

ADLER AI

WAREHOUSE ROBOTICS INTEGRATOR

TURNKEY WAREHOUSE AUTOMATION

Less manual handling. Lower labour cost.

We model the economics of robotising your specific warehouse and show you the payback period — before you buy a single machine.

Autonomous mobile robots · Autonomous forklifts · Fleet management · WMS / WCS integration



BUILT FOR OPERATIONS WHERE MOVING GOODS IS EXPENSIVE

Large warehouses

Distribution centres

Manufacturing

Logistics & 3PL

E-commerce

Product & Capability Catalogue | Edition 2026

CONTENTS

01	Who We Are	Integrator positioning, customer, promise	3
02	How a Project Runs	Seven steps from assessment to handover	4
03	What We Deliver	Equipment families and software stack	5
04	Software Systems	RMS · WCS · WMS · Teaching app	6
05	Model Designation	How to read a model code	8
06	Latent Lifting AMR	A-D / A-M series · 500–1 500 kg	10
07	Compact Latent AMR	A-D-S / A-M-S series · low chassis	11
08	Compact Pallet Stacker	A-F...SL series · 1 200–2 000 kg	12
09	Pallet Truck	A-F...P series · 1 500–4 000 kg	13
10	Counterbalance Forklift	A-F...E series · indoor & outdoor	14
11	Reach Truck	A-F...R series · up to 5 755 mm	15
12	Tow Tractor	A-F30G · 3 000 kg towing	16
13	Three-Way Forklift	A-F16T · very narrow aisle	17
14	Peripherals & Modules	Roller, belt, robotic arm, custom	18
15	Industries We Serve	Where the payback is largest	19
16	Services & Support	Project lifecycle and SLA	20
17	Selected Results	Measured outcomes from deployments	21
18	Contact	Start with a free assessment	22

How to use this catalogue

Sections 01 – 05 explain who we are, how a project runs and how to read a model code. Sections 06 – 14 are the equipment datasheets, each with advantages, application scenarios and full specifications. Sections 15 – 18 cover industries, services, measured results and how to book a free site assessment.

01

WHO WE ARE

ADLER AI LLC — warehouse robotics integrator

ADLER AI LLC is a warehouse robotics integrator. We deliver turnkey warehouse automation: the fleet, the software, the interfaces to your WMS and ERP, and the service that keeps it all working after go-live — as one contract with one team accountable for the result.

Our customer is the operations director who is paying too much to move a pallet by hand. Every engagement starts by measuring what that move actually costs today — labour hours, forklift time, damage, overtime, idle equipment. Then we model the economics of robotising that specific site and show you the payback period before you buy a single machine. What you get is a lower cost per pallet moved, a shorter cycle time, and a warehouse that performs the same on the night shift as on the day shift.

THE VALUE LADDER

For large warehouses	where manual material movement is the biggest line in the handling budget
We automate	internal logistics — the moves between dock, storage, line and dispatch
We select	the AMR / forklift AMR / stacker mix that fits your building, vendor-neutral
We reduce	operating cost per pallet moved, and we quantify it before you invest
We design and integrate	the complete system: layout, traffic, charging, safety, WMS and ERP interfaces
We start	with a free site assessment and an ROI model — no commitment required

WHY OPERATORS CHOOSE US

- **Accountable for the outcome, not the shipment.** One contract, one project team, one number to call — from the first measurement on your floor to the day the system runs at target throughput.
- **Vendor-neutral equipment selection.** We work across manufacturers, so we specify the equipment your building needs and can defend that choice with numbers.
- **Business case first.** We model the payback and simulate the material flow before you commit a single euro.
- **Full-scope delivery.** Assessment, design, integration, commissioning, training and service under one roof.
- **Open protocols, no lock-in.** Standard interfaces to your WMS, ERP, MES, PLC, doors and elevators. Your data stays in your systems.

WHO WE WORK WITH

Large warehouses	Where the distance between dock, storage and dispatch turns every pallet into paid labour hours.
Distribution centres	High throughput, fixed aisle geometry and a night shift that has to match the day shift.
Manufacturing	Line-side supply and finished-goods removal, where a late pallet stops the whole line.
Logistics and 3PL	Mixed SKUs, narrow pathways and volume that moves with the contract, not with the building.
E-commerce fulfilment	Peak-driven picking, where headcount is the only lever most operators have left.

The site assessment is free and carries no obligation. We answer four questions: what a pallet move costs you today, what it would cost automated, how long the payback takes, and what to automate first. If the numbers do not justify automation, we will tell you so.

02

HOW A PROJECT RUNS

Seven steps — from free assessment to continuous improvement

01	Free site assessment	We walk your floor, map every move and measure what a pallet move costs you today: labour hours, forklift time, damage, overtime, idle equipment.
02	ROI model & 3D simulation	We simulate your material flow and model the payback. You see the business case before you commit a single euro.
03	Equipment selection	Vendor-neutral choice of AMR, forklift AMR, stacker or tow tractor — sized to your aisles, loads, floor condition and shift pattern.
04	System design	Layout, traffic rules, charging strategy and safety zones, signed off together with your operations and safety teams.
05	Integration	Connected to your WMS and ERP, interfaced to MES, PLC, automatic doors and elevators, then tested under real load.
06	Commissioning & handover	Operator training, spare-parts package, remote monitoring and a 24/7 service level agreement.
07	Continuous improvement	We re-tune the fleet as your volumes change, with a quarterly performance review against the original business case.



Step 01 costs you nothing but an afternoon.

