

Ergonomics: new operating concept for greater adjustability of the operator console.

Intelligence: RFID technology as standard for easy system integration and future-proof assurance.

Efficiency: New AC motors ensure optimum performance with low energy consumption.

Flexibility: A choice of performance packages and assistance systems for optimised performance.

Technology leader: Innovative system for vibration damping (optional) for improved safety and performance on uneven surfaces.



EKV 514/516k/516

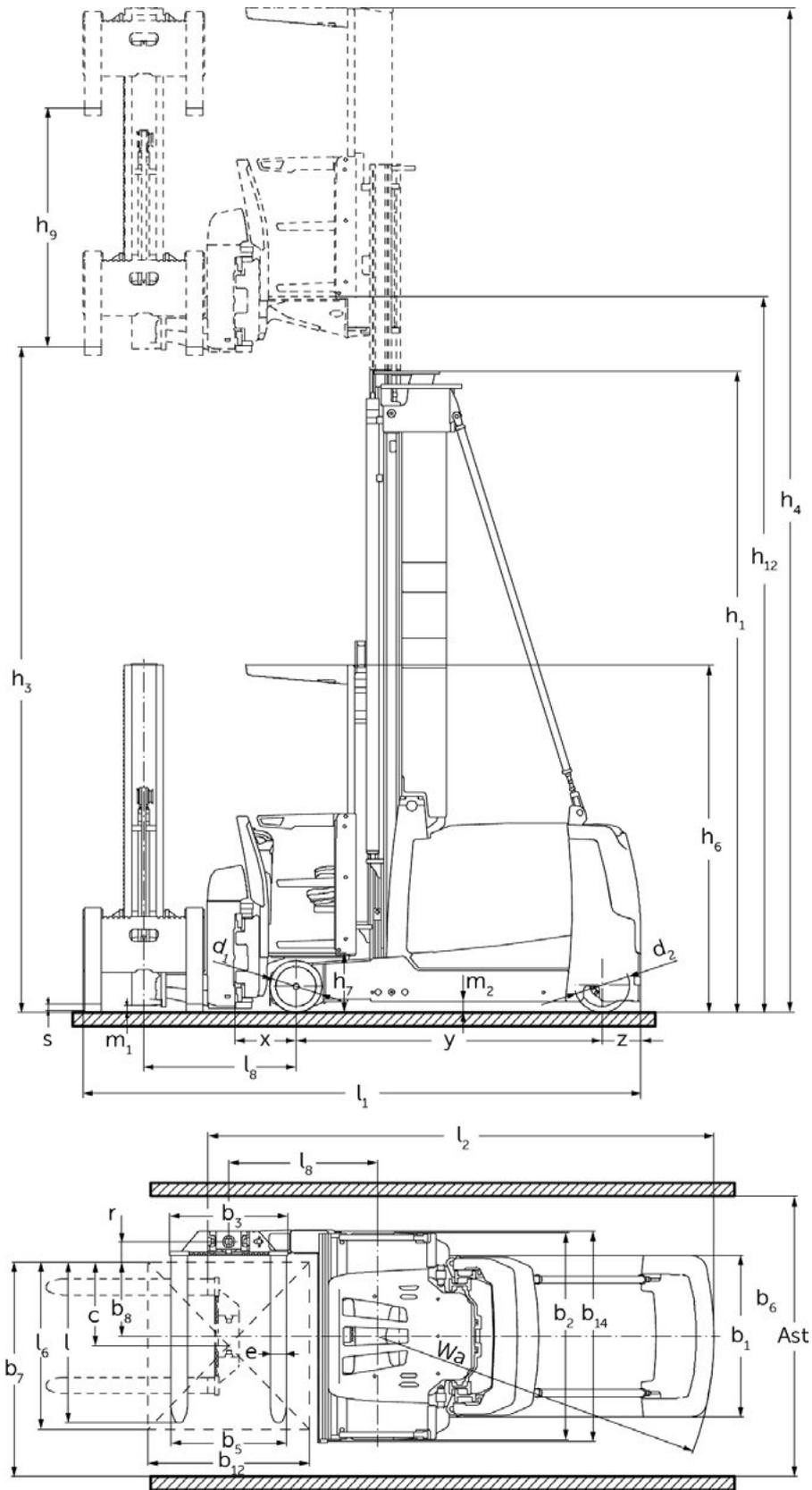
Electric order picker/tri-lateral stacker (1,400/1,600 kg)

