

24 Volt 3-phase AC technology for greater torque and responsiveness

Ergonomic design for outstanding handling

Excellent efficiency due to high-performance levels with low energy consumption

Available with optional open platform (L) or auxiliary lift (Z)



## EKS 110

### Vertical Order Picker (2,200 lbs.)

The EKS 110 is the ideal truck for order picking in the first to third levels of racking. The platform and load section can be raised to a height of up to 118 inches, allowing individual items to be picked from heights up to 15 feet.

The travel and lift controls are designed to allow for simultaneous operation to get to the point of order picking faster.

The counterbalance design also allows for a wide range of loads to be handled. The load section is available with an optional open platform design or with an auxiliary lift (without reducing the residual capacity). The auxiliary lift ensures that the picked goods can be placed at an ergonomically correct height for operator comfort and efficiency.

Additional ergonomic and technical features are utilized to make order picking easier, faster and more economical. These features include:

- Large storage areas on the battery cover and below the control unit.
- Extended operator platform width (optional).
- Infinitely variable speed control.
- Individually-adjustable travel parameters.
- Clear operator display.
- 24-Volt AC drive system.

# Technical data

as of: 12/2012

Characteristics	1.1	Manufacturer	Jungheinrich		Jungheinrich				
	1.2	Model	EKS 110 (110 E) <sup>1)</sup>		EKS 110 (160 E) <sup>1)</sup>				
	1.3	Drive	electric		electric				
	1.4	Type of operation	order picker		order picker				
1.5	Load capacity / rated load	Q	lbs	kg	2,200	990	2,200	990	
1.6	Load center distance	c	in	mm	24.0	610	24.0	610	
1.8	Load distance, center of drive axle to fork		in	mm	7.0	178	7.0	178	
1.9	Wheelbase	y	in	mm	51.2	1,300	51.2	1,300	
Weights	2.1	Service weight including battery (see line 6.5)	lbs	kg	3,871 <sup>2)</sup>	1,756 <sup>2)</sup>	4,264 <sup>2)</sup>	1,934 <sup>2)</sup>	
	2.2	Axle loading – loaded, drive / load	lbs	kg	1,049 / 5,027 <sup>3)</sup>	476 / 2,280 <sup>3)</sup>	1,005 / 5,463 <sup>3)</sup>	465 / 2,478 <sup>3)</sup>	
	2.3	Axle loading – unloaded, drive / load	lbs	kg	2,377 / 1,495 <sup>3)</sup>	1,078 / 678 <sup>3)</sup>	2,425 / 1,839 <sup>3)</sup>	1,100 / 834 <sup>3)</sup>	
Wheels, Chassis	3.1	Tires	Vulkollan®		Vulkollan®				
	3.2	Tire size, drive	in	mm	9.1 x 3.1	230 x 80	9.1 x 3.1	230 x 80	
