

Warehouse navigation system (optional) for optimised travelling time to the specific destination

Double benefits of energy regeneration and effective energy management

High flexibility through modular design and RFID technology

TÜV-certified control system

48 Volt 3-phase technology for high acceleration

Ergonomic workplace with height-adjustable operator controls



EKS 210/EKS 312

Vertical order picker (1000 kg/1200 kg)

The EKS 210/312 order pickers offer highest picking performance in the high-rack warehouse. Both truck concepts are optimised for their respective application. The EKS 210 with 1000 kg load capacity and order picking heights up to 7845 mm is specially designed for manoeuvrability in wide aisles. Its narrow chassis size of just 900 mm offers the maximum turning capability. The EKS 312 with 1200 kg load capacity and order picking heights up to 11,345 mm offers high throughput performance. Both order pickers set new standards in respect of flexibility, economic efficiency and ergonomics:

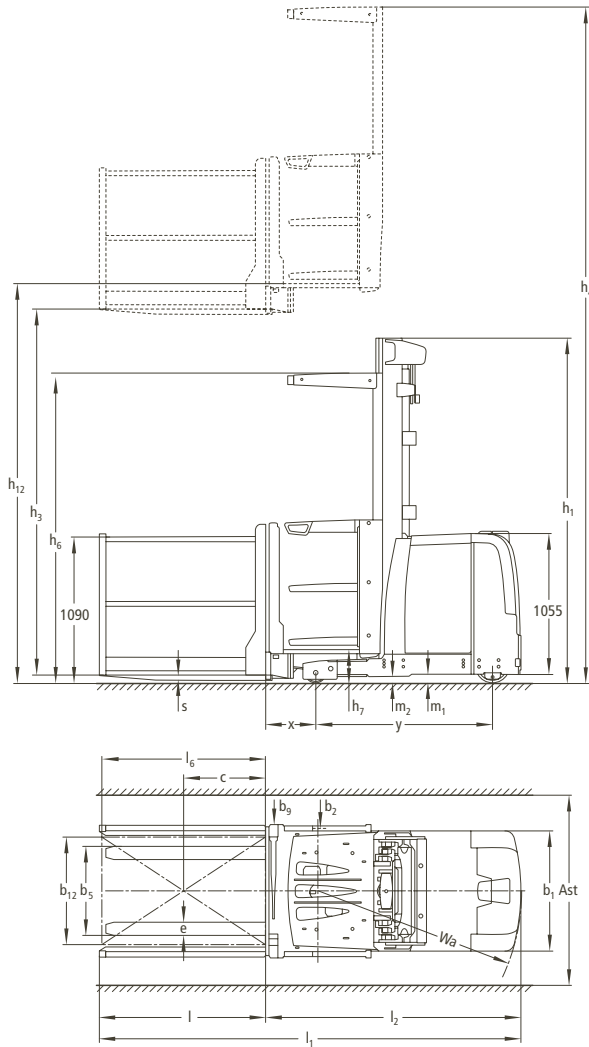
- The Jungheinrich modular system offers flexibility and a multitude of options for future customisation. These include modular load-bearing components such as platforms, walk-on load sections or auxiliary masts. Further options include an "adaptor system" for flexible choice of cabin widths and electronic height limitations for the masts.
- With the integrated warehouse navigation system (optional), the control computer on the EKS communicates directly with the Warehouse Management System (WMS). The truck can be driven to the destination under semi-automatic control. The operation is com-

fortable for the operator, movement errors are avoided, productivity and picking quality are significantly improved. The 48 Volt 3-phase technology ensures strong acceleration and high lifting speeds with unrivalled low power consumption. The advantage: full availability over 2 shifts in normal operation without the need to change the battery.

