



AWRM—Smart Logistics Forklifts



part of **KIND** Spa Group

VisionNav Robotics

Product series

Full range scenarios
application of intralogistics

Flexible logistics automation solution covering all range of intralogistics scenarios, dealing with various goods in factories and warehousing industries.

Series



Autonomous Industrial Vehicles in different scenarios Product series



Multi-layer Stacking

Integrating the "vision + 3D laser" navigation and perception technology to achieve accurate stacking of more than six layers of goods.



Indoors & Outdoor Traction

Integrating high-precision navigation, positioning and environmental perception technology to flexibly respond to complex outdoor environments.



Horizontal Transport

Adapted to standard carriers, non-standard carriers and non-carriers for automated material transfer.



Multi-layer Stacking

Integrating the "vision + 3D laser" navigation and perception technology to achieve accurate stacking of more than six layers of goods.



Truck Loading and Unloading

Accurately match different types of trucks, and realize a highly automated closed-loop of the whole process of intralogistics.



Global Network




VisionNav



Anytime, anyplace we are happy to provide driverless internal logistics solution for global market.

Services Network

Sales, Operations, and Services in 30+ Countries and Regions.

-  24/7 help desk
8h solution proposals 48h technicians arrive
-  System maintenance and upgrade
-  Preventive maintenance Professional training service Remote technical support

Asia & Pacific

China Mainland	Singapore
Hong Kong	Vietnam
South Korea	Thailand
Japan	India
Australia	...

Europe

UK	Netherlands
Germany	Belgium
Italy	Switzerland
France	Austria
Spain	...

America

United States
Canada



Driveless Vehicle

Vision Navigation
industrial vehicles
empowered
driverless logistic

VisionNav driverless forklifts undertake **every type of task** that would be expected of a traditional manually operated forklift – including **vehicle loading and unloading**, pallet put-away and retrieval in both standard and very narrow aisle racking, as well as **pallet and stillage movements** throughout the warehouse.



Solution Architecture VisionNav

Driverless logistic solution



Main Advantages



EFFICENCY



Improve the logistics efficiency by about 30% without changing the existing processes

DIGITAL MANAGEMENT



Visual operation, synchronize information flow and material flow

Cloud computing and data management

SAFETY



Strictly complied with international safety design standards, use dual-system control and 5 level safety protection

Risk warning in realtime feedback.

Software System VisionNav

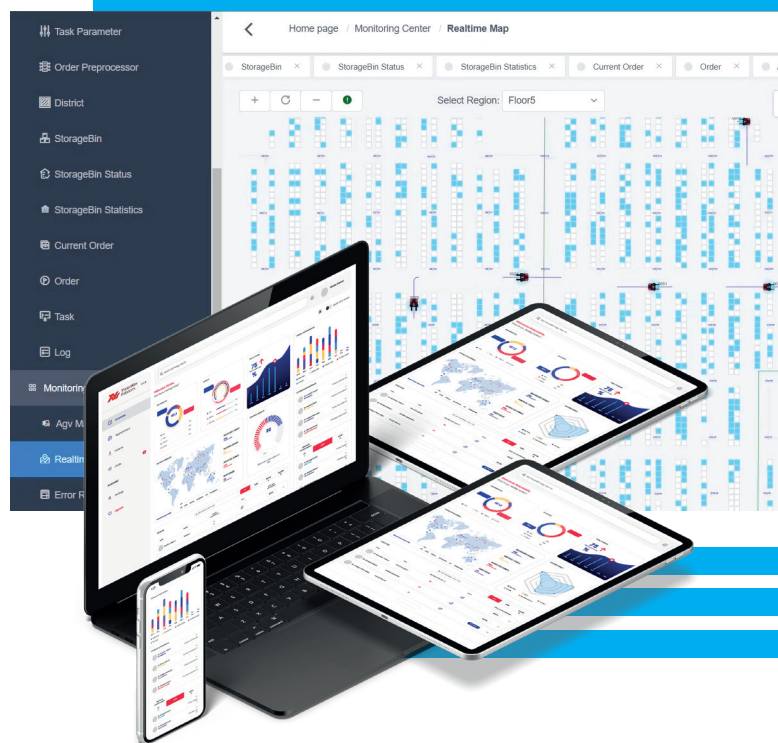
Robot Control System

Robot Control System is a visualized intelligent scheduling system for up to 150 AGFs communication and task management.

The system **can realize multi-AGF scheduling, path planning, collisions avoidance, task management** and data analysis in large-scale vehicle scheduling scenarios.

Scheduling from the cloud, the system functions effectively, flexibly and stably.

Docking with **MES/WMS/ERP** system and coordinated with **vision navigation** modules, the system can provide customers a more integrated and cooperative solution of industrial vehicle.



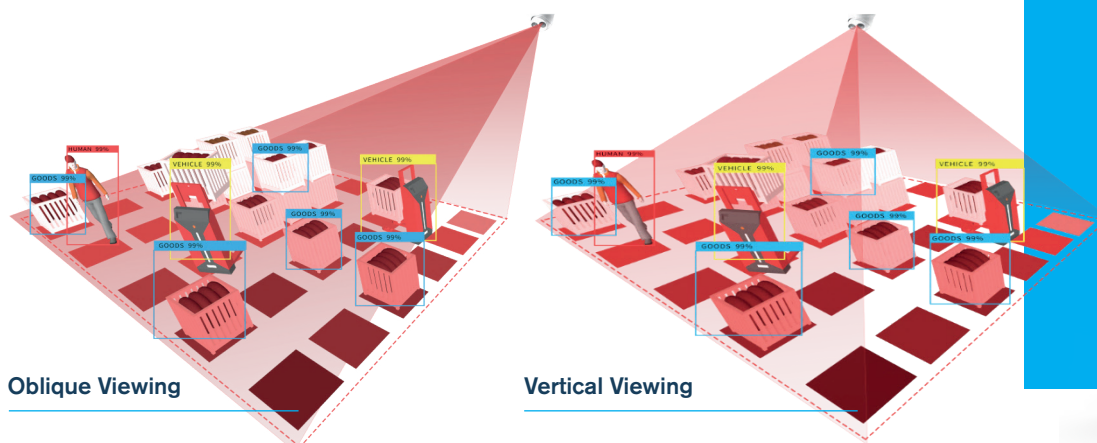
Brighteye System

Based on **deep learning image identification technology**, **BrightEye System** can detect storage location situation in real-time.