We come to your site, walk the floor with your shift supervisor and leave with the data needed to model the business case. If automation does not pay back, we say so and there is no invoice.

03

WHAT WE DELIVER

One integrated system: equipment, software, interfaces, service

Turnkey intralogistics: autonomous mobile robots, autonomous forklifts and stackers, laser-SLAM navigation, fleet management (RMS), warehouse control (WCS) and warehouse management (WMS) — selected from a vendor-neutral portfolio and integrated as one working system.



The equipment families we deploy — matched to load, aisle width, lift height and duty cycle

EQUIPMENT FAMILIES

Family	Series	Rated load	Typical use
Latent lifting & rotating AMR	A-D / A-M	500 – 1 500 kg	Lifts and rotates racks and trolleys; drives under the load
Compact pallet stacker	A-F...SL	1 200 – 2 000 kg	Narrow-aisle stacking up to 3 000 mm lift height
Pallet truck	A-F...P	1 500 – 4 000 kg	High-volume horizontal transport over long distances
Counterbalance forklift	A-F...E	2 000 – 3 500 kg	Indoor and outdoor duty, uneven surfaces, ramps
Reach truck	A-F...R	1 500 – 2 000 kg	High-bay storage, lift height up to 5 755 mm
Tow tractor	A-F30G	3 000 kg tow	Train operation between production and warehouse
Three-way forklift	A-F16T	1 600 kg	Very narrow aisle from 1.5 m, up to 14.2 m shelf height
Peripheral modules	Roller / belt / arm	Custom	Roller deck, belt conveyor, collaborative robotic arm

TECHNOLOGY BASE

The navigation and scheduling technology we deploy is built on multimode laser-SLAM positioning, backed by more than 70 granted patents across our engineering supply base. We select, configure and integrate it — you get the result without carrying the R&D risk.

±10 mm

Standard docking accuracy

±5 mm

With QR-assisted docking

6–8 h

Continuous operation

2 weeks

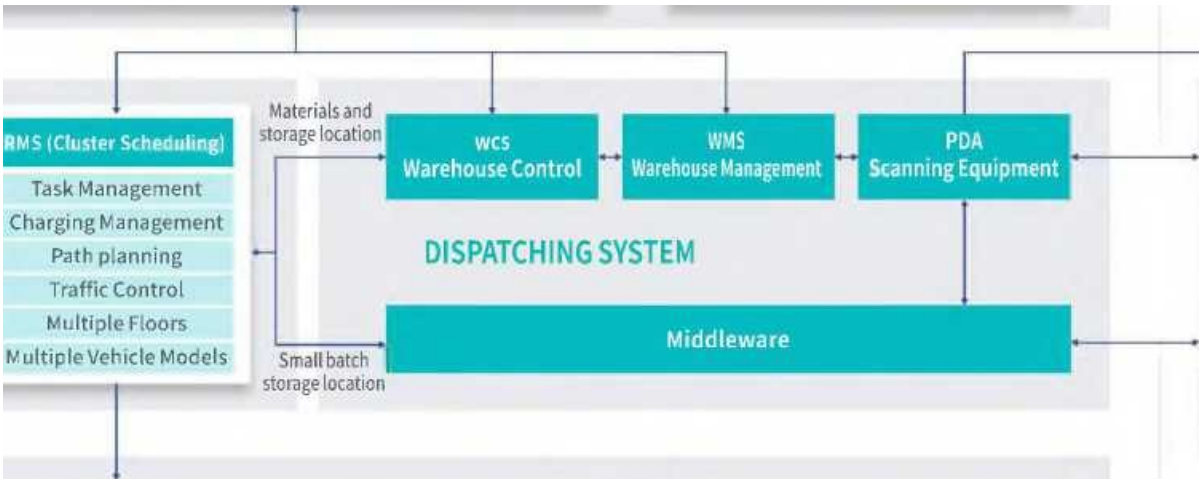
Typical deployment

04

SOFTWARE SYSTEMS

One stack: RMS scheduling · WCS control · WMS management

ADLER AI LLC delivers the full software stack that makes an automated warehouse work: fleet management (RMS), warehouse control (WCS) and warehouse management (WMS), integrated with the ERP you already run. Interfaces are open and standards-based — MES, PLC, automatic doors, elevators and third-party equipment all connect through documented protocols.



System architecture — front-end UI, dispatching layer, on-board system and third-party integrations

ROBOT MANAGEMENT SYSTEM (RMS)

Fleet scheduling and traffic control

- **Flexible avoidance.** Static and dynamic avoidance strategies adjust the path in real time to keep every vehicle moving safely.
- **Mixed fleet operation.** Multiple vehicle models work together in the same area under one scheduler.
- **Optimal path.** Status monitoring, collision detection, dynamic routing, traffic management, standby and restricted zones.



OPEN INTEGRATION

Production systems	MES and PLC handshakes, so the vehicle is called by the process — not by a person.
Building systems	Automatic doors, fire shutters and elevators controlled directly by the scheduler.
Conveyors and stations	Docking stations, lifts and vertical warehouses with confirmed load transfer.
Enterprise systems	WMS and ERP interfaces over documented REST APIs — no proprietary middleware.