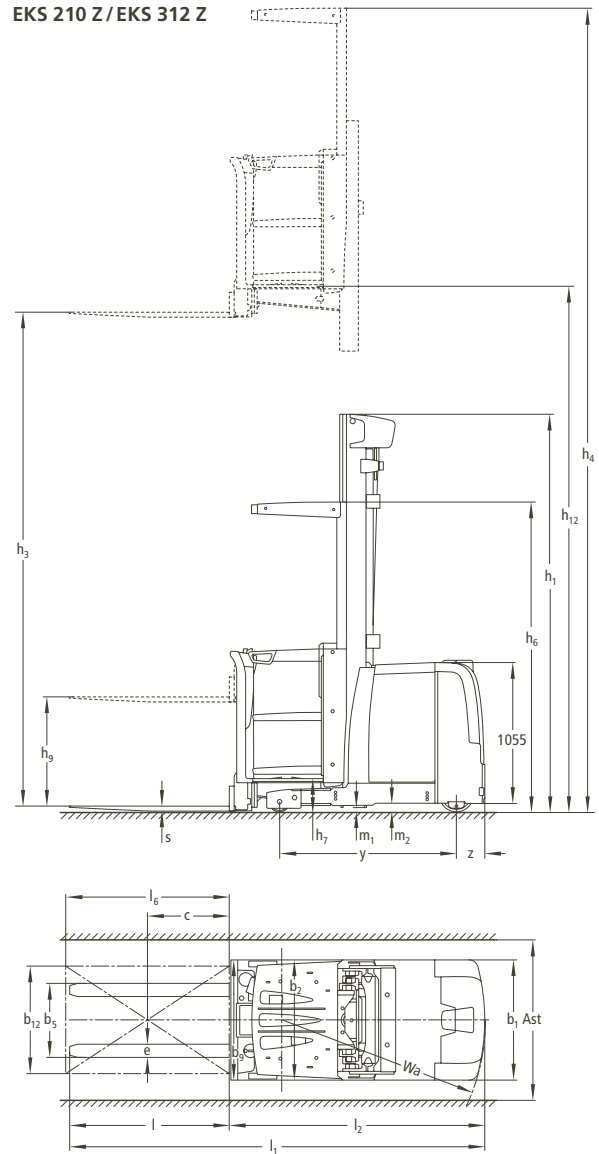
- The EKS operator can easily attain access to this performance. The cabin offers a generously sized workplace with outstanding vision. At the centre of the control concept, is the two-piece console for the operator and the large information display.

EKS 210/EKS 312

EKS 210 L/EKS 312 L



EKS 210 Z/EKS 312 Z



Standard values for working aisle widths (mm)						
with rail guidance						
Pallet length (l_6)	Pallet width (b_{12})	Ast		Ast ₃ /VDI theoretical		Ast ₃ practical
L design		EKS 210 L	EKS 312 L	EKS 210 L	EKS 312 L	
800	1200	1600	1600	3139	3328	+ 500
1200	1200	1600	1600	3496	3684	+ 500
1200	800	1200	1200	3426	3612	+ 500
Z design		EKS 210 Z	EKS 312 Z	EKS 210 Z	EKS 312 Z	
800	1200	1400	1400	3047	3235	+ 500
1200	1200	1400	1400	3412	3599	+ 500
1200	800	1100	1200	3351	3537	+ 500
with inductive guidance						
Pallet length (l_6)	Pallet width (b_{12})	Ast		Ast ₃ /VDI theoretical		Ast ₃ practical
L design		EKS 210 L	EKS 312 L	EKS 210 L	EKS 312 L	
800	1200	1650	1650	3139	3328	+ 1000
1200	1200	1650	1650	3496	3684	+ 1000
1200	800	1250	1250	3426	3612	+ 1000
Z design		EKS 210 Z	EKS 312 Z	EKS 210 Z	EKS 312 Z	
800	1200	1450	1450	3047	3235	+ 1000
1200	1200	1450	1450	3412	3599	+ 1000
1200	800	1150	1250	3351	3537	+ 1000