	3.3	Tire size, load	in	mm	5.9 x 5.1	150 x 130	5.9 x 5.1	150 x 130	
	3.7	Track width, load side	in	mm	24.8	630	24.8	630	
Dimensions	4.2	Collapsed mast height	h <sub>1</sub>	in	mm	65.4 <sup>8)</sup>	1,660 <sup>8)</sup>	89.0	2,260
	4.4	Maximum fork height (MFH)	h <sub>3</sub>	in	mm	39.4	1,000	63.0	1,600
	4.5	Overall extended height (OAE)		in	mm	104.7 <sup>8)</sup>	2,660 <sup>8)</sup>	150.8	3,830
	4.7	Overhead load guard (cab) height		in	mm	87.8 (optional)	2,230 (optional)	87.8	2,230
	4.8	Seat height / standing height		in	mm	7.9	200	7.9	200
	4.11	Auxiliary lift		in	mm	31.5 <sup>6)</sup>	800	31.5 <sup>6)</sup>	800
	4.14	Maximum platform height		in	mm	47.2	1,200	70.9	1,800
	4.15	Lowered fork height		in	mm	3.1	80	3.1	80
	4.16	Length of platform		in	mm	30.5 <sup>4)</sup>	775 <sup>4)</sup>	30.5 <sup>4)</sup>	775 <sup>4)</sup>
	4.19	Overall length		in	mm	114.0	2,895	114.0	2,895
	4.20	Length to fork face, headlength		in	mm	66.7	1,695	66.7	1,695
	4.21	Overall width		in	mm	31.9	810	31.9	810
	4.22	Fork dimensions, thickness / width / length		in	mm	2.4 x 6.3 x 47.2 <sup>5)</sup>	60 x 160 x 1,200 <sup>5)</sup>	2.4 x 6.3 x 47.2 <sup>5)</sup>	60 x 160 x 1,200 <sup>5)</sup>
	4.23	Fork carriage ISO 2328, class / type A, B				FEM 2A (optional)	FEM 2A (optional)	FEM 2A (optional)	FEM 2A (optional)
	4.25	Overall fork width		in	mm	21.3 <sup>7)</sup>	540 <sup>7)</sup>	21.3 <sup>7)</sup>	540 <sup>7)</sup>
4.26	Distance between outriggers		in	mm	16.9	430	16.9	430	
4.31	Ground clearance, under mast (loaded)		in	mm	1.4	35	1.4	35	
4.34	Aisle width (for 48 x 40 pallets (L x W))		in	mm	126.0	3,200	126.0	3,200	
4.35	Turning radius		in	mm	59.8	1,518	59.8	1,518	
Performance	5.1	Travel speed, loaded / unloaded	mph	kph	6.1 / 6.3	9.8 / 10.1	5.6 / 5.6	9.0 / 9.0	
	5.2	Lift speed, loaded / unloaded	ft / min	m / s	31.5 / 39.4	0.16 / 0.20	25.6 / 33.5	0.13 / 0.17	
	5.3	Lowering speed, loaded / unloaded	ft / min	m / s	41.3 / 37.4	0.21 / 0.19	41.3 / 37.4	0.21 / 0.19	
	5.7	Gradeability, loaded / unloaded		%	5 / 10		5 / 10		
5.11	Parking brake			electromagnetic		electromagnetic			
Motors	6.1	Drive motor (rating S <sub>2</sub> 60 minutes)	hp	kW	3.75	2.8	3.75	2.8	
	6.2	Lift motor rating at S <sub>3</sub> 10%	hp	kW	4.0	3	4.0	3	
		Lift motor rating at S <sub>3</sub> 25%	hp	kW	3.0	2.2	3.0	2.2	
	6.4	Battery voltage		V	24		24		
		Battery, nominal capacity		Ah	560		560		
6.5	Battery weight, minimum	lbs	kg	1,003	456	1,003	456		
Other	8.1	Type of drive control			AC SpeedControl		AC SpeedControl		
	8.4	Sound level at driver's ear		dB (A)	61		61		

