

Synchronous reluctance motor converts energy into power and lowers energy consumption

Ergonomic and adjustable operating concept

Up to 25 percent more throughput with optional warehouseNAVIGATION

Excellent visibility in warehouse operation



## EKS 414s

### High-Level Order Picker (3,000 lbs.)

The powerful and efficient EKS 414s medium/high-level order picker provides peak performance in narrow-aisle applications.

Equipped with an innovative, seamless simplex 3-stage mast, the EKS 414s offers the tallest lift height among all vertical order pickers on the market reaching picking heights of over 45 feet and a 25 percent faster lift speed over the previous generation.

#### Longer Run Times:

Jungheinrich's energy efficiency class IE4 synchronous reluctance lift motor combined with 48-V control technology increases efficiency while reducing energy loss maintaining the advantages of three-phase AC motors.

The new technology helps reduce energy loss by almost 50 percent, translating into longer run times and greater performance.

#### How It Works:

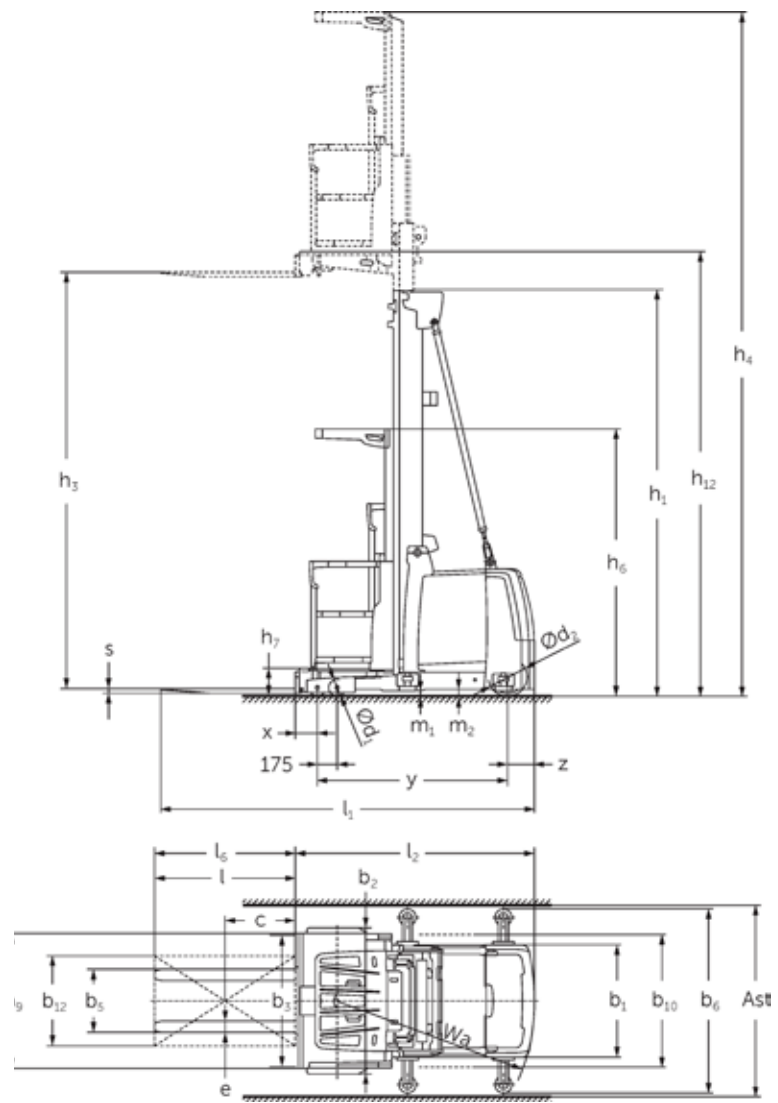
- During operation, the motor converts around 93 percent of the energy into power.
- Rotor design emits no energy reducing heat.
- This lowers energy consumption and loss by about 50 percent, and significantly increases vehicle performance.

#### Smart Systems:

The EKS 414s also comes equipped with several "smart" systems for greater operator control and productivity.

Jungheinrich's unique warehouseNAVIGATION (optional) system can also be added to further boost picking accuracy, increasing productivity by up to 25 percent and saving costs. Used in conjunction with RFID transponders placed inside the guided aisles, the truck detects its current position within the aisle and will automatically locate the next picking position according to the operators travel/lift command. This results in an up to 25 percent increase in productivity.