With the help of big data and AI intelligence algorithm, the system can effectively **identify and track** the goods, pallets, forklifts, operators and other objects in the warehouse.

It can **share logistic information with WMS system and central control system in real time**, providing storage location safety information to the companies, as well as helping unmanned operation of AGFs, patrol robots and other intelligent devices.

In addition, BrightEye System is equipped with **infrared detection**, enabling itself to perform real-time detection task without lighting.



Hardware AGVs

VisionNav



T Series

L Series

SLIM Series

Function		Pallet Mover Forklift AGF	Pallet Stacker Forklift AGF	Slim Pallet Stacker Forklift AGF	Counterbalanced Stacker Forklift AGF
Model		VNT20	VNL14 VNL16	VNLS14	VNP15
Lifting Height		0-125mm	0-2924mm	0-1600mm	0-3000mm
Rated Load Capacity		2000KG	1400KG 1600KG	1400KG	1500KG
Carrier Type	Nine Block Pallet	Yes	Yes	Yes	Yes
	Four-Way Entry Open-Boarded Pallet	Yes	Yes	Yes	Yes
	Four-Way Entry Close-Boarded Pallet				Yes
	Stillage Cage/Multi-Layer Rack	Yes	Yes	Yes	Yes
	Trailer Storage Rack				
	No Carrier Materials				
Height		1970mm	2000mm	1957mm	2075mm
Weight		960KG	1250KG 1400KG	680KG	2700KG
Minimum Operating Aisle Width (Stacking Aisle Width, PalletSize L*W: 1200*1000mm pallet lengthwise)		2600mm	2700mm	2100mm	3000mm
Recommended Scenarios	Indoor Horizontal Transportation	Yes	Yes	Yes	Yes
	Indoor Production LineTransfer	Yes	Yes	Yes	Yes
	Indoor Material Stacking				Yes
	Indoor Put-Away and Picking		Yes	Yes	Yes
	Truck Loading				Yes
	Indoor & Outdoor Traction				

Vehicles



P Series

E Series

R Series

Q Series

Counterbalanced Stacker & Clamp Forklift AGF	Counterbalanced Stacker Forklift AGF	Counterbalance Truck AGF for Indoor & Outdoor	Heavy-load Reach Truck AGF		Autonomous Tractor
VNP15A	VNP20	VNE20	VNR14	VNR16	VNQ50
0-3000mm	/	0-3000mm	0-7255mm		/
600KG	/	2000KG	1400KG	1600KG	/
		Yes	Yes		/
		Yes	Yes		/
		Yes	Yes		/
		Yes	Yes		/
			Yes		/
Yes		Yes			/
2075mm	2085mm	2040mm	3376mm		/
2800KG	3300KG	3200KG	2890KG	2940KG	/
3000mm	3600mm	2725mm	3000KG	3100KG	/
Yes	Yes	Yes			/
Yes	Yes	Yes			/
Yes	Yes	Yes	Yes		/
	Yes	Yes	Yes		/
Yes	Yes	Yes			/
					/

T-Series

VisionNav

Large tonnage, long-distance
horizontal transportation, fast material transfer.



Product Model

VNT20

Fundamental Technical Parameters

Weight		960KG
Dimension	Overall Length/Width/Height (L*W*H)	2177*991*1970mm
	Fork Dimension (L*W*H)	1130*170*70mm
	Width over Forks	560/680mm
	Width between Forks	202/322mm
Navigation Type	Positioning Method	Vision-based Navigation
	Perception Method	Laser Scanning
Type of Operation		Automatic / Manual Handheld

Load Capacity and Lifting Height

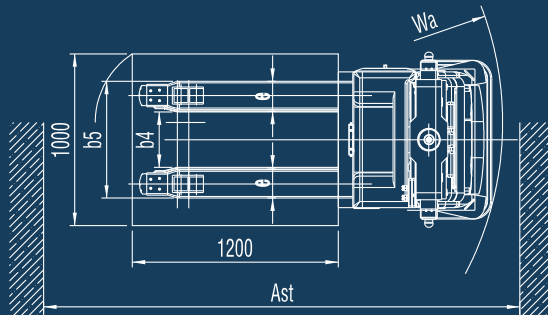
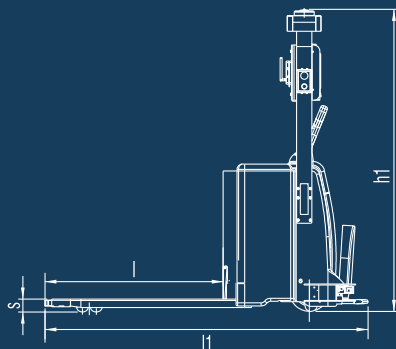
Rated Load Capacity		2000KG
Maximum Traction Capacity		/
Load Center		600mm
Lifting Height		125mm