1) Data applies unless otherwise specified for options L and Z.  
 2) For auxiliary lift Z: +224.9 lbs.  
 3) For auxiliary lift Z: approximately +11.0 / +213.8 lbs.  
 4) For auxiliary lift Z: -2.6 inches.  
 5) For auxiliary lift Z: 2.6 x 6.3 x 47.2 inches; with fixed carriage.  
 6) Z version only.  
 7) With fixed carriage.  
 8) With overhead guard: +22.4 inches.

Characteristics	1.1	Manufacturer	Jungheinrich		Jungheinrich				
	1.2	Model	EKS 110 (190 E) <sup>1)</sup>		EKS 110 (280 ZZ) <sup>1)</sup>				
	1.3	Drive	electric		electric				
	1.4	Type of operation	order picker		order picker				
1.5	Load capacity / rated load	Q	lbs	kg	2,200	1,000	2,200	1,000	
1.6	Load center distance	c	in	mm	24.0	600	24.0	600	
1.8	Load distance, center of drive axle to fork		in	mm	7.0	178	7.3	185	
1.9	Wheelbase	y	in	mm	51.2	1,300	53.5	1,385	
Weights	2.1	Service weight including battery (see line 6.5)	lbs	kg	4,343 <sup>2)</sup>	1,970 <sup>2)</sup>	5,309 <sup>2)</sup>	2,270 <sup>2)</sup>	
	2.2	Axle loading – loaded, drive / load	lbs	kg	1,005 / 5,546 <sup>3)</sup>	456 / 2,514 <sup>3)</sup>	1,688 / 5,526 <sup>3)</sup>	765 / 2,505 <sup>3)</sup>	
	2.3	Axle loading – unloaded, drive / load	lbs	kg	2,443 / 1,900 <sup>3)</sup>	1,108 / 862 <sup>3)</sup>	2,879 / 2,128 <sup>3)</sup>	1,305 / 965 <sup>3)</sup>	
Wheels, Chassis	3.1	Tires	Vulkollan®		Vulkollan®				
	3.2	Tire size, drive	in	mm	9.1 x 3.1	230 x 80	9.1 x 3.1	230 x 80	
	3.3	Tire size, load	in	mm	5.9 x 5.1	150 x 130	5.9 x 5.1	150 x 130	
	3.7	Track width, load side	in	mm	24.8	630	28.4	720	
Dimensions	4.2	Collapsed mast height	h <sub>1</sub>	in	mm	100.8	2,560	87.8	2,250
	4.4	Maximum fork height (MFH)	h <sub>3</sub>	in	mm	74.8	1,900	110.2	2,800
	4.5	Overall extended height (OAE)		in	mm	162.6	4,130	198.0	5,030
	4.7	Overhead load guard (cab) height		in	mm	87.8	2,230	87.8	2,230
	4.8	Seat height / standing height		in	mm	7.9	200	7.9	200
	4.11	Auxiliary lift		in	mm	31.5 <sup>6)</sup>	800 <sup>6)</sup>	31.5 <sup>6)</sup>	800 <sup>6)</sup>
	4.14	Maximum platform height		in	mm	82.7	2,100	118.1	3,000
	4.15	Lowered fork height		in	mm	3.1	80	3.1	80
	4.16	Length of platform		in	mm	30.5 <sup>4)</sup>	775 <sup>4)</sup>	30.5 <sup>4)</sup>	775 <sup>4)</sup>
	4.19	Overall length		in	mm	114.0	2,895	116.7	2,985
	4.20	Length to fork face, headlength		in	mm	66.7	1,695	69.5	1,785
	4.21	Overall width		in	mm	31.9	810	35.4	900
	4.22	Fork dimensions, thickness / width / length		in	mm	2.4 x 6.3 x 47.2 <sup>5)</sup>	60 x 160 x 1,200 <sup>5)</sup>	2.4 x 6.3 x 47.2 <sup>5)</sup>	60 x 160 x 1,200 <sup>5)</sup>
	4.23	Fork carriage ISO 2328, class / type A, B				FEM 2A (optional)	FEM 2A (optional)	FEM 2A (optional)	FEM 2A (optional)
	4.25	Overall fork width		in	mm	21.3 <sup>7)</sup>	540 <sup>7)</sup>	21.3 <sup>7)</sup>	540 <sup>7)</sup>
4.26	Distance between outriggers		in	mm	16.9	430	20.5	520	
4.31	Ground clearance, under mast (loaded)		in	mm	1.4	35	1.4	35	
4.34	Aisle width (for 48 x 40 pallets (L x W))		in	mm	126.0	3,200	128.0	3,251	
4.35	Turning radius		in	mm	59.8	1,518	62.1	1,603	
Performance	5.1	Travel speed, loaded / unloaded	mph	kph	5.6 / 5.6	9.0 / 9.0	5.6 / 5.6	9.0 / 9.0	
	5.2	Lift speed, loaded / unloaded	ft / min	m / s	25.6 / 33.5	0.13 / 0.17	45.3 / 61.0	0.23 / 0.31	
	5.3	Lowering speed, loaded / unloaded	ft / min	m / s	41.3 / 37.4	0.21 / 0.19	59.1 / 59.1	0.30 / 0.30	
	5.7	Gradeability, loaded / unloaded		%	5 / 10		5 / 10		
5.11	Parking brake			electromagnetic		electromagnetic			
Motors	6.1	Drive motor (rating S <sub>2</sub> 60 minutes)	hp	kW	3.75	2.8	3.75	2.8	
	6.2	Lift motor rating at S <sub>3</sub> 10%	hp	kW	4.0	3	8.0	6	
		Lift motor rating at S <sub>3</sub> 25%	hp	kW	3.0	2.2	3.0	2.2	
	6.4	Battery voltage		V	24		24		
		Battery, nominal capacity		Ah	500		500		
6.5	Battery weight, minimum	lbs	kg	1,003	456	1,003	456		
Other	8.1	Type of drive control			AC SpeedControl		AC SpeedControl		
	8.4	Sound level at driver's ear		dB (A)	61		61		

1) Data applies unless otherwise specified for options L and Z.  
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 4) For auxiliary lift Z: -2.6 inches.  
 5) For auxiliary lift Z: 2.6 x 6.3 x 47.2 inches; with fixed carriage.  
 6) Z version only.  
 7) With fixed carriage.  
 8) With overhead guard: +22.4 inches.