# EKS 414s



Mast Table - EKS 414s

Designation	MFH		OALH		FFH	
	in	mm	in	mm	in	mm
Two-Stage Mast	165	4,200	116	2,950	3	75
	195	4,950	131	3,330	3	75
	215	5,450	142	3,600	3	75
	234	5,950	152	3,850	3	75
	254	6,450	163	4,125	3	75
	293	7,450	183	4,650	3	75
	333	8,450	203	5,150	3	75
Three-Stage Mast	215	5,450	103	2,610	3	75
	234	5,950	110	2,780	3	75
	254	6,450	116	2,940	3	75
	274	6,950	123	3,110	3	75
	293	7,450	129	3,275	3	75
	313	7,950	136	3,440	3	75
	333	8,450	142	3,610	3	75
	352	8,950	150	3,810	3	75
	372	9,450	157	3,980	3	75
	411	10,450	174	4,410	3	75
	451	11,450	190	4,810	3	75
490	12,450	205	5,210	3	75	

Characteristics	1.1	Manufacturer (abbreviation)		Jungheinrich			
	1.2	Manufacturer's type designation		<b>EKS 414s – 48 Volt</b>			
	1.3	Drive		stand-on			
	1.4	Operator type		order picker			
	1.5	Load capacity / rated load	Q	lb	kg	3,000	1,360
	1.6	Load center distance	c	in	mm	24	610
	1.8	Load distance, center of load axle to fork face	x	in	mm	5.7	145
	1.9	Wheelbase	y	in	mm	66.5	1,690
	1.10	Center of drive wheel / counterweight	z	in	mm	9.4	240
	Weights	2.1	Net weight		lb	kg	7,429
2.2		Axle loading, loaded front / rear		lb	kg	7,397 / 2,679	3,355 / 1,215
2.3		Axle loading, unloaded front / rear		lb	kg	3,428 / 4,002	1,555 / 1,815
Wheels, Chassis	3.1	Tires		Polyurethane			
	3.2	Tire size, load wheels	d <sub>1</sub>	in	mm	150 x 100	
	3.3	Tire size, drive tire	d <sub>2</sub>	in	mm	343 x 110	
	3.5	Number of tires: load wheels / drive tire		4 / 1x			
	3.6	Tread width, load wheels		in	mm	34.5	876
	Dimensions	4.2	Mast height (lowered)	h <sub>1</sub>	in	mm	131.1
4.4		Lift height	h <sub>3</sub>	in	mm	196.9	5,000
4.5		Extended mast height (top edge Overhead guard at cabin)	h <sub>4</sub>	in	mm	290.2	7,370
4.7		Height of overhead guard	h <sub>6</sub>	in	mm	93.3	2,370
4.8		Seat height / standing height	h <sub>7</sub>	in	mm	9.6	245
4.14		Standing height raised	h <sub>12</sub>	in	mm	206.5	5,245
4.19.4		Total length including fork length	l <sub>1</sub>	in	mm	128.9	3,275
4.20		Length to face of forks	l <sub>2</sub>	in	mm	81.7	2,075
4.21		Overall width	b <sub>1</sub> , b <sub>2</sub>	in	mm	39.4 / 39.4	1,000 / 1,000
4.22		Fork dimensions (H x W x L)	s / e / l	in	mm	2 / 4 / 47.2	50 / 100 / 1,200
4.24		Fork carriage width	b <sub>3</sub>	in	mm	38.2	970
4.25		Width across forks	b <sub>5</sub>	in	mm	24.8	630
4.27		Width across guide rollers	b <sub>6</sub>	in	mm	47.2	1,200
4.31		Floor clearance with load under mast	m <sub>1</sub>	in	mm	2	50
4.32		Ground clearance, centre of wheelbase	m <sub>2</sub>	in	mm	2.4	60
4.33		Working aisle width for 48in x 42in pallet	Ast	in	mm	49.8	1,266
4.35		Turning radius (theoretical / maximum)	Wa	in	mm	72.6 / 76.0	1,845 / 1,930
4.39		Total lift	h <sub>3</sub>	in	mm	196.9	5,000
4.40	Order picking height	h <sub>12</sub> + 1600mm	in	mm	269.5	6,845	
4.42	Pallet width	b <sub>12</sub>	in	mm	42.0	1,066	
4.43	Pallet length	l <sub>6</sub>	in	mm	48.0	1,219	
4.45	Inner clearance height of operator compartment		in	mm	82.7	2,100	
4.46	Outer width of operator compartment	b <sub>9</sub>	in	mm	39.4	1,000	
Performance	5.1	Driving speed, with load / without load		mph	km/h	7.5 <sup>1)</sup>	12.0 <sup>2)</sup>
	5.2	Lift speed, with load / without load		ft/min	m/s	78.7 (88.6) <sup>2)</sup>	0.4 (0.45) <sup>2)</sup>
	5.3	Lowering speed, with load / without load		ft/min	m/s	78.7 (88.6) <sup>2)</sup> / 78.7	0.4 (0.45) <sup>2)</sup> / 0.4
	5.10	Service brake		regenerative			
	5.11	Parking brake		electric spring loaded			
Motors	6.1	Drive motor, output S2 60 min		kW		6.5	
	6.2	Lift motor, output at S3 15 %		kW		12	
	6.3	Battery compartment size		in	mm	37.2 x 21.3 x 30.9	945 x 540 x 784
		Battery Roller Height		in	mm	8.7	220
	6.4	Battery voltage / nominal capacity K <sub>5</sub>		V / Ah		48 / 500	
6.5	Minimum battery weight		lb	kg	2,022	917	
Other Details	8.1	Type of drive control		AC drive control			
	8.6	Steering		dB (A)	electric		