Our EKV has been the industry benchmark for years. We go one step further with the new vibration damping and offer you more safety and performance – even on uneven surfaces. The maintenance-free AC drive will open up new dimensions of performance for you, reducing lost energy by 10 per cent. With top performance and minimal energy consumption, the EKV can work for two shifts without a battery change, even in demanding applications, handling more pallets per hour due to longer operating time capability.

Advanced RFID tracking increases flexibility and adapts travel speeds optimally to your warehouse topology. The EKV is your reliable partner for manual, semi-automatic or fully automatic applications. Our Warehouse Navigation also prevents stacking

errors and increases throughput by up to 25 per cent. Whatever challenges you face in the future, the system will remain flexible and prepared for everything. With our new modular performance and assistance packages you can adapt the truck characteristics optimally to a wide variety of applications at any time. The new Sideshift Plus system also gives you more options to handle different pallet sizes. The 100 kg increase in basic rated capacity enables more capacity at higher lift heights than its predecessor. The generously dimensioned workstation is optimally designed for the operator. It offers more freedom of movement, optimum visibility and an electrically adjustable control panel for relaxed and concentrated working and greater productivity.

EKX 514/516k/516



Technical data in line with VDI 2198

			Jungheinrich			
			EKX 514	EKX 516k	EKX 516	
Identification	1.1	Manufacturer (abbreviation)	Jungheinrich			
	1.2	Model	EKX 514	EKX 516k	EKX 516	
			Rail-guided			
	1.3	Drive	Electric			
	1.4	Manual, pedestrian, stand-on, seated, order picker operation	order picker tri-lateral stacker			
	1.5	Load capacity/rated load	Q t	1.4	1.6	1.6
	1.6	Load centre distance	c mm	600		
	1.8	Load distance	x mm	445		
	1.9	Wheelbase	y mm	1,840	1,950	2,220
	1.10	Centre of drive wheel/counterweight	z mm	282		
Weights	2.1.1	Net weight incl. battery (see row 6.5)	kg	6,350	6,750	7,900
	2.2	Axle load with load front/rear	kg	5,720 / 1,880	6,190 / 2,060	6,590 / 2,810
	2.3	Axle load without load front/rear	kg	3,850 / 2,500	3,980 / 2,770	4,480 / 3,420
Wheels / frame	3.1	Tyres	Besthane			
	3.2	Tyre size, front	mm	Ø 380 x 192		
	3.3	Tyre size, rear	mm	Ø 400 x 160		
	3.5	Wheels, number front/rear (x = driven wheels)		2 / 1x		
	3.6	Tread width, front	b ₁₀ mm	1,258		
	Basic dimensions	4.2	Mast height (lowered)	h ₁ mm	2,955	
4.4		Lift	h ₃ mm	3,500		
4.5		Extended mast height	h ₄ mm	6,050		
4.7		Height of overhead guard	h ₆ mm	2,550		
4.8.1		Standing height	h ₇ mm	430		
4.11		Auxiliary lift	h ₉ mm	1,780		
4.14		Standing height raised	h ₁₂ mm	3,930		