04

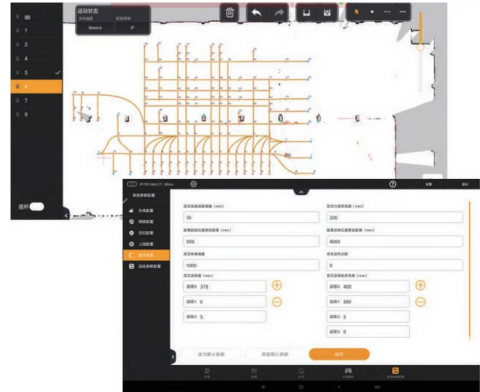
SOFTWARE SYSTEMS

Warehouse management, commissioning tools and open integration

WAREHOUSE CONTROL SYSTEM (WCS)

Equipment control and material flow

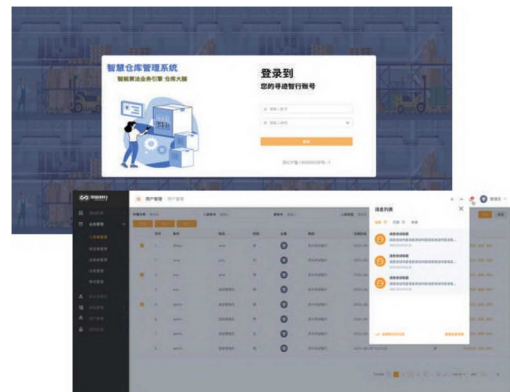
- **Equipment control.** Controls and dispatches every device in the warehouse to automate the material flow.
- **Communication interface.** Exchanges data with third-party equipment and systems for shared, integrated information.
- **Operation monitoring.** Tracks progress and status in real time so exceptions surface immediately.



WAREHOUSE MANAGEMENT SYSTEM (WMS)

Inventory, receipts and task management

- **Standard interface specification.** RESTful, flexible, scalable and easy to maintain.
- **Fast response.** Core interfaces answer concurrent requests within 100 ms.
- **Compatibility.** Backward compatible with third-party integrations.
- **Agile development.** Low-code architecture enables rapid configuration.
- **High reuse rate.** Plug-in implementation for fast integration.
- **3D location visualisation.** Digital twin of the storage locations for new installations.



TEACHING APPLICATION (APP)

On-site commissioning and diagnostics

- **Multi-model compatibility.** Works with every vehicle model; functions, status and parameters adapt automatically.
- **Comprehensive debugging.** Parameter tuning and dynamic validation of sensors, maps, paths and tasks.
- **Real-time monitoring.** Live status, position and operating condition of each AMR for fast fault isolation.

DEPLOYMENT AND DATA

Hosting

On-premise on your own servers, or private cloud — your choice, decided at design stage.

Data ownership

All operational data stays in your systems. No export to third parties, no analytics resale.

User access

Role-based accounts with audit trail; single sign-on against your directory on request.

Updates

Scheduled releases with a staging environment; you approve every production update.

05

MODEL DESIGNATION

How to read an ADLER AI model code

Every model code follows the same five-part logic. Reading it tells you the brand, the vehicle type, the rated load, the series and the navigation or drive option — before you open the datasheet.

A	F	12	SL	LD
Brand	Vehicle type	Rated load	Series	Option

Example: A-F12SL-LD — ADLER AI forklift AMR, 1 200 kg, stacker series, laser-guided

VEHICLE TYPE

- D Differential drive vehicle
- M Omnidirectional vehicle
- F Forklift AMR
- S Sheet-metal non-standard customisation

SERIES

- SL Stacker truck
- P Pallet truck
- G Tow tractor
- R Reach truck
- E Counterbalance forklift
- T Three-way forklift
- S Compact / low chassis

RATED LOAD

10	1000kg
12	1200kg
16	1600kg
20	2000kg
30	3000kg

Load code × 100 kg

PERIPHERAL OPTIONS

- Roller Roller-deck AMR
- Belt Belt-conveyor AMR
- Arm Collaborative robotic-arm AMR
- Custom Customer-specified module

Codes ending in -LD, -MM, -YT, -ZL, -IN and -OUT denote the navigation package and the indoor / outdoor build. Chassis height, peripheral integration and non-standard dimensions are available on request.

05

MODEL DESIGNATION

Full model index — every vehicle in the portfolio

The complete portfolio at a glance. The section column points to the datasheet page with advantages, application scenarios and full specifications for each family.

Model	Vehicle type	Rated load	Max lift height	Section
A-D05 / A-M05	Latent lifting AMR	500 kg	60 mm	06
A-D10 / A-M10	Latent lifting AMR	1 000 kg	60 mm	06
A-D15 / A-M15	Latent lifting AMR	1 500 kg	60 mm	06
A-D05-S / A-M05-S	Compact latent AMR	500 kg	55 mm	07
A-D10-S / A-M10-S	Compact latent AMR	1 000 kg	55 mm	07
A-D15-S / A-M15-S	Compact latent AMR	1 500 kg	55 mm	07
A-F12SL-LD	Compact pallet stacker	1 200 kg	1 844 mm	08
A-F14SL-MM	Compact pallet stacker	1 400 kg	2 500 mm	08
A-F15SL-LD	Compact pallet stacker	1 500 kg	2 344 mm	08
A-F16SL-LD	Compact pallet stacker	1 600 kg	2 844 mm	08
A-F20SL-MM	Compact pallet stacker	2 000 kg	3 000 mm	08
A-F15P-ZL	Pallet truck	1 500 kg	95 mm	09
A-F20P-MM	Pallet truck	2 000 kg	110 mm	09
A-F30P-LD	Pallet truck	3 000 kg	125 mm	09
A-F40P-MM	Pallet truck	4 000 kg	200 mm	09
A-F20E-IN-MM	Counterbalance forklift (indoor)	2 000 kg	3 000 mm	10
A-F20E-IN-YT	Counterbalance forklift (indoor)	2 000 kg	3 000 mm	10
A-F35E-IN-LD	Counterbalance forklift (indoor)	3 500 kg	3 000 mm	10
A-F20E-OUT-MM	Counterbalance forklift (outdoor)	2 000 kg	3 000 mm	10
A-F15R-MM	Reach truck	1 500 kg	2 500 mm	11
A-F16R-LD	Reach truck	1 600 kg	5 755 mm	11
A-F20R-YT	Reach truck	2 000 kg	2 500 mm	11
A-F30G-MM	Tow tractor	3 000 kg tow	—	12
A-F16T-MM	Three-way forklift	1 600 kg	11 200 mm	13

