	\	\	\
Double-head towing	○	○	○	○	○	○	○	○	○	○
Customized platform size	○	○	○	○	○	○	○	○	○	○

● Standard ○ Optional \non-optional

Products and specifications may change due to improvement without further notice; actual product prevails.


Shanghai Electric concrete-component hanging-basket transport trailer


Navy equipment air-compressor square-cabin trailer


Nanjing Chenguang missile trailer

NON-STANDARD CUSTOMIZATIONS & APPLICATIONS


Mobile communication signal-tower trailer


Milling-planer dedicated transport platform trailer


Shaoxing Yongjian double-head platform trailer


Jinxiao building-component transport platform trailer


Zhejiang Zhugong wall-panel dedicated transport vehicle


Steel-coil transport platform trailer


Container-type platform trailer


Nuclear-power emergency water-pump dedicated platform trailer


Huangpu Shipbuilding hull transport vehicle


Emergency-communication dedicated platform trailer


XCMG Group crawler-crane transport trailer

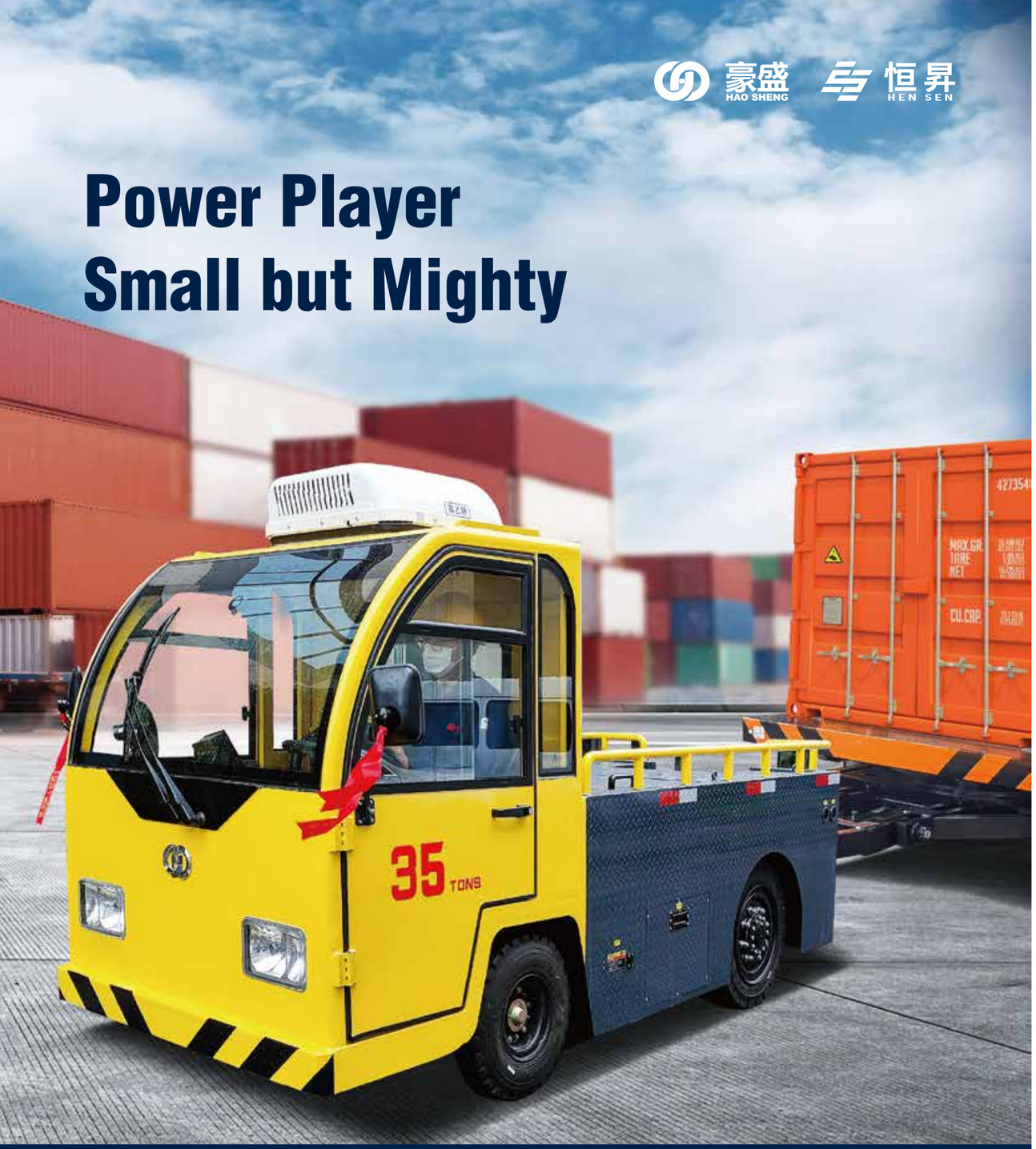

Hangzhou Construction Engineering metro tunnel-segment transport vehicle


Suzhou Jiangnan square-cabin trailer


Large shipyard dock heavy platform trailer

豪盛 HAO SHENG　恒昇 HEN SEN

Power Player
Small but Mighty



QSD SERIES

Capacity classes: 8–10 t | 15–25 t | 30–50 t

ELECTRIC TRACTOR



Electric Tractor

(8-50 t)

QSD

QSD Series Electric Tractor Options Table

QSD	Model	QSD-8	QSD-10	QSD-15	QSD-20	QSD-25	QSD-30	QSD-35
Basic Para-meters	Rated towing weight	8000 kg	10000 kg	15000 kg	20000 kg	25000 kg	30000 kg	35000 kg
	Chassis structure	4-wheel	4-wheel	4-wheel	4-wheel	4-wheel	4-wheel	4-wheel
	Overall dimensions	L3520×W1320	L3520×W1320	L3520×W1320	L3520×W1320	L3785×W1500	L3785×W1500	L3785×W1500
