

High performance from twin  
4<sup>th</sup> Generation AC motors

Jungheinrich Curve Control for  
safer driving and cornering

Comfortable workstation with  
SOLO- or MULTI-PILOT control  
(optional)

Maintenance-free multiple disc brakes

Operator assistance (optional)

5 individually adjustable working  
programmes



## EFG 213–220

### Electric three-wheel Counterbalance Truck (1300, 1500, 1600, 1800, 2000 kg)

The use of innovative AC technology opens up new possibilities and provides numerous advantages for electric forklift trucks:

- Excellent performance values for acceleration, travel and lift speeds allow for maximum productivity.
- More work per battery