# EKS 110

## EKS 110 L

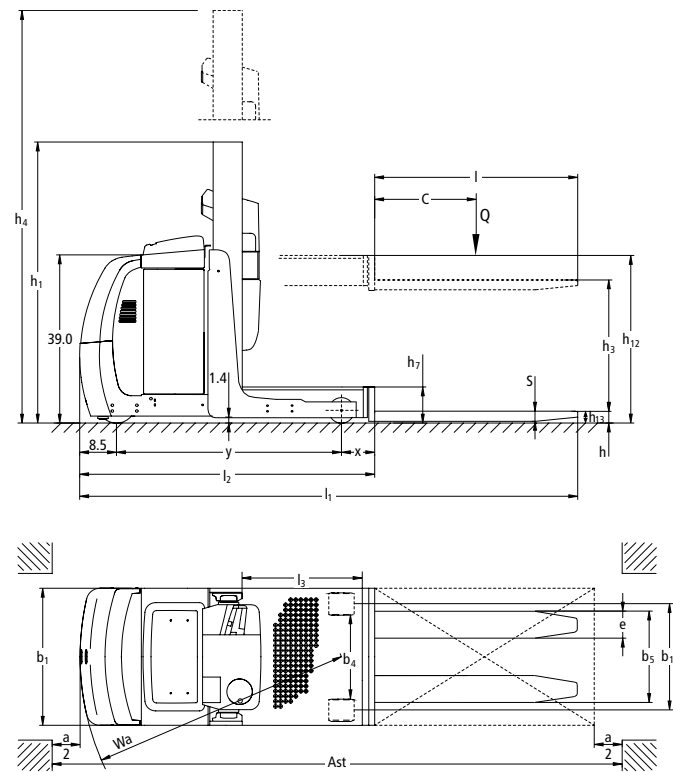


Illustration shows version 100 E.

## EKS 110 Z

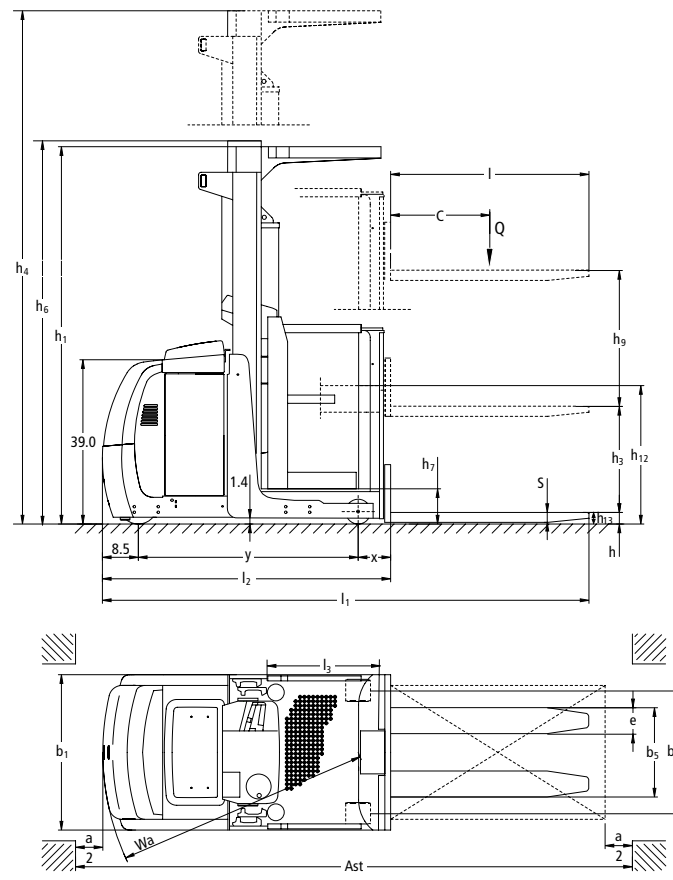


Illustration shows version 280 ZZ.  
Top view shown without overhead guard (OHG).