	Motor peak power	27.8 kW	27.8 kW	35.2 kW	35.2 kW	48.2kW	58.4kW	61.8kW
	Max speed, no load (km/h)	⩾12	⩾12	⩾12	⩾12	⩾12	⩾12	⩾12
	Max speed, full load (km/h)	⩾10	⩾10	⩾10	⩾10	⩾10	⩾10	⩾10
	Max gradeability	8% x 15m	8% x 15m	8% x 15m	8% x 15m	8% x 15m	6% x 15m	6% x 15m
	Towing-pin center height	390	390	390	390	390	390	390
	Lead-Acid Battery energy	20160Wh	23760Wh	30240Wh	40000Wh	48000Wh	57600Wh	57600Wh
	Tires	Pneumatic: front 700-9 / rear 28×9-15						
Cab Type	Semi-open Canopy	○	○	○	○	○	○	○
	Fully enclosed	○	○	○	○	○	○	○
Optional Functions	Power lithium batt-ery (with heating)	○	○	○	○	○	○	○
	Automatic battery water replenishing	○	○	○	○	○	○	○
	Shock-absorbing driver seat	●	●	●	●	●	●	●
	Driving warning light	○	○	○	○	○	○	○
	Air conditioner	○	○	○	○	○	○	○
	Solid tires	○	○	○	○	○	○	○

● Standard　○ Optional　\non-optional

Products and specifications may change due to improvement without further notice; actual product prevails.

Standard Configuration →

Full-hydraulic steering wheel



Engineering-vehicle seat



Hook micro-switch



Hook micro-switch



NON-STANDARD CUSTOMIZATIONS & APPLICATIONS


SANY heavy-load 15 t fully enclosed tractor


35 t heavy electric tractor


Heavy-load 15 t fully enclosed tractor


Heavy-load 35 t fully enclosed tractor for the construction industry in Sichuan


SANY heavy-load 20 t fully enclosed tractor


Heavy-load 15 t stand-up tractor


Yiliang Zhichen heavy-load 20 t semi-open canopy tractor


Tangshan heavy-load 15 t stand-up tractor


Shaanxi heavy-load 35 t machinery-equipment transport tractor


Haiwei Concrete heavy-load 15 t tractor


Shaoxing Yongjian building-materials transport vehicle


Heavy-load 35 t tractor


SANY Group parts transport tractor

豪盛 HAO SHENG

恒昇 HEN SEN



BUILT TO CARRY, ENGINEERED TO EVOLVE.