4.19.2		Total length (without load)	mm	3,665	3,775	4,045
4.20		Length to face of forks	l ₂ mm	3,379	3,489	3,759
4.21		Overall width	b ₁ /b ₂ mm	1,210 / 1,450		
4.22		Fork dimensions	s/e/l mm	50 / 120 / 1,200		
4.23		Fork carriage ISO 2328, class/type A, B		2B		
4.24		Fork carriage width	b ₃ mm	880		
4.25		Width across forks	b ₅ mm	856		
4.29		Reach, sideways	mm	1,300		
4.30		Reach, sideways from centre of truck	mm	480		
4.31		Floor clearance with load under mast	m ₁ mm	80		
4.32		Ground clearance, centre of wheelbase	m ₂ mm	80		
4.33.6		Aisle width for pallets 1200 x 1200	A _{st} mm	1,640		
4.35		Turning radius	W _a mm	2,122	2,232	2,502
4.38		Distance swivelling fork pivot point	mm	1,103		
4.38.1		Total lift	mm	5,280		
4.38.2		Order picking height	mm	5,530		
4.38.3		distance swivelling forks pivot-point to steering rack	mm	658		
4.38.4		Pallet width	mm	1,200		
4.38.5		Pallet length	mm	1,200		
4.38.6		Clear width of operator entrance	mm	490		
4.38.7	Inner clear height of operator compartment	mm	2,100			
4.38.8	Outer width of operator compartment	mm	1,440			
4.38.9	Width of swivel reach frame	mm	1,440			
4.38.10	Wide jib	mm	172			
4.38.11	Distance swivelling forks pivot-point to back of forks	mm	154			
Performance data	5.1	Travel speed, laden/unladen	km/h	10.5 / 10.5	12 / 12 ³⁾	12 / 12 ³⁾
	5.2	Lift speed, laden/unladen	m/s	0.45 / 0.45	0.6 / 0.6 ²⁾	0.6 / 0.6 ²⁾
	5.3	Lowering speed, laden/unladen	m/s	0.5 / 0.5		
	5.4	Traverse speed w. / w.o. load	m/s	0.4 / 0.5 ¹⁾		
	5.10	Service brake		regenerative		
	5.11	Parking brake		electric spring-loaded		
Electrics	6.1	Drive motor, output S2 60 min.	kW	9.0		
	6.2	Lift motor, output at S3 15%	kW	25.0		
	6.3	Battery as per DIN 43531 / 35/36 A, B, C, no		3 PzS 465	4 PzS 620	6 PzS 930
	6.4	Battery voltage/nominal capacity K5	V/Ah	80 / 465	80 / 620	80 / 930
	6.5	Battery weight	kg	1,238	1,558	2,178
Misc.	8.1	Type of drive control		AC Control		
	8.4	Sound pressure level at operator's ear as per EN 12053	dB (A)	64		
	8.6	Steering		electric		

¹⁾ With performance package (standard 0.4 / 0.4)

²⁾ With performance package (standard 0.5 / 0.5)

³⁾ With performance package (standard 10.5 / 10.5)

EKX 514/516k/516

Standard values for working aisle widths (mm)						
with rail guidance						
Pallet size [mm]	Stacking depth	Ast	Ast3 / VDI theoretical			Ast* practical
			EKX 514	EKX 516k	EKX 516	
1200 x 800	1200	1640	3608	3708	4004	+500
1200 x 1200	1200	1640	3967	4067	4363	+500
800 x 1200	800	1440	3971	4071	4367	+500

** The practical intersecting aisle width is a guide value.

with wire guidance						
Pallet size [mm]	Stacking depth	Ast	Ast3 / VDI theoretical			Ast* practical
			EKX 514	EKX 516k	EKX 516	
1200 x 800	1200	1720	3834	3934	4230	+1000
1200 x 1200	1200	1720	4221	4321	4617	+1000
800 x 1200	800	1490	4034	4134	4430	+1000