\*Fork design and carriage design may be different than illustrated.

Mast Table EKS 110														
	Collapsed Mast Height $h_1$				Lift Height $h_3$		Platform Height $h_{12}$		Extended Mast Height $h_4$				Order Picking Height $h_{12} + 63$	
	Without Overhead Guard		With Overhead Guard						Without Overhead Guard		With Overhead Guard			
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm		
100 E	65.4 <sup>1)</sup>	1,660 <sup>2)</sup>	87.8 <sup>2)</sup>	2,230 <sup>2)</sup>	39.4	1,000	47.2	1,200	104.7 <sup>1)</sup>	2,660 <sup>2)</sup>	127.2 <sup>2)</sup>	3,230 <sup>2)</sup>	110.2	2,800
160 E	—	—	89.0 <sup>1)</sup>	2,260 <sup>2)</sup>	63.0	1,600	70.9	1,800	—	—	150.8 <sup>2)</sup>	3,830 <sup>2)</sup>	133.9	3,400
190 E	—	—	100.8 <sup>1)</sup>	2,560 <sup>2)</sup>	74.8	1,900	82.7	2,100	—	—	162.6 <sup>2)</sup>	4,130 <sup>2)</sup>	145.7	3,700
280 ZZ	—	—	87.8 <sup>2)</sup>	2,230 <sup>2)</sup>	110.2	2,800	118.1	3,000	—	—	198.0 <sup>2)</sup>	5,030 <sup>2)</sup>	181.1	4,600

1) Highest point is lift mast.  
2) Highest point is overhead guard.



# The Jungheinrich Advantage

## 24-Volt, 3-phase AC technology

Jungheinrich AC motors provide greater power and reduced operating costs during the life of the truck. The benefits include:

- Outstanding efficiency and excellent energy conservation.
- Powerful acceleration.
- Fast reversing without hesitation.
- No carbon brushes – the traction motor is maintenance-free.
- Built in compliance with ANSI/ITSDF B56.1 design specifications\* for Type E industrial trucks with Type E battery at time of manufacture.

## Smooth lifting and lowering

The platform raises and lowers in a consistent, smooth process resulting from the special modulation of the hydraulic pump and valves. The cushioned platform provides additional operating comfort.

The advantages:

- Physical relief for the operator.
- Additional protection for sensitive loads.
- Minimal wear due to reduced stress on the lift truck.

## Controlled travel

The Jungheinrich SpeedControl system provides smooth, precise control of the travel speed.

- The requested travel speed is maintained in every travel situation.
- The traction controller can be programmed for different applications: ultra smooth movement when precise, low speeds are required; faster travel and acceleration when higher performance is needed.
- Individually-adjustable travel parameters (e.g. acceleration, top speed, regenerative braking) ensure optimum adjustment to virtually every application.
- The operator can choose from three different travel programs.
- Very low noise when lifting and driving.



Intuitive operator display

## Operator display

High-quality control panel that displays the most important operating data.

- Travel direction and wheel position display.
- Battery condition with residual running time display.
- Selected travel program with performance features.
- Operating hours and time.

## Ergonomic control unit

- The angled steering wheel supports natural hand movements and virtually eliminates wrist strain.
- Easily accessible buttons and switches allow the operator to control the lift truck with minimal hand movements.

## Excellent efficiency and reliability

High acceleration levels and fast travel / lift speeds provide excellent conditions for order picking performance. Several performance features ensure high reliability.

- Secure handling around corners due to a low center of gravity.
- Rigid chassis and mast design limit the lean and flex on the truck during operation.
- Travel performance is precisely tuned, based on a combination of lift height and steering angle, to allow for maximum productivity and operator confidence throughout the work shift.



Control console

## Less maintenance

Service-friendly components ensure long-term reduction of operating costs.

- AC motors eliminate the need for maintenance associated with DC motors, such as brushes, brush springs or a commutator.
- Easy access to components through the front / side panels due to the optimum layout of auxiliary hydraulics.

## Optional equipment

- Guidance controls, aisle recognition and end-of-aisle protection device for narrow-aisle, rail-guided applications.
- Platform extensions.
- Secondary operator position in fork direction.
- Working lights and warning lights on overhead guard.

## 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.