Technical data in line with VDI 2198

Identification	1.1	Manufacturer (abbreviation)	Jungheinrich	Jungheinrich	Jungheinrich	Jungheinrich	1.1	
	1.2	Manufacturer's type designation	EKS 210 L	EKS 312 L	EKS 210 Z	EKS 312 Z	1.2	
	1.3	Drive	electric	electric	electric	electric	1.3	
	1.4	Operator type	order picker	order picker	order picker	order picker	1.4	
	1.5	Load capacity / rated load	Q (t)	1.0	1.2 ¹⁾	1.0	1.2 ¹⁾	1.5
	1.6	Load centre distance	c (mm)	400	400	400	400	1.6
	1.8	Load distance (Centre of load axle to fork face)	x (mm)	350	325	350	325	1.8
	1.9	Wheelbase	y (mm)	1325	1515	1325	1515	1.9
	1.10	Centre of drive wheel / counterweight	z (mm)	210	235	210	235	1.9
	Weights	2.1	Service weight	kg	2950	3750	2850	3650
2.2		Axle loading, laden front/rear	kg	3116/914	3624/1207	3066/864	3574/1157	2.2
2.3		Axle loading, unladen front/rear	kg	1440/1510	1890/1860	1390/1460	1840/1810	2.3
Wheels, Chassis	3.1	Tyres	Vulkollan®	Vulkollan®	Vulkollan®	Vulkollan®	3.1	
	3.2	Tyre size, front	150x95	150x95	150x95	150x95	3.2	
	3.3	Tyre size, back	250x80	343x110	250x80	343x110	3.3	
	3.5	Wheels, number front rear (x = driven wheels)	2/1x	2/1x	2/1x	2/1x	3.5	
	3.6	Tread, front	b ₁₀ (mm)	775	875	775	875	3.6
	Basic Dimensions	4.2	Closed mast height	h ₁ (mm)	2330 ²⁾	3330 ²⁾	2330 ²⁾	3330 ²⁾
4.4		Lift	h ₃ (mm)	3000	5000	3000	5000	4.4
4.5		Height, mast extended	h ₄ (mm)	5320 ²⁾	7320 ²⁾	5320 ²⁾	7320 ²⁾	4.5
4.7		Height of overhead guard (cabin)	h ₆ (mm)	2320 ²⁾	2320 ²⁾	2320 ²⁾	2320 ²⁾	4.7
4.8		Seat height / stand height	h ₇ (mm)	245 ²⁾	245 ²⁾	245 ²⁾	245 ²⁾	4.8
4.11		Additional lift	h ₉ (mm)	–	–	810	810	4.11
4.14		Stand height, elevated	h ₁₂ (mm)	3245 ²⁾	5245 ²⁾	3245 ²⁾	5245 ²⁾	4.14
4.19		Overall length (without load)	l ₁ (mm)	3135	3325	3085	3275	4.19
4.20		Length to face of forks	l ₂ (mm)	1885	2075	1885	2075	4.20
4.21		Overall width	b ₁ /b ₂ (mm)	900/1000	1000/1000	900/900	1000/1000	4.21
4.22		Fork dimensions	s/e/l (mm)	40/100/1250	40/100/1250	40/100/1200	40/100/1200	4.22
4.24		Fork-carriage width	b ₃ (mm)	–	–	600	600	4.24
4.25		Width across forks	b ₅ (mm)	560	560	560	560	4.25
4.27		Width across guide rolls	b ₆ (mm)	1200	1200	1100	1200	4.27
4.31		Ground clearance, laden, below mast	m ₁ (mm)	50	50	50	50	4.31
4.32		Ground clearance, centre of wheelbase	m ₂ (mm)	60	60	60	60	4.32
4.34		Aisle width for pallets 1200x800	Ast (mm)	1200	1200	1100	1200	4.34
4.35		Turning radius	Wa (mm)	1550	1760	1550	1760	4.35
4.39		Total lift	h ₃ + h ₉ (mm)			3810	5810	4.39
4.40		Order picking height (h ₁₅)	h ₁₂ + 1600 (mm)	4845	6845	4845	6845	4.40
4.42	Pallet width	b ₁₂ (mm)	800	800	800	800	4.42	
4.43	Pallet width	l ₆ (mm)	1200	1200	1200	1200	4.43	
4.44	Clear width driver compartment entrance	(mm)	585	585	585	585	4.44	
4.45	Clear driver compartment height inside	(mm)	2050	2050	2050	2050	4.45	
4.46	Driver compartment width outside	b ₃ (mm)	1000	1000	900	1000	4.46	
		Platform length / Surrounding height / Platform width (mm)	1250 / 1090 / 1000	1250 / 1090 / 1000	–	–		
Performance Data	5.1	Travel speed, laden/unladen (RG)	km/h	9.0/9.0	10.5/10.5	9.0/9.0	10.5/10.5	5.1
	5.2	Lift speed, laden/unladen	m/s	0.29/0.31	0.35/0.39	0.29/0.31	0.35/0.39	5.2
	5.3	Lowering speed, laden/unladen	m/s	0.34/0.31	0.39/0.37	0.34/0.31	0.39/0.37	5.3
	5.10	Service brake		reverse current / regenerative	reverse current / regenerative	reverse current / regenerative	reverse current / regenerative	5.10
	5.11	Parking brake		electric spring loaded	electric spring loaded	electric spring loaded	electric spring loaded	5.11
	E-Motor	6.1	Drive motor rating S ₂ 60 min.	kW	3	6.9	3	6.9
6.2		Lift motor rating at S ₃ 25%	kW	9.5	9.5	9.5	9.5	6.2
6.3		Battery acc. to DIN 43531/35/36 A, B, C, no		3 EPzS465	4 EPzS 620	3 EPzS 465	4 EPzS 620	6.3
6.4		Battery voltage, nominal capacity K ₅	V/Ah	48/465	48/620	48/465	48/620	6.4
6.5		Battery weight	kg	740	930	740	930	6.5
Others	8.1	Type of drive control		AC drive control	AC drive control	AC drive control	AC drive control	8.1
	8.4	Sound level at the driver's ear according to EN 12.053 dB(A)		62	69	62	69	8.4
	8.6	Steering		electric	electric	electric	electric	8.6
1) Q (t) 1.0 at c = 600 mm 2) + 30 mm if mobile personnel protection system is fitted								