Motion Performance

Maximum Driving Speed	Straight Forward (<i>fork facing backward</i>) Full-Load/Empty-load		1.5m/s, 2.0m/s
	Straight Backward (<i>fork facing forward</i>) Full-Load/Empty-load		.6m/s, 0.6m/s
Maximum Turning Speed	Turning Forward(<i>fork facing backward</i>) Full-Load/Empty-load		0.3m/s, 0.6m/s
	Turning Backward(<i>fork facing forward</i>) Full-Load/Empty-load		0.3m/s, 0.6m/s
Maximum Fork Moving Speed	Lift Speed Full-Load/Empty-load		36mm/s, 43mm/s
	Lower Speed Full-Load/Empty-load		64mm/s, 60mm/s
Stacking Accuracy			±20mm
Perception Performance	Space Self-adaptability	Good Centered-Placing Accuracy	±20mm
		Space Inspection Capacity	Inspect Space Availability for Goods
	Good-picking Self-adaptability	Horizontal Adjustment	±100mm
		Angle Adjustment	±10°

AGV

Pallet Mover Forklift



Product Model

VNT20

Safety Protection

Front	Laser Scanner Protection + Anti-Collision Bumper
Rear	Non-Contact Sensors
Top	Photoelectric Sensor & Ultrasound Scan
Side	Laser Scanner Protection + Anti-Collision Bumper
Other	Emergency Stop Switch + Acousto-Optic Alarm + Clearance Lamp

Environmental Requirement

Minimum Stacking Aisle Width, Pallet Size L*W: 1200*1000mm pallet lengthwise	2600mm
Minimum Turning Aisle Width, Pallet Size L*W: 1200*1000mm pallet lengthwise	2100mm
Working Temperature	-5°C -45°C
Working Humidity	20-95%
Ground Flatness	$\pm 5\text{mm/m}^2$
Maximum Climbing Ability	Full-Load/Empty-load
Maximum Groove Width	20mm
Maximum Step Height	10mm

Battery

Type	24V345AH (Lead-Acid) / 24V200AH (Lithium-Iron)
Charging Mode	Manual Charging / Automatic Charging

L-Series VisionNav

Cost-effective equipment for material transfer under 5 meters, especially for **AMR** and robotic arm interaction scenarios.



Product Model

VNL14

VNL16

Fundamental Technical Parameters

Weight		1250KG	1400KG
Dimension	Overall Length/Width/Height (L*W*H)	2133*1134*2000mm	
	Fork Dimension (L*W*H)	1122*180*55mm	
	Width over Forks	580/680mm	
	Width between Forks	200/300mm	
Navigation Type	Positioning Method	Vision-based Navigation	
	Perception Method	Laser Scanning	
Type of Operation		Automatic / Manual Handheld	

Load Capacity and Lifting Height

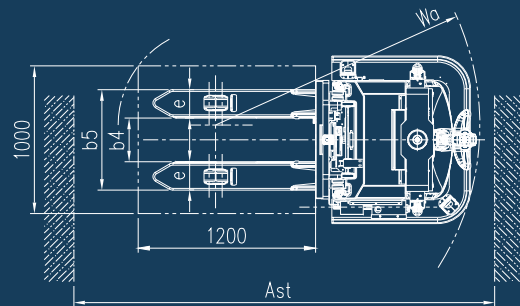
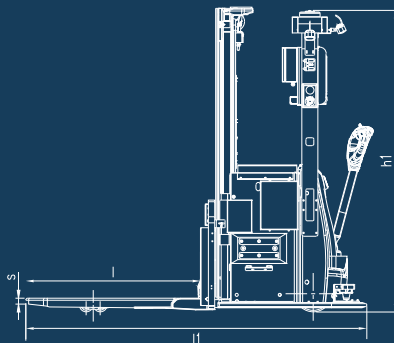
Rated Load Capacity		1400KG	1600KG
Maximum Traction Capacity		/	
Load Center		570mm	
Lifting Height		2924mm	

Motion Performance

Maximum Driving Speed	Straight Forward (<i>fork facing backward</i>) Full-Load/Empty-load		1.5m/s, 1.5m/s
	Straight Backward (<i>fork facing forward</i>) Full-Load/Empty-load		.6m/s, 0.6m/s
Maximum Turning Speed	Turning Forward(<i>fork facing backward</i>) Full-Load/Empty-load		0.3m/s, 0.6m/s
	Turning Backward(<i>fork facing forward</i>) Full-Load/Empty-load		0.3m/s, 0.6m/s
Maximum Fork Moving Speed	Lift Speed Full-Load/Empty-load		160mm/s, 300mm/s
	Lower Speed Full-Load/Empty-load		350mm/s, 400mm/s
Stacking Accuracy			±20mm
Perception Performance	Space Self-adaptability	Good Centered-Placing Accuracy	±20mm
		Space Inspection Capacity	Inspect Space Availability for Goods
	Good-picking Self-adaptability	Horizontal Adjustment	±100mm
		Angle Adjustment	±10°

AGV

Pallet Stacker Forklift



Product Model

VNL14

VNL16

Safety Protection

Front

Laser Scanner Protection + Anti-Collision Bumper

Rear

Non-Contact Sensors

Top

Photoelectric Sensor & Ultrasound Scan

Side

Laser Scanner Protection + Anti-Collision Bumper

Other

Emergency Stop Switch + Acousto-Optic Alarm+Clearance Lamp

Environmental Requirement

Minimum Stacking Aisle Width,
Pallet Size L*W: 1200*1000mm pallet lengthwise

2700mm

Minimum Turning Aisle Width,
Pallet Size L*W: 1200*1000mm pallet lengthwise

2100mm

Working Temperature

-5°C -45°C

Working Humidity

20-95%

Ground Flatness

±5mm/ m²

Maximum Climbing Ability

Full-Load/Empty-load

5%, 5%

Maximum Groove Width

20mm

Maximum Step Height

10mm

Battery

Type

24V345AH (Lead-Acid) / 24V200AH (Lithium-Iron)

Charging Mode

Manual Charging / Automatic Charging

SLIM-Series

VisionNav

Slim design,
best choice to increase storage capacity.