** The practical intersecting aisle width is a guide value.

EKX 514/516k/516

Standard mast designs EKX 514/516k/516																
	Lift h ₃ (mm)	Lowered mast height h ₁ (mm)			Free lift h ₂ (mm)			Extended mast height h ₄ (mm)			Overall height h ₃ + h ₉ (mm)			Order picking height h ₁₅ (mm)		
		EKX 514	EKX 516k	EKX 516	EKX 514	EKX 516k	EKX 516	EKX 514	EKX 516k	EKX 516	EKX 514	EKX 516k	EKX 516	EKX 514	EKX 516k	EKX 516
Duplex ZT	3000	2705	2705	2705	-	-	-	5550	5550	5550	4780	4780	4780	5030	5030	5030
	3500	2955	2955	2955	-	-	-	6050	6050	6050	5280	5280	5280	5530	5530	5530
	4000	3205	3205	3205	-	-	-	6550	6550	6550	5780	5780	5780	6030	6030	6030
	4500	3455	3455	3455	-	-	-	7050	7050	7050	6280	6280	6280	6530	6530	6530
	5000	3705	3705	3705	-	-	-	7550	7550	7550	6780	6780	6780	7030	7030	7030
	5500	3955	3955	3955	-	-	-	8050	8050	8050	7280	7280	7280	7530	7530	7530
	6000	4205	4205	4205	-	-	-	8550	8550	8550	7780	7780	7780	8030	8030	8030
	6500	4555	4555	4555	-	-	-	9050	9050	9050	8280	8280	8280	8530	8530	8530
	7000	4805	4805	4805	-	-	-	9550	9550	9550	8780	8780	8780	9030	9030	9030
	7500	5055	5055	5055	-	-	-	10050	10050	10050	9280	9280	9280	9530	9530	9530
	8000	5305	5305	5305	-	-	-	10550	10550	10550	9780	9780	9780	10030	10030	10030
	8500	5655	5655	5655	-	-	-	11050	11050	11050	10280	10280	10280	10530	10530	10530
	9000	5905	5905	5905	-	-	-	11550	11550	11550	10780	10780	10780	11030	11030	11030
9500	6155	6155	6155	-	-	-	12050	12050	12050	11280	11280	11280	11530	11530	11530	
10000	-	6405	6405	-	-	-	-	12550	12550	-	11780	11780	-	12030	12030	
10500	-	6655	6655	-	-	-	-	13050	13050	-	12280	12280	-	12530	12530	
Triplex DZ	4000	2550	2550	2550	-	-	-	6550	6550	6550	5780	5780	5780	6030	6030	6030
	4500	2710	2710	2710	160	160	160	7050	7050	7050	6280	6280	6280	6530	6530	6530
	5000	2895	2895	2895	345	345	345	7550	7550	7550	6780	6780	6780	7030	7030	7030
	5500	3095	3095	3095	545	545	545	8050	8050	8050	7280	7280	7280	7530	7530	7530
	6000	3295	3295	3295	745	745	745	8550	8550	8550	7780	7780	7780	8030	8030	8030
	6500	3495	3495	3495	945	945	945	9050	9050	9050	8280	8280	8280	8530	8530	8530
	7000	3695	3695	3695	1145	1145	1145	9550	9550	9550	8780	8780	8780	9030	9030	9030
	7500	3895	3895	3895	1345	1345	1345	10050	10050	10050	9280	9280	9280	9530	9530	9530
	8000	4095	4095	4095	1545	1545	1545	10550	10550	10550	9780	9780	9780	10030	10030	10030
	8500	4295	4295	4295	1745	1745	1745	11050	11050	11050	10280	10280	10280	10530	10530	10530
	9000	4495	4495	4495	1945	1945	1945	11550	11550	11550	10780	10780	10780	11030	11030	11030
	9250	4595	4595	4595	2045	2045	2045	11800	11800	11800	11030	11030	11030	11280	11280	11280
	9500	4695	4695	4695	2145	2145	2145	12050	12050	12050	11280	11280	11280	11530	11530	11530
	10000	-	4875	4875	-	2325	2325	-	12550	12550	-	11780	11780	-	12030	12030
	10500	-	5045	5045	-	2495	2495	-	13050	13050	-	12280	12280	-	12530	12530
	11000	-	-	5215	-	-	2665	-	-	13550	-	-	12780	-	-	13030
	11500	-	-	5395	-	-	2845	-	-	14050	-	-	13280	-	-	13530
	12000	-	-	5565	-	-	3015	-	-	14550	-	-	13780	-	-	14030
	12500	-	-	5750	-	-	3200	-	-	15050	-	-	14280	-	-	14530
	13000	-	-	5950	-	-	3400	-	-	15550	-	-	14780	-	-	15030
13500	-	-	6250	-	-	3700	-	-	16050	-	-	15280	-	-	15530	
14000	-	-	6550	-	-	4000	-	-	16550	-	-	15780	-	-	16030	
14500	-	-	6850	-	-	4300	-	-	17050	-	-	16280	-	-	16530	