This specification sheet according to VDI regulation 2198 only provides technical values for the standard truck. Non-standard tyres, different masts, additional equipment, etc. could produce other values. Right reserved for technical changes and improvements.

EKS 210 standard mast designs (mm)							
	h_3	$h_{total} (h_3+h_9)$	h_2	h_{12}^*	h_{15}^*	h_1^*	h_4^*
Two-stage mast ZT	3000	3810	–	3245	4845	2330	5320
	3500	4310	–	3745	5345	2580	5820
	4250	5060	–	4495	6095	2960	6570
Three-stage mast DZ	4750	5560	10	4995	6595	2330	7070
	5500	6310	260	5745	7345	2580	7820
	6000	6810	450	6245	7845	2770	8320

* + 30 mm if mobile personnel protection system is fitted

EKS 312 standard mast designs (mm)							
	h_3	$h_{total} (h_3+h_9)$	h_2	h_{12}^*	h_{15}^*	h_1^*	h_4^*
Two-stage mast ZT	5000	5810	–	5245	6845	3330	7320
	5500	6310	–	5745	7345	3600	7820
	6000	6810	–	6245	7845	3850	8320
	6500	7310	–	6745	8345	4125	8820
	7500	8310	–	7745	9345	4650	9820
	8500	9310	–	8745	10345	5150	10820
Three-stage mast DZ	4750	5560	10	4995	6595	2330	7070
	5500	6310	260	5745	7345	2580	7820
	6000	6810	450	6245	7845	2770	8320
	6500	7310	630	6745	8345	2950	8820
	7500	8310	1010	7745	9345	3330	9820
	8300	9110	1280	8545	10145	3600	10620
	9250	10060	1805	9495	11095	4125	11570
	9500	10310	1805	9745	11345	4125	11820

* + 30 mm if mobile personnel protection system is fitted

Make use of the advantages



Pioneering 3-phase technology

There are now more than 150,000 Jungheinrich trucks with 3-phase technology in use worldwide. This accumulated know-how is incorporated into our current drive and control technology:

- High order-picking performance.
- Low power consumption.
- Effective thermal economy.
- Reduced wear and maintenance.