Product Model

VNSL14

Fundamental Technical Parameters

Weight		680KG
Dimension	Overall Length/Width/Height (L*W*H)	1715*1008*1957mm
	Fork Dimension (L*W*H)	1150*170*60mm
	Width over Forks	650mm
	Width between Forks	310mm
Navigation Type	Positioning Method	Vision-based Navigation
	Perception Method	Laser Scanning
Type of Operation		Automatic / Manual Handheld

Load Capacity and Lifting Height

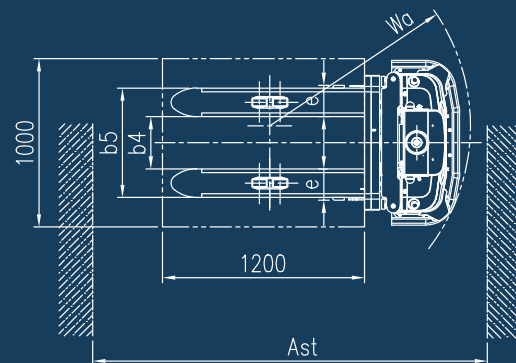
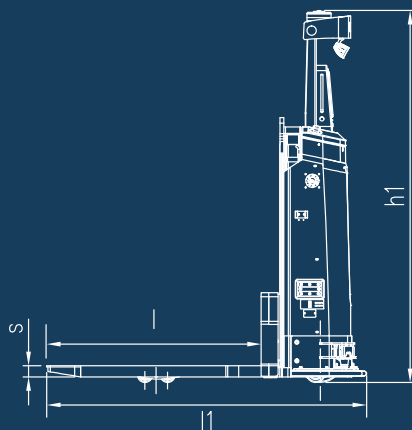
Rated Load Capacity		1400KG
Maximum Traction Capacity		/
Load Center		500mm
Lifting Height		1600mm

Motion Performance

Maximum Driving Speed	Straight Forward (<i>fork facing backward</i>) Full-Load/Empty-load		1.0m/s, 1.3m/s
	Straight Backward (<i>fork facing forward</i>) Full-Load/Empty-load		.6m/s, 0.6m/s
Maximum Turning Speed	Turning Forward(<i>fork facing backward</i>) Full-Load/Empty-load		0.3m/s, 0.6m/s
	Turning Backward(<i>fork facing forward</i>) Full-Load/Empty-load		0.3m/s, 0.6m/s
Maximum Fork Moving Speed	Lift Speed Full-Load/Empty-load		175mm/s, 115mm/s
	Lower Speed Full-Load/Empty-load		125mm/s, 160mm/s
Stacking Accuracy			±20mm
Perception Performance	Space Self-adaptability	Good Centered-Placing Accuracy	±20mm
		Space Inspection Capacity	Inspect Space Availability for Goods
	Good-picking Self-adaptability	Horizontal Adjustment	±100mm
		Angle Adjustment	±10°

AGV

Pallet Stacker Forklift



Product Model

VNSL14

Safety Protection

Front	Laser Scanner Protection + Anti-Collision Bumper
Rear	Non-Contact Sensors
Top	Photoelectric Sensor & Ultrasound Scan
Side	Laser Scanner Protection + Anti-Collision Bumper
Other	Emergency Stop Switch + Acousto-Optic Alarm+Clearance Lamp

Environmental Requirement

Minimum Stacking Aisle Width, Pallet Size L*W: 1200*1000mm pallet lengthwise	2100mm
Minimum Turning Aisle Width, Pallet Size L*W: 1200*1000mm pallet lengthwise	1800mm
Working Temperature	-5°C-45°C
Working Humidity	20-95%
Ground Flatness	±5mm/m ²
Maximum Climbing Ability	Full-Load/Empty-load 5%, 5%
Maximum Groove Width	20mm
Maximum Step Height	10mm

Battery

Type	24V/180AH(Lithium-Iron)
Charging Mode	Manual Charging / Automatic Charging

P-Series

VisionNav

Cost-effective counterbalanced forklift,
suitable for various carriers in different scenarios.



Product Model

VPN15

Fundamental Technical Parameters

Weight		2700KG
Dimension	Overall Length/Width/Height (L*W*H)	2595*1238*2075mm
	Fork Dimension (L*W*H)	1070*100*40mm
	Width over Forks	500mm/730mm
	Width between Forks	280mm/510mm
Navigation Type	Positioning Method	Vision-based Navigation
	Perception Method	Laser Scanning
Type of Operation		Automatic / Manual Handheld

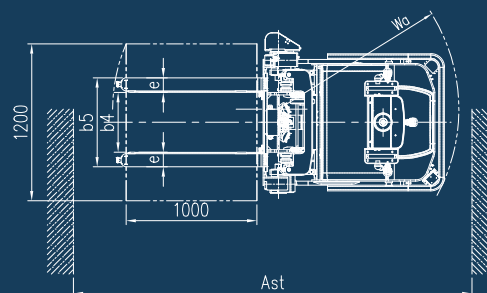
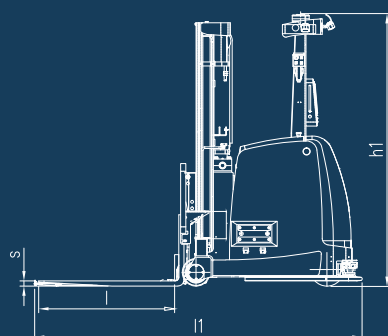
Load Capacity and Lifting Height