Rated load is the maximum payload; towing capacity for the tow tractor refers to the rolling load on trolleys. Maximum lift height is the top of the standard mast — taller masts are available on request.

Twenty-four models is a lot to choose from. You should not have to.

Tell us the pallet weight, the aisle width and the rack height, and we will shortlist two — then prove which one is cheaper to run with a simulation of your own layout.

LATENT LIFTING & ROTATING AMR

A-D / A-M series · standard chassis · 500 – 1 500 kg



A-D05 / A-M05
A-D10 / A-M10
A-D15 / A-M15



ADVANTAGES

- **Mobility.** Traverses low and narrow spaces; drives underneath racks and trolleys.
- **Application adaptability.** Lifts and rotates over a 60 mm stroke, docking at different heights.
- **Scene adaptability.** Multi-sensor fusion positioning; optional reflector columns and anti-light plates.
- **Easy to maintain.** Modular design with one-click reset.
- **High flexibility.** Carries roller decks, belt conveyors and robotic arms as peripheral mechanisms.

APPLICATION SCENARIOS

- **Logistics centres and warehouses.** Automatic carrying, transport and sorting of goods, raising throughput per shift.
- **Production line supply.** Moves raw material and finished or semi-finished product along the line without an operator.

SPECIFICATIONS

Model	Vehicle size (mm)	Rated load	Lift height	Climbing ability (full / unloaded)	Turning Ø (unloaded)	Motion mode	Running speed
A-D05 / A-M05	950 × 650 × 250	500 kg	60 ± 5 mm	5 % / 10 %	1 151 mm	Differential / dual helm	1.5 m/s
A-D10 / A-M10	980 × 680 × 250	1 000 kg	60 ± 5 mm	5 % / 10 %	1 192 mm	Differential / dual helm	1.5 m/s
A-D15 / A-M15	1 080 × 720 × 250	1 500 kg	60 ± 5 mm	5 % / 10 %	1 298 mm	Differential / dual helm	1.5 m/s

The actual product appearance is subject to the latest technical specification. Peripheral integration, chassis height and non-standard dimensions available on request.

INCLUDED WITH EVERY VEHICLE

Navigation Multimode laser-SLAM on natural features. No floor magnets, tape or QR grid required.	Safety 360° protection field, flexible bumpers, emergency stop and a three-level warning system.	Charging Automatic docking to the charging station; 6–8 hours of continuous operation per cycle.	Integration Scheduled by RMS and interfaced to your WMS, ERP, MES, PLC, doors and elevators.
--	--	--	--

07

COMPACT LATENT AMR

A-D-S / A-M-S series · low chassis · 500 – 1 500 kg



A-D05-S / A-M05-S

A-D10-S / A-M10-S

A-D15-S / A-M15-S



ADVANTAGES

- **Lowest chassis in the range.** 306 mm overall height clears low racking and undercarriage clearances.
- **Light and agile.** From 175 kg self-weight, turning circle from 990 mm in the tightest layouts.
- **Long duty cycle.** 6–8 hours of continuous operation at full load between charges.
- **Repeatable docking.** ± 10 mm positioning accuracy as standard, ± 5 mm with QR-assisted docking.
- **Same software stack.** Runs on the identical RMS scheduler as every other vehicle in your fleet.

APPLICATION SCENARIOS

- **Dense rack storage.** Drives under low shelving where a standard chassis will not fit.
- **Electronics and cleanroom assembly.** Compact footprint for tight production layouts with frequent changeovers.

SPECIFICATIONS

Model	Vehicle size (mm)	Rated load	Lift height	Turning Ø (unloaded)	Operating time (full load)	Self weight	Accuracy
A-D05-S / A-M05-S	850 × 580 × 306	500 kg	55 ± 5 mm	990 mm	6 – 8 h	175 kg ± 5 %	± 10 mm
A-D10-S / A-M10-S	950 × 600 × 306	1 000 kg	55 ± 5 mm	1 050 mm	6 – 8 h	195 kg ± 5 %	± 10 mm
A-D15-S / A-M15-S	990 × 620 × 306	1 500 kg	55 ± 5 mm	1 168 mm	6 – 8 h	225 kg ± 5 %	± 10 mm

The actual product appearance is subject to the latest technical specification. Peripheral integration, chassis height and non-standard dimensions available on request.

INCLUDED WITH EVERY VEHICLE

Navigation	Safety	Charging	Integration
Multimode laser-SLAM on natural features. No floor magnets, tape or QR grid required.	360° protection field, flexible bumpers, emergency stop and a three-level warning system.	Automatic docking to the charging station; 6–8 hours of continuous operation per cycle.	Scheduled by RMS and interfaced to your WMS, ERP, MES, PLC, doors and elevators.