EKX 514/516k/516



EKX standard equipment

- Sprung comfort seat with adjustable armrests. Height, tilt and longitudinal adjustment. Can be folded for standing or seated operation.
- Spacious, ergonomic cab with low entry/exit step.
- Control panel with electrically adjustable height/tilt and capacitive two-handed recognition.
- Graphics-compatible colour display for truck status and service information, for example the digital capacity chart. High level of flexibility thanks to soft key controls.
- Panoramic window made of safety glass for protection against draughts with a clear view of the forks.
- Upholstered knee supports with integrated storage space.
- Comfort package with efficient LED lighting for the cabin, rack face lighting and good ventilation.
- Electronic power-assisted steering for effortless, precise manoeuvring.
- Simultaneous lifting and lowering of main/additional lift saves time through simultaneous movements.
- Sideshift with additional lift (additional lift is 1780 mm).
- Patented regenerative lowering and braking for maximum energy recovery during operation.
- Electro-magnetic spring-loaded brake on load and drive wheel.
- Active energy and battery management.
- Battery rollers for quick battery change (optional).
- Non-contact two-hand control for reliable operation in narrow aisles.
- Two-channel, redundant computer system (master and safe).
- Diagonal travel with speed profiles dependent on travel direction.
- RFID-controlled system for safety switches.
- Jungheinrich CurveControl for reliable speed reduction when cornering.
- TÜV-certified CAN-Bus system; reliable data transfer and high flexibility.
- Two RFID readers for zone detection and positioning in narrow aisles.
- Integrated on-board diagnostics system for targeted service.

EKX 514/516k/516



EKX optional equipment

- Air-cushioned driver's seat with optimum cushioning properties.
- "Comfort Plus" driver's seat with lumbar support and heating.
- Cabin heating
- Enclosed cab in the glass version (as comfort solution for chill store).
- "Stack by light" stacking spotlights.
- "Pick by light" picking spotlights with display of the picking direction.
- Synchronised swivelling in or outside the aisle (automatic process).
- Modular storage system with integrated drink holder.
- Overhead guard height up to 2,200 mm for more headroom.
- Rail guidance as a guidance system for high travel speeds in aisles.
- Inductive guidance system with automatic guide wire search for convenient alignment.
- Sideshift with additional lift from 2,000 to 3,000 mm.
- Symmetrical fork positioner for lifting loads of different sizes.
- Asymmetrical fork positioner for adjusting to load size and sideshift for comfortable picking.
- Modular telescopic forks in various designs as standard or flat design.
- Jungheinrich logistics interface – the easy middleware for connecting to your Warehouse Management System.
- Jungheinrich radio data terminals with electrical interfaces for the Warehouse Management System.
- Jungheinrich barcode scanner including holder on the railing or overhead guard.
- Jungheinrich Information System for Truck Management (ISM Online).
- EasyAccess system for easy access via softkey, PIN code or transponder.
- "Drive Plus" performance package for increased travel speed.
- "Lift Plus" performance package for increased lift speed.
- "Speed Profile Plus" performance package for weight-based optimisation of the speed profiles.
- "Capacity Plus" performance package to increase the residual carrying capacity.
- "Floor Pro" performance package with system for vibration damping.
- "Sideshift Plus" performance package with an additional reach distance of +100 mm.
- "Position Control" assistance system for semi-automated operation of the lift height.
- "Warehouse Navigation" assistance system for semi-automatic target approach.
- "Auto-ID" assistance system for automatic load identification.
- "Operation Control" assistance system with display of the load weight on the screen.
- "PPS Standard" assistance system and "PPS plus" assistance system with integrated personal protection systems.
- "PPS Anti Collision" assistance system with integrated personal protection and collision avoidance system for the use of multiple vehicles at the same time.
- "Floor-spot" assistance system as a visual warning signal for pedestrians.