Rated Load Capacity		1500KG
Maximum Traction Capacity		/
Load Center		500mm
Lifting Height		3000mm

Motion Performance

Maximum Driving Speed	Straight Forward (<i>fork facing backward</i>) Full-Load/Empty-load		1.3m/s, 1.5m/s
	Straight Backward (<i>fork facing forward</i>) Full-Load/Empty-load		.6m/s, 0.6m/s
Maximum Turning Speed	Turning Forward(<i>fork facing backward</i>) Full-Load/Empty-load		0.3m/s, 0.6m/s
	Turning Backward(<i>fork facing forward</i>) Full-Load/Empty-load		0.3m/s, 0.6m/s
Maximum Fork Moving Speed	Lift Speed Full-Load/Empty-load		50mm/s, 100mm/s
	Lower Speed Full-Load/Empty-load		160mm/s, 180mm/s
Stacking Accuracy			±20mm
Perception Performance	Space Self-adaptability	Good Centered-Placing Accuracy	±20mm
		Space Inspection Capacity	Inspect Space Availability for Goods
	Good-picking Self-adaptability	Horizontal Adjustment	±100mm
		Angle Adjustment	±10°

Counterbalanced Stacker Forklift



Product Model

VPN15

Safety Protection

Front	Laser Scanner Protection + Anti-Collision Bumper
Rear	Non-Contact Sensors
Top	Photoelectric Sensor & Ultrasound Scan
Side	Laser Scanner Protection + Anti-Collision Bumper
Other	Emergency Stop Switch + Acousto-Optic Alarm+Clearance Lamp

Environmental Requirement

Minimum Stacking Aisle Width, Pallet Size L*W: 1200*1000mm pallet lengthwise	3000mm
Minimum Turning Aisle Width, Pallet Size L*W: 1200*1000mm pallet lengthwise	2100mm
Working Temperature	-5°C-45°C
Working Humidity	20-95%
Ground Flatness	±5mm/ m ²
Maximum Climbing Ability	Full-Load/Empty-load
Maximum Groove Width	20mm
Maximum Step Height	10mm

Battery

Type	24V/270AH(Lithium-Iron)
Charging Mode	Manual Charging / Automatic Charging

P-Series

VisionNav

Embedded by different attachments,
specially for non-carrier material handling.



Product Model

VPN15A

Fundamental Technical Parameters

Weight		2800KG
Dimension	Overall Length/Width/Height (L*W*H)	2595*1238*2075mm
	Fork Dimension (L*W*H)	/
	Width over Forks	/
	Width between Forks	/
Navigation Type	Positioning Method	Vision-based Navigation
	Perception Method	Laser Scanning
Type of Operation		Automatic / Manual Handheld

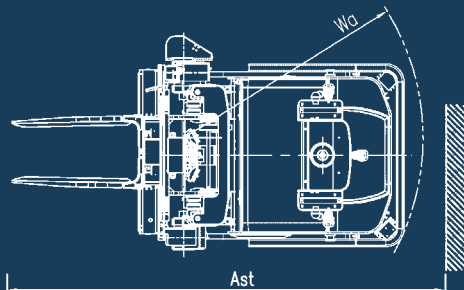
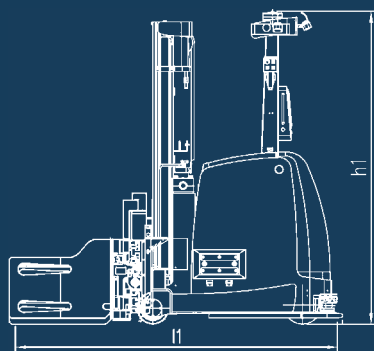
Load Capacity and Lifting Height

Rated Load Capacity		600KG
Maximum Traction Capacity		/
Load Center		500mm
Lifting Height		3000mm

Motion Performance

Maximum Driving Speed	Straight Forward (<i>fork facing backward</i>) Full-Load/Empty-load		1.3m/s, 1.5m/s
	Straight Backward (<i>fork facing forward</i>) Full-Load/Empty-load		.6m/s, 0.6m/s
Maximum Turning Speed	Turning Forward(<i>fork facing backward</i>) Full-Load/Empty-load		0.3m/s, 0.6m/s
	Turning Backward(<i>fork facing forward</i>) Full-Load/Empty-load		0.3m/s, 0.6m/s
Maximum Fork Moving Speed	Lift Speed Full-Load/Empty-load		50mm/s, 100mm/s
	Lower Speed Full-Load/Empty-load		160mm/s, 180mm/s
Stacking Accuracy			±20mm
Perception Performance	Space Self-adaptability	Good Centered-Placing Accuracy	±20mm
		Space Inspection Capacity	Inspect Space Availability for Goods
	Good-picking Self-adaptability	Horizontal Adjustment	±100mm
		Angle Adjustment	±10°

Counterbalanced Stacker Forklift



Product Model

VPN15A

Safety Protection

Front	Laser Scanner Protection + Anti-Collision Bumper
Rear	/
Top	Photoelectric Sensor & Ultrasound Scan
Side	Laser Scanner Protection + Anti-Collision Bumper
Other	Emergency Stop Switch + Acousto-Optic Alarm+Clearance Lamp

Environmental Requirement

Minimum Stacking Aisle Width, Pallet Size L*W: 1200*1000mm pallet lengthwise	3000mm
Minimum Turning Aisle Width, Pallet Size L*W: 1200*1000mm pallet lengthwise	2100mm
Working Temperature	-5°C-45°C
Working Humidity	20-95%
Ground Flatness	±5mm/ m²
Maximum Climbing Ability	Full-Load/Empty-load
Maximum Groove Width	20mm
Maximum Step Height	10mm

Battery

Type	24V/270AH(Lithium-Iron)
Charging Mode	Manual Charging / Automatic Charging

P-Series

VisionNav

Cost-effective, adaptive to various carriers,
wide range of application scenarios.