306 mm decides more projects than payload does.

If your existing racking, trolleys or machine bases have limited clearance, chassis height becomes the binding constraint. We measure it on site before recommending a platform.

08

COMPACT PALLET STACKER

A-F...SL series · 1 200 – 2 000 kg · lift to 3 000 mm



A-F12SL-LD · A-F14SL-MM
A-F15SL-LD · A-F16SL-LD
A-F20SL-MM

ADVANTAGES

- **Vertical stacking capacity.** Stacks efficiently in the vertical plane, maximising the cube you already pay rent on.
- **High load-bearing capacity.** Handles heavy pallets up to 2 000 kg without an operator on board.
- **Narrow channel operation.** Designed for restricted aisles and crowded work areas.
- **Adapts to different goods.** Suits varying pallet types, sizes and shapes for flexible deployment.
- **Precise end docking.** Reflector, QR code and code-tape positioning to ± 2 mm; interfaces to machines and vertical warehouses.

APPLICATION SCENARIOS

- **Logistics centres and warehouses.** Automatic put-away, retrieval and replenishment between floor and rack.
- **Production line supply.** Delivers raw material and removes finished product from the line automatically.

SPECIFICATIONS

Model	Vehicle dimensions (mm)	Rated load	Lift height	Climbing ability	Turning Ø (unloaded)	Motion mode	Running speed
A-F12SL-LD	1 750 × 915 × 1 950	1 200 kg	1 844 ± 5 mm	5 %	2 566 mm	Single steering wheel	2.0 m/s
A-F14SL-MM	1 740 × 970 × 1 925	1 400 kg	2 500 ± 5 mm	5 %	2 312 mm	Single steering wheel	1.3 m/s
A-F15SL-LD	1 707 × 864 × 1 960	1 500 kg	2 344 mm	6 %	2 506 mm	Single steering wheel	1.6 m/s
A-F16SL-LD	2 130 × 1 040 × 2 275	1 600 kg	2 844 ± 5 mm	5 %	3 412 mm	Single steering wheel	1.7 m/s
A-F20SL-MM	2 100 × 1 105 × 2 050	2 000 kg	3 000 ± 5 mm	5 %	3 408 mm	Single steering wheel	1.7 m/s

The actual product appearance is subject to the latest technical specification. Peripheral integration, chassis height and non-standard dimensions available on request.

INCLUDED WITH EVERY VEHICLE

Navigation

Multimode laser-SLAM on natural features. No floor magnets, tape or QR grid required.

Safety

360° protection field, flexible bumpers, emergency stop and a three-level warning system.

Charging

Automatic docking to the charging station; 6–8 hours of continuous operation per cycle.

Integration

Scheduled by RMS and interfaced to your WMS, ERP, MES, PLC, doors and elevators.

09

PALLET TRUCK

A-F...P series · 1 500 – 4 000 kg · horizontal transport



A-F15P-ZL · A-F20P-MM
A-F30P-LD · A-F40P-MM

ADVANTAGES

- **Efficient handling.** Moves large volumes over long distances, raising throughput across the whole site.
- **Highest payload in the range.** Up to 4 000 kg on a single vehicle, replacing multiple manual trips.
- **Increased production efficiency.** Accelerates material flow and lifts the overall pace of the production line.
- **Strong adaptability.** Handles different types, sizes and shapes of load without reconfiguration.
- **Long term operation.** Large-capacity battery supports continuous running for up to 8 hours.

APPLICATION SCENARIOS

- **Dock-to-stock and stock-to-dispatch.** The long horizontal moves that consume the most manual forklift hours.
- **Inter-area distribution.** Between production halls, buffer zones and dispatch lanes on the same site.

SPECIFICATIONS

Model	Vehicle dimensions (mm)	Rated load	Lift height	Climbing ability	Turning Ø (unloaded)	Motion mode	Running speed
A-F15P-ZL	1 640 × 935 × 1 955	1 500 kg	95 ± 5 mm	5 %	3 000 mm	Single steering wheel	1.5 m/s
A-F20P-MM	1 685 × 1 015 × 1 910	2 000 kg	110 ± 5 mm	5 %	3 350 mm	Single steering wheel	1.4 m/s
A-F30P-LD	1 988 × 987 × 2 035	3 000 kg	125 mm	10 %	3 640 mm	Single steering wheel	1.6 m/s
A-F40P-MM	2 060 × 1 105 × 1 935	4 000 kg	200 ± 5 mm	5 %	2 400 mm	Single steering wheel	1.4 m/s

The actual product appearance is subject to the latest technical specification. Peripheral integration, chassis height and non-standard dimensions available on request.

INCLUDED WITH EVERY VEHICLE

Navigation	Safety	Charging	Integration
Multimode laser-SLAM on natural features. No floor magnets, tape or QR grid required.	360° protection field, flexible bumpers, emergency stop and a three-level warning system.	Automatic docking to the charging station; 6–8 hours of continuous operation per cycle.	Scheduled by RMS and interfaced to your WMS, ERP, MES, PLC, doors and elevators.

Long horizontal moves are where manual handling costs the most.

They are also the easiest to automate first. In most sites this is the shortest path to a measurable saving — which is why we usually start here.