1) With drivePLUS Performance Package

2) With liftPLUS Performance Package

Non-standard tires, different masts, additional equipment, etc., could produce other values. Rights reserved for technical changes and improvements.

# The Jungheinrich Advantage



Visibility to high loads



Simplified pallet retrieval



Ergonomic operator compartment

## Performance

The versatile EKS 414s enables maximum picking performance and efficiency, from the first racking level to heights over 45 feet tall.

Performance enhancing options:

- liftPLUS: Increase lift speed
- drivePLUS: Increase the travel speed
- positionCONTROL: semi-automated approach to lift height

## Efficiency

Cost-effective energy management:

- Synchronous reluctance lift motor for optimal efficiency with minimum energy loss
- 48-V control concept: increases performance with a compact unit that contains fewer cables and plugs
- Area-specific speed profile with the use of transponders

## Comfort and protection

Ergonomic Operators Compartment:

- Optimized operating concept
- Excellent all-round visibility
- Easy entry with low step up height
- Foldable side barriers
- Spacious cabin with ample storage
- Ergonomic floor mat and sizable operator presence pedal

## Productivity

RFID technology (optional)

- Truck control with transponder technology
- Permanent distance measuring for exact positioning within the warehouse allows flexible and precise end of aisle slow down or stop
- Programmable lift/travel cut-outs
- Travel speeds optimized according to the floor topology

## warehouseNAVIGATION (optional)

- Links the EKS 414s to the warehouse management system (WMS) via radio data terminal or scanner
- Direct acceptance of the target destination in the narrow aisle on the truck display
- Semi-automatic vertical and horizontal positioning
- Improved order-picking performance with semi-automation
- Eliminate incorrect positioning through RFID intelligent technology

## Service and maintenance

- Expansive dealer service network
- Integrated diagnostic system
- 1,000 operating hours planned maintenance intervals

## Lithium-ion Package Advantages

- Fast charging with no need for battery exchanges
- Maintenance-free with no odors from gases or acidification
- Longer service life and lower maintenance compared with lead-acid batteries
- Charging can be interrupted at anytime
- 5-year battery warranty included

## Parts when you need them

Jungheinrich's Parts Fast or Parts Free Guarantee ensures next-business-day delivery by 5:00 PM of all Jungheinrich parts in the United States, or they're free, including freight. For customers in Canada and Mexico, the guarantee ensures shipping of parts within 24 hours from the time the order was placed by the dealer. See your local Jungheinrich dealer for program details.

- Programs may be subject to change without notice and may vary by region. Please ask your local Jungheinrich dealer for complete terms and conditions.