Product Model

VPN20

Fundamental Technical Parameters

Weight		3300KG
Dimension	Overall Length/Width/Height (L*W*H)	3051*1322*2085mm
	Fork Dimension (L*W*H)	1038*100*40mm
	Width over Forks	680mm
	Width between Forks	456mm
Navigation Type	Positioning Method	3D SLAM
	Perception Method	Laser Scanning
Type of Operation		Automatic / Manual Handheld

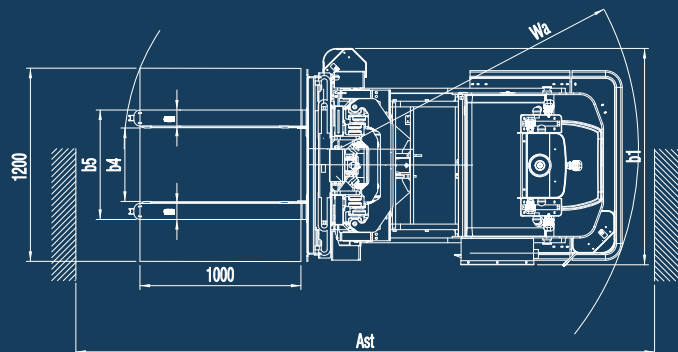
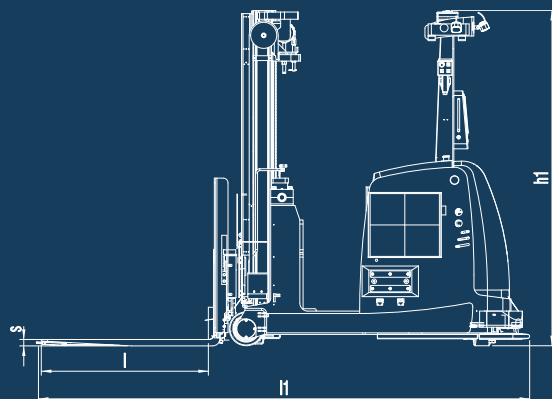
Load Capacity and Lifting Height

Rated Load Capacity		/
Maximum Traction Capacity		/
Load Center		500mm
Lifting Height		/

Motion Performance

Maximum Driving Speed	Straight Forward (<i>fork facing backward</i>) Full-Load/Empty-load		1.3m/s, 1.5m/s
	Straight Backward (<i>fork facing forward</i>) Full-Load/Empty-load		0.6m/s, 0.6m/s
Maximum Turning Speed	Turning Forward(<i>fork facing backward</i>) Full-Load/Empty-load		0.3m/s, 0.6m/s
	Turning Backward(<i>fork facing forward</i>) Full-Load/Empty-load		0.3m/s, 0.6m/s
Maximum Fork Moving Speed	Lift Speed Full-Load/Empty-load		0.1m/s 0.15m/s
	Lower Speed Full-Load/Empty-load		0.15m/s 0.15m/s
Stacking Accuracy			±20mm
Perception Performance	Space Self-adaptability	Good Centered-Placing Accuracy	±10mm/±0.5°
		Space Inspection Capacity	Inspect Space Availability for Goods
	Good-picking Self-adaptability	Horizontal Adjustment	±100mm
		Angle Adjustment	±10°

Counterbalanced Stacker Forklift



Product Model

VPN20

Safety Protection

Front	Laser Scanner Protection
Rear	Laser Scanner Protection + Contact Sensor
Top	3D Laser
Side	Laser Scanner Protection
Other	Emergency Stop Button + Acousto-Optic Alarm + Safety/Warning Light

Environmental Requirement

Minimum Stacking Aisle Width, Pallet Size L*W: 1200*1000mm pallet lengthwise	3600mm
Minimum Turning Aisle Width, Pallet Size L*W: 1200*1000mm pallet lengthwise	2350mm
Working Temperature	-5°C~45°C
Working Humidity	20-95%
Ground Flatness	±5mm/ m²
Maximum Climbing Ability	Full-Load/Empty-load
Maximum Groove Width	30mm
Maximum Step Height	10mm

Battery

Type	24V/270AH(LiFePO ₄)
Charging Mode	Manual Charging / Automatic Charging

E-Series

VisionNav

Stronger ground adaptability
to cope with loading bay and outdoor working conditions.