10

COUNTERBALANCE FORKLIFT

A-F...E series · indoor and outdoor · 2 000 – 3 500 kg



A-F20E-IN-MM · A-F20E-IN-YT
A-F35E-IN-LD · A-F20E-OUT-MM

ADVANTAGES

- **High load-bearing capacity.** Rated to 3 500 kg for large and heavy goods, improving carrying efficiency per trip.
- **All-weather adaptability.** Indoor and outdoor builds; runs on flat warehouse floors and on uneven yard surfaces.
- **Gradient capability.** Up to 16 % climbing ability, so ramps and loading docks are not a constraint.
- **Long term operation.** Large-capacity battery supports up to 8 hours of continuous work.
- **Repeatable docking.** ± 10 mm end precision with automatic error correction at the pick and drop points.

APPLICATION SCENARIOS

- **Yard and dock operations.** Moves between outdoor storage, trailer loading and indoor put-away without a driver.
- **Heavy manufacturing.** Coil, mould, engine and component handling where manual forklifts carry the most risk.

SPECIFICATIONS

Model	Vehicle dimensions (mm)	Rated load	Lift height	Climbing ability	Turning Ø (unloaded)	End precision	Motion mode
A-F20E-IN-MM	2 965 × 1 090 × 2 110	2 000 kg	3 000 ± 5 mm	5 %	3 504 mm	± 10 mm	Differential + steering wheel
A-F20E-IN-YT	2 235 × 1 165 × 3 005	2 000 kg	3 000 ± 5 mm	5 %	3 486 mm	± 10 mm	Single steering wheel
A-F35E-IN-LD	3 870 × 1 350 × 2 500	3 500 kg	3 000 mm	16 %	5 260 mm	± 10 mm	Differential + steering wheel
A-F20E-OUT-MM	3 210 × 1 275 × 2 360	2 000 kg	3 000 ± 5 mm	13 %	3 710 mm	± 10 mm	Differential + steering wheel

The actual product appearance is subject to the latest technical specification. Peripheral integration, chassis height and non-standard dimensions available on request.

INCLUDED WITH EVERY VEHICLE

Navigation

Multimode laser-SLAM on natural features. No floor magnets, tape or QR grid required.

Safety

360° protection field, flexible bumpers, emergency stop and a three-level warning system.

Charging

Automatic docking to the charging station; 6–8 hours of continuous operation per cycle.

Integration

Scheduled by RMS and interfaced to your WMS, ERP, MES, PLC, doors and elevators.

11

REACH TRUCK

A-F...R series · high-bay storage · lift to 5 755 mm



A-F15R-MM · A-F16R-LD · A-F20R-YT

ADVANTAGES

- **Narrow passageway operation.** Passes flexibly through restricted aisles where a counterbalance truck cannot turn.
- **High lifting capacity.** Handles high stacking tasks up to 5 755 mm, improving vertical storage efficiency.
- **Adapts to different terrain.** Runs across different indoor floors and outdoor ground conditions.
- **Fast cycle.** Up to 2.0 m/s travel speed keeps put-away and retrieval cycles short.
- **Precise mast control.** Stable positioning at height, with automatic correction at the rack face.

APPLICATION SCENARIOS

- **High-bay warehouses.** Put-away and retrieval in racking above four metres, day and night shift alike.
- **3PL and distribution centres.** Mixed-SKU storage where aisle width is fixed and cannot be rebuilt.

SPECIFICATIONS

Model	Vehicle dimensions (mm)	Rated load	Lift height	Climbing ability	Turning Ø (unloaded)	Motion mode	Running speed
A-F15R-MM	2 335 × 1 150 × 2 125	1 500 kg	2 500 ± 5 mm	5 %	3 564 mm	Single steering wheel	1.5 m/s
A-F16R-LD	2 470 × 1 390 × 2 550	1 600 kg	5 755 ± 5 mm	5 %	3 550 mm	Single steering wheel	2.0 m/s
A-F20R-YT	2 455 × 1 250 × 2 410	2 000 kg	2 500 ± 5 mm	5 %	4 104 mm	Single steering wheel	1.4 m/s

The actual product appearance is subject to the latest technical specification. Peripheral integration, chassis height and non-standard dimensions available on request.

INCLUDED WITH EVERY VEHICLE

Navigation	Safety	Charging	Integration
Multimode laser-SLAM on natural features. No floor magnets, tape or QR grid required.	360° protection field, flexible bumpers, emergency stop and a three-level warning system.	Automatic docking to the charging station; 6–8 hours of continuous operation per cycle.	Scheduled by RMS and interfaced to your WMS, ERP, MES, PLC, doors and elevators.

Not sure whether you need a reach truck or a stacker?

Aisle width, rack height and pallet weight decide it — not the brochure. We measure all three during the free site assessment and tell you which one is cheaper to run over five years.

TOW TRACTOR

A-F30G series · 3 000 kg towing capacity



A-F30G-MM

ADVANTAGES

- **High towing capacity.** Rated at 3 000 kg, moving several trolleys in one train instead of one pallet per trip.
- **Improves logistics efficiency.** Carries large quantities at up to 1.8 m/s, compressing the milk-run cycle.
- **Flexibility.** Suits different trolley sizes and load types across diverse logistics tasks.
- **Compact footprint.** 1 580 × 980 mm chassis with a 2 530 mm turning circle for tight routes.
- **Fleet-native.** Scheduled by the same RMS as the rest of your vehicles — one traffic model, no islands.

APPLICATION SCENARIOS

- **Milk-run supply.** Repeating tugger routes between warehouse and production stations on a fixed timetable.
- **Inter-building transport.** Trolley trains across long internal distances where individual moves waste hours.