Drive compartment

High throughput and order-picking performance

- 3-phase motors with high torque.
- High acceleration for driving and lifting.
- Quick main and auxiliary masts.

Modular design

High flexibility through modular design:

- Range of chassis and cabin width options.
- Flexible operating console concept.
- Load-bearing components: auxiliary masts, walk-on pallets or platforms.
- Free ranging.
- Mechanical rail guidance or inductive guidance (both optional).



Controls, load side and drive side

Future compatibility:

- Adaptor system for customising the cab width to new operating requirements.
- Electronic height limitations for the masts.
- TÜV-certified control system (CAN-Bus) for maximum reliability.

Economic energy management

- Double energy-saving benefits through regenerative braking and load lowering.

Make use of the advantages

- Workplace lighting using energy-saving LED spotlights.
- Activation of the LED work spotlights upon reaching the destination (optional).
- Longer operating times on a single battery charge (up to 2 shifts).
- Active energy and battery management
- Longer battery lifetime.
- Battery rollers for quick battery exchange.

RFID floor control (optional)

- Truck control by transponder technology.
- Continuous travel distance measurement for precise recognition of all warehouse areas.
- High flexibility for switching/safety functions (aisle end recognition, lift/drive cut-outs, speed reduction).
- Drive speeds optimised according to the floor topology.

Jungheinrich warehouse navigation system (optional)

- Linking the EKS to a Warehouse Management System (WMS) using a radio data terminal and/or scanner.
- Direct loading of the destination within the narrow aisle through the truck computer.
- Automatic vertical positioning under operator control.
- Automatic horizontal positioning under operator control.
- High degree of automation.
- Improved order-picking performance.
- Optimised movements and dual cycling possibilities.
- Elimination of incorrect positioning by RFID location detection.
- High flexibility in the warehouse, as the existing WMS can be modified to cater for warehouse extensions.

Integral Jungheinrich personnel protection system (optional)

- Factory-based integration into the safety computer.
- Configuration, commissioning and maintenance by Jungheinrich.

Ergonomic benefits and comfort

- Generously dimensioned cabin entrance.
- Lower cabin platform height – only 245 mm.
- Large headroom.



Controls, drive side

- Flat surrounding barrier for easy access to the pallet.
- Outstanding field of view over the load and the aisle.
- Height-adjustable operating consoles with integral shelf.
- Configurable membrane keyboard with numeric pad.
- Switchless two-hand operation concept.
- Drive control by thumb movement.
- Travel limit and damping of all hydraulic functions.

Control system (CAN-Bus)

- All movements can be set and adjusted via parameter.
- Electronically controlled drive wheel braking.



Jungheinrich personnel protection system

Commissioning and maintenance

- Quick and reliable commissioning using "teach-in" principles.
- Integral diagnostic system for remote maintenance using a modem.
- 1000 operating hours maintenance interval.
- Electronics with wear-free sensor system.

Reliable operation – high availability

- Robust and maintenance-free 3-phase drives – no wearing parts.
- 70 % fewer cables plugs due to CAN-Bus system.

Additional equipment

- Mechanical rail guidance.
- Inductive guidance for precise guidance within the aisle without any mechanical stress on componentry.
- Comfort pack for "Workplace" with LED internal cabin lighting, LED work spotlights and fan.
- Dual operator controls for load direction and drive direction (option).
- Radio with CD-player and MP3 interface.
- Lift height pre-selection (Height selection).
- Horizontal positioning.
- Jungheinrich ISM: Information system for truck management.
- Modular system for lift/drive cut-outs and speed reduction.
- Access by PIN code.
- Mechanical and electrical interface for material flow management systems.
- Battery rollers for sideways battery exchange.

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