Product Model

VNE20

Fundamental Technical Parameters

Weight		3200KG
Dimension	Overall Length/Width/Height (L*W*H)	3365*1430*2040mm
	Fork Dimension (L*W*H)	1070*100*40mm
	Width over Forks	680mm
	Width between Forks	460mm
Navigation Type	Positioning Method	Vision-based Navigation
	Perception Method	Laser Scanning
Type of Operation		Automatic / Manual Handheld

Load Capacity and Lifting Height

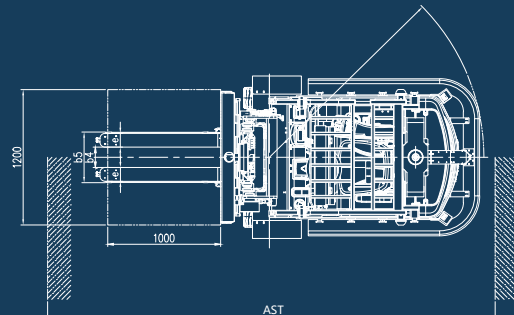
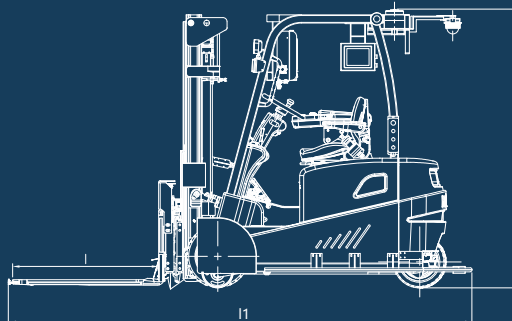
Rated Load Capacity		2000KG
Maximum Traction Capacity		/
Load Center		500mm
Lifting Height		3000mm

Motion Performance

Maximum Driving Speed	Straight Forward (<i>fork facing backward</i>) Full-Load/Empty-load		1.3m/s, 1.5m/s
	Straight Backward (<i>fork facing forward</i>) Full-Load/Empty-load		.6m/s, 0.6m/s
Maximum Turning Speed	Turning Forward(<i>fork facing backward</i>) Full-Load/Empty-load		0.3m/s, 0.6m/s
	Turning Backward(<i>fork facing forward</i>) Full-Load/Empty-load		0.3m/s, 0.6m/s
Maximum Fork Moving Speed	Lift Speed Full-Load/Empty-load		260mm/s, 340mm/s
	Lower Speed Full-Load/Empty-load		380mm/s, 360mm/s
Stacking Accuracy			±20mm
Perception Performance	Space Self-adaptability	Good Centered-Placing Accuracy	±20mm
		Space Inspection Capacity	Inspect Space Availability for Goods
	Good-picking Self-adaptability	Horizontal Adjustment	±100mm
		Angle Adjustment	±10°

AGV

Counterbalance Truck for Indoor & Outdoor



Product Model

VNE20

Safety Protection

Front	Laser Scanner Protection + Anti-Collision Bumper
Rear	Contact Sensor
Top	Laser
Side	Laser Scanner Protection + Anti-Collision Bumper
Other	Emergency Stop Switch + Acousto-Optic Alarm + Clearance Lamp

Environmental Requirement

Minimum Stacking Aisle Width,
Pallet Size L*W: 1200*1000mm pallet lengthwise

3725mm

Minimum Turning Aisle Width,
Pallet Size L*W: 1200*1000mm pallet lengthwise

2450mm

Working Temperature

-10°C-45°C

Working Humidity

20-95%

Ground Flatness

±5mm/m²

Maximum Climbing Ability

Full-Load/Empty-load

13%, 15%

Maximum Groove Width

20mm

Maximum Step Height

10mm

Battery

Type

48V490AH(Lead-Acid) / 48V450AH(Lithium-Iron)

Charging Mode

Manual Charging / Automatic Charging

R-Series VisionNav

Reach truck design,
suitable for various carriers, applied to 9m-high storage.



Product Model

VNR14

VNR16

Fundamental Technical Parameters

Weight		2890KG	2940KG
Dimension	Overall Length/Width/Height (L*W*H)	2590*1583*3376mm	2590*1583*3376mm
	Fork Dimension (L*W*H)	1116*100*45mm	
	Width over Forks	520/690mm	520/710mm
	Width between Forks	300/470mm	300/490mm
Navigation Type	Positioning Method	Vision-based Navigation	
	Perception Method	Laser Scanning	
Type of Operation		Automatic / Manual Handheld	

Load Capacity and Lifting Height

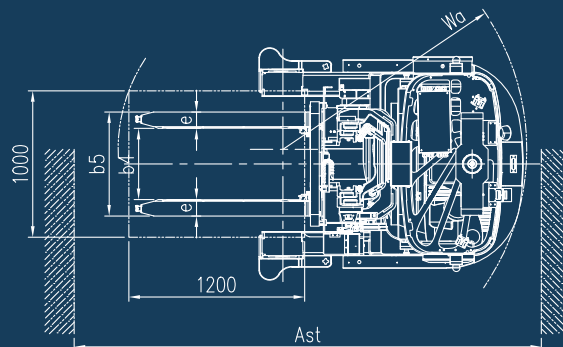
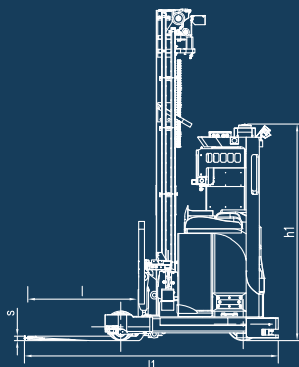
Rated Load Capacity		1400KG	1600KG
Maximum Traction Capacity		/	
Load Center		570mm	
Lifting Height		7255mm	

Motion Performance

Maximum Driving Speed	Straight Forward (<i>fork facing backward</i>) Full-Load/Empty-load		1.5m/s, 1.5m/s	
	Straight Backward (<i>fork facing forward</i>) Full-Load/Empty-load		.6m/s, 0.6m/s	
Maximum Turning Speed	Turning Forward(<i>fork facing backward</i>) Full-Load/Empty-load		0.3m/s, 0.6m/s	
	Turning Backward(<i>fork facing forward</i>) Full-Load/Empty-load		0.3m/s, 0.6m/s	
Maximum Fork Moving Speed	Lift Speed Full-Load/Empty-load		420mm/s, 660mm/s	400mm/s, 660mm/s
	Lower Speed Full-Load/Empty-load		550mm/s, 450mm/s	
Stacking Accuracy			±20mm	
Perception Performance	Space Self-adaptability	Good Centered-Placing Accuracy	±20mm	
		Space Inspection Capacity	Inspect Space Availability for Goods	
	Good-picking Self-adaptability	Horizontal Adjustment	±100mm	
		Angle Adjustment	±10°	