SPECIFICATIONS

Model	Vehicle dimensions (mm)	Rated load	Lift height	Climbing ability (full / unloaded)	Turning Ø (unloaded)	Motion mode	Running speed
A-F30G-MM	1 580 × 980 × 1 850	3 000 kg	—	3 % / 3 %	2 530 mm	Single steering wheel	1.8 m/s

Towing capacity refers to the rolling load on trolleys, not a lifted payload. Coupling type and trolley interface are specified per project.

INCLUDED WITH EVERY VEHICLE

Navigation

Multimode laser-SLAM on natural features. No floor magnets, tape or QR grid required.

Safety

360° protection field, flexible bumpers, emergency stop and a three-level warning system.

Charging

Automatic docking to the charging station; 6–8 hours of continuous operation per cycle.

Integration

Scheduled by RMS and interfaced to your WMS, ERP, MES, PLC, doors and elevators.

THREE-WAY FORKLIFT

A-F16T series · very narrow aisle · shelf height to 14.2 m



A-F16T-MM

ADVANTAGES

- **Extremely narrow aisles.** Operates within 1.5 m of aisle width, cutting typical forklift aisle distance by 55 %.
- **High-density storage.** Supports shelving up to 14.2 m, increasing storage capacity by up to 200 %.
- **Energy efficiency.** 180° side-shifting forks remove the need for steering adjustment at the rack face.
- **Full height accuracy.** 11 200 ± 5 mm lift with stable positioning at the top of the mast.
- **Fast travel.** Up to 2.0 m/s so density does not come at the cost of cycle time.

APPLICATION SCENARIOS

- **Very narrow aisle warehouses.** Existing VNA installations converted to unmanned operation without rebuilding racking.
- **High-value storage.** Where floor area is the binding constraint and going vertical is the only economic answer.

SPECIFICATIONS

Model	Vehicle dimensions (mm)	Rated load	Lift height	Climbing ability (full / unloaded)	Turning Ø (unloaded)	Motion mode	Running speed
A-F16T-MM	3 795 × 1 505 × 6 655	1 600 kg	11 200 ± 5 mm	5 % / 10 %	5 376 mm	Single steering wheel	2.0 m/s

The actual product appearance is subject to the latest technical specification. Peripheral integration, chassis height and non-standard dimensions available on request.

INCLUDED WITH EVERY VEHICLE

Navigation

Multimode laser-SLAM on natural features. No floor magnets, tape or QR grid required.

Safety

360° protection field, flexible bumpers, emergency stop and a three-level warning system.

Charging

Automatic docking to the charging station; 6–8 hours of continuous operation per cycle.

Integration

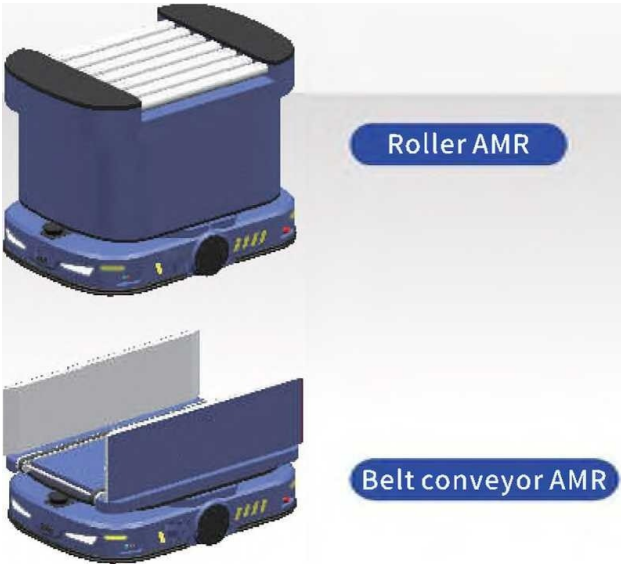
Scheduled by RMS and interfaced to your WMS, ERP, MES, PLC, doors and elevators.

14

PERIPHERALS & MODULES

Turning one chassis into the vehicle your process needs

Every latent-lifting chassis accepts a peripheral module on top. The same fleet, the same scheduler and the same maintenance regime therefore cover a wide range of handling tasks — you standardise on one platform instead of buying a separate machine for every job.



Roller-deck AMR and belt-conveyor AMR



Collaborative robotic-arm AMR

AVAILABLE MODULES

Roller deck	Automatic load transfer to and from conveyors, machines and vertical warehouses without an operator.
Belt conveyor	Handles cartons, totes and light unit loads with controlled acceleration to prevent shifting.
Collaborative robotic arm	Pick-and-place at the point of delivery — the vehicle brings the load and completes the task.
Lifting and rotating deck	60 mm stroke with rotation for docking at different heights and orientations.
Custom sheet-metal module	Non-standard decks, fixtures and chassis heights engineered to your process.

WHY STANDARDISING ON ONE PLATFORM PAYS

- **One spare-parts inventory.** A single chassis family means fewer part numbers on the shelf and shorter downtime.
- **One training programme.** Operators and technicians learn one vehicle, not six.
- **One scheduler.** Every module runs under the same RMS traffic model — no isolated systems to reconcile.
- **Re-deployable assets.** When the process changes, swap the module instead of replacing the vehicle.

1	5+	60 mm	Custom
Chassis platform	Interchangeable modules	Lift and rotate stroke	Non-standard builds

15

INDUSTRIES WE SERVE

Where automated material movement pays back fastest

We work in electronics manufacturing, semiconductor, photovoltaic, automotive parts, new energy, cross-border e-commerce, pharmaceuticals and 3PL — anywhere goods move in volume and labour is the largest line in the material-handling budget.