Benefit from the advantages

Ergonomics

- Comfortable and fast entering and exiting through the lowest entry step in its class.
- Generous space for ample freedom of movement. Increase in cabin depth and height (optional).
- Large panoramic window with optimum view of fork tips for reliable lifting of loads.
- Control panel with electrically adjustable height/tilt for optimum operating position.
- Upholstered knee supports with integrated storage space for comfortable picking.
- Relaxed sitting and comfortable standing with sprung, adjustable and foldable comfort seat.
- Large colour display with all the important information available at a glance.
- Modular storage and holder system (optional).

Intelligent stacking

- RFID technology for truck positioning in narrow aisles.
- Inductive guidance with multi-frequency control.
- In-aisle travel distance and height measuring.
- Active reach control and correction of the mast backward tilt.
- Warehouse navigation with precise approach and automatic stacking.
- Load handling by sideshift or telescopic forks.

Maximum efficiency

- New motor technology: AC drives cut energy loss in half, allowing for even longer operating times.

- Double energy recovery during braking and lowering with maximum effectiveness due to patented hydraulic valve technology.
- Compact hydraulics with short distances and lower resistance for less energy consumption.
- Compactly electronics means fewer cables and plugs and all components (motors, controllers and software) optimally matched.
- Active battery and energy management reduces peak currents and reduces the load on the battery and components.
- High-performance capability lasting two shifts without battery change

Flexibility

- With our optional modular performance packages you can be equipped for every application.
- Modular performance packages offer the optimum adaptation to your operating requirements.
- Various assistance systems increase process reliability and safe time in pallet handling.

Optional performance package:

"Floor Pro"

- Innovative system for vibration damping.
- Reduces swaying of the truck from side to side.
- Smoother and faster driving on uneven surfaces.

Optional performance package "Sideshift Plus"

- Active "Sideshift Plus" (optional) extends the reach distance 100 mm and makes it possible to handle different load sizes.

Optional assistance system: "Warehouse Navigation"

- Up to 25 % higher throughput in narrow aisles.
- Easy to set up a connection from the EKX to your Warehouse Management System with the Jungheinrich logistics interface.
- Target position is transferred direct to the truck control system.
- Automatic vertical positioning.
- Automatic horizontal position control system.
- Automatic stacking operation.
- Effective twin cycles.
- Automatic confirmation to the Warehouse Management System increases process reliability and saves time. The security scan is eliminated.
- Maximum flexibility in the warehouse, as the existing Warehouse Management Systems can be modified to cater for warehouse extensions.

Commissioning and maintenance

- Quick and reliable commissioning through teach-in process.
- The integrated diagnostic system allows for fast and accurate fault diagnosis.
- 1000 operating hours maintenance interval for high truck availability.
- Maintenance-free AC motors and wear-free sensor systems ensure a high level of operational safety and reliability.

Jungheinrich Aktiengesellschaft

Friedrich-Ebert-Damm 129
D-22047 Hamburg
Telephone +49 40 6948-0
Telefax +49 40 6948-1777

info@jungheinrich.com
www.jungheinrich.com

The German production facilities in Norderstedt, Moosburg and Landsberg are certified. **ISO 9001**
ISO 14001

Jungheinrich fork lift trucks meet European safety requirements.



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