AGV

Heavy-load Reach Truck



Product Model		VNR14	VNR16
Safety Protection			
Front		Laser Scanner Protection + Anti-Collision Bumper	
Rear		Contact Sensor	
Top		Photoelectric Sensor & Ultrasound Scan	
Side		Laser Scanner Protection + Anti-Collision Bumper	
Other		Emergency Stop Switch + Acousto-Optic Alarm+Clearance Lamp	
Environmental Requirement			
Minimum Stacking Aisle Width, Pallet Size L*W: 1200*1000mm pallet lengthwise		3000mm	3100mm
Minimum Turning Aisle Width, Pallet Size L*W: 1200*1000mm pallet lengthwise		2350mm	2400mm
Working Temperature		-5℃-45℃	
Working Humidity		20-95%	
Ground Flatness		±5mm/m²	
Maximum Climbing Ability	Full-Load/Empty-load	5%, 5%	
Maximum Groove Width		20mm	
Maximum Step Height		10mm	
Battery			
Type		48V560AH(Lead-Acid) / 48V400AH(Lithium-Iron)	
Charging Mode		Manual Charging / Automatic Charging	

Q-Series VisionNav

Special for indoor and outdoor,
long-distance, large tonnage material traction.



Product Model

VNQ50

Fundamental Technical Parameters

Weight		950KG
Dimension	Overall Length/Width/Height (L*W*H)	1610*860*2010mm
	Center Height of Traction Pin (L*W*H)	290/345/400mm
	Wheelbase	1050mm
	Width between Forks	/
Navigation Type	Positioning Method	3D SLAM
	Perception Method	/
Type of Operation		Automatic / Manual Seated

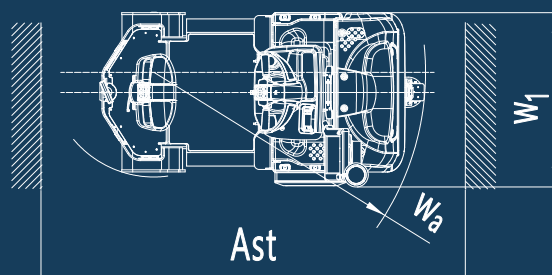
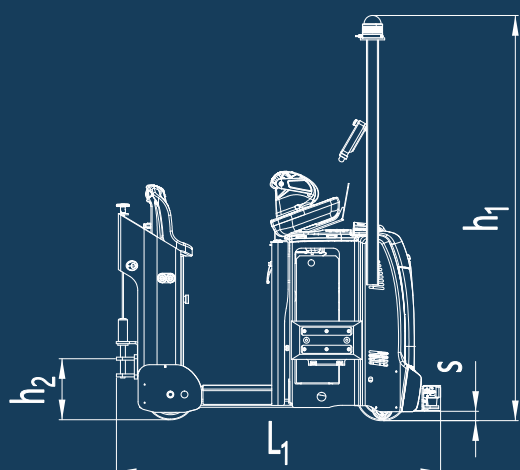
Load Capacity and Lifting Height

Rated Load Capacity		5000KG
Min. Turning Radius(Wa)		1300mm
Rated drawbar pull		1000N
Lifting Height		/

Motion Performance

Maximum Driving Speed	Straight Forward (<i>fork facing backward</i>) Full-Load/Empty-load		2.0m/s, 2.2m/s
	Straight Backward (<i>fork facing forward</i>) Full-Load/Empty-load		0.6m/s
Maximum Turning Speed	Turning Forward(<i>fork facing backward</i>) Full-Load/Empty-load		0.3m/s, 0.6m/s
	Turning Backward(<i>fork facing forward</i>) Full-Load/Empty-load		0.6m/s
Maximum Fork Moving Speed	Lift Speed Full-Load/Empty-load		/
	Lower Speed Full-Load/Empty-load		/
Position Accuracy			±20mm/±1°
Perception Performance	Space Self-adaptability	Good Centered-Placing Accuracy	/
		Space Inspection Capacity	/
	Good-picking Self-adaptability	Horizontal Adjustment	/
		Angle Adjustment	/

Autonomus Tractor



Product Model

VNQ50

Safety Protection			
Front		Primary personnel detection safety system	
Rear		/	
Top		Secondary object 3D laser detection system	
Side		Primary personnel detection safety system	
Standard		ANSI/ITSDF B56.5	ISO 3691-4:2020
		EN 1175:2020 EN	ISO 12100:2010
Other		Emergency Stop Button + Acousto-Optic Alarm	
Environmental Requirement			
Minimum Stacking Aisle Width, Pallet Size L*W: 1200*1000mm pallet lengthwise		3725mm	
Minimum Turning Aisle Width, Pallet Size L*W: 1200*1000mm pallet lengthwise		2450mm	
Working Temperature		-10°C–45°C	
Working Humidity		20-95%	
Ground Flatness		±5mm/m²	
Maximum Climbing Ability	Full-Load/Empty-load	5% 24%	
Maximum Groove Width		30mm	
Maximum Step Height		20mm	
Battery			
Type		24V270Ah(LFP Battery)	
Charging Mode		Manual Charging / Automatic Charging	

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