**PCB & Electronics**

Docking to ± 5 mm; double-deck AMRs carry full pallets up and return empties down.

**Semiconductor & 3C**

Dust-free builds with no static generation, compact chassis for tight layouts.

**Automotive**

Engine, axle, gearbox and chassis component feeding with roller and latent-lift AMRs.

**New Energy & Photovoltaic**

2-tonne forklift AMRs docking to gantry robots and sharing elevators under load.

**Precision Instruments**

Alignment within ± 2 mm and full 360° safety protection around the vehicle.

**Logistics & 3PL**

Narrow-pathway handling with fast cycles in mixed man-and-machine areas.

We stay with the project for its whole life: initial consultation and simulation, application design, on-site testing, commissioning, operations and maintenance support, and system upgrades as your volumes change. One partner, one point of accountability — you never manage the interfaces between vendors yourself.

Consultation & simulation	Free site assessment, material-flow mapping, 3D simulation and the ROI model that justifies the investment.
Application design	Layout, traffic rules, charging strategy, safety zoning and the interface specification to your existing systems.
On-site testing	Commissioning under real load, acceptance testing against the agreed throughput figures.
Operations support	Operator and supervisor training, documented procedures, spare-parts package held locally.
Maintenance	Preventive schedule, remote monitoring and diagnostics, defined response times under SLA.
System upgrades	Fleet re-tuning, capacity expansion and software updates as volumes and layouts change.

SERVICE COMMITMENTS

24 / 7	2 weeks	Local	Quarterly
Support availability	Typical deployment	Spare-parts stock	Performance review

COMPLIANCE

Conformity requirements differ by market and by configuration, so we treat them as part of the project rather than as a catalogue claim. At the quotation stage we confirm in writing which directives and standards apply to your build, which documentation will be supplied, and who carries responsibility for each item. The software stack is integrated under ISO 9001 quality and IEC 27001 information-security practice, and your operational data stays in your systems.

Applicable conformity route for the European Union is confirmed per configuration before order. Ask us for the current status on any model you are considering — we will tell you exactly where it stands.

WHAT STAYS WITH YOU

- **Documentation.** Layout drawings, interface specification, safety assessment and acceptance test records.
- **Training.** Operator, supervisor and first-line maintenance training, delivered on your site with your fleet.
- **Spares.** An agreed critical-spares package held locally, sized to your uptime requirement.
- **Data.** All operational data remains in your systems. No export, no third-party analytics, no lock-in.

Support does not end at handover.

The quarterly review compares live throughput against the business case we signed off together. If the system is not delivering what we modelled, fixing it is our problem — not yours.

17

SELECTED RESULTS

Measured outcomes from deployed installations

The figures below are outcomes recorded on installed systems in the industries we serve. They are indicative — your own numbers come out of the free site assessment and the ROI model, before you commit.

PCB manufacturing

Double-deck roller AMRs carrying full pallets outbound and returning empty pallets on the lower deck; coated rollers and on-board load sensors, with blocking blocks to prevent tray movement under braking.

± 5 mm

Docking accuracy

5 min

One-way transport cycle

3C electronics — cleanroom

Custom chassis and tyres for a dust-free environment, dual-wheel steering for omnidirectional movement, RMS integrated with the plant ERP, 360° safety protection and three-level warning system.

40 %

Efficiency increase

50 %

Labour cost saved

New energy / photovoltaic

A 2-tonne forklift AMR and a 50 kg belt-type AMR under one scheduler, docking automatically with gantry robots and sharing elevators during heavy-duty handling.

20 %

Headcount optimised

100 %

On-time production rate

Cable manufacturing

Compact stacker forklift with custom ultra-wide forks and automatic charging, SLAM navigation on natural features with no floor aids, 3D vision cameras for end-point correction.

40 %

Efficiency increase

100 %

Docking accuracy achieved

Results vary with layout, load profile, shift pattern and the condition of the existing floor. Figures are reported by the operators of the installations concerned.

WHAT THESE PROJECTS HAD IN COMMON

- **The problem was measured first.** Each started with a count of moves and a cost per move — not a robot demonstration.
- **The smallest workable footprint won.** We automated the moves with the worst economics and left the rest alone.
- **The operator kept control.** Open protocols, in-house data and a documented interface specification in every case.

What does a pallet move cost you today?

Most operations cannot answer that question with a number. We can — in one visit, at no cost, with no obligation. You receive a written material-flow assessment, a simulation of the automated layout and an ROI model you can take to your board.

WHAT YOU GET FROM THE ASSESSMENT

- **Material-flow map.** Every move on your site, with distance, frequency and current cost per move.
- **Automation scenario.** A 3D simulation of the proposed layout, fleet size and throughput.
- **Investment and payback.** Capital cost, running cost and payback period, modelled against your real volumes.
- **Phasing plan.** What to automate first for the fastest return, and what can wait.

ADLER AI LLC

Warehouse automation integration
Design · Integration · Service

Get in touch

E-mail: 9280365@gmail.com
Subject line: Free warehouse assessment

TYPICAL TIMELINE

Week 0

Site visit and material-flow measurement

Week 1-2

Simulation, equipment selection and ROI model delivered

Week 3

Proposal and phasing plan reviewed with your team

Week 4+

Design freeze, order, integration and commissioning

ADLER AI

LESS MANUAL HANDLING · LOWER COST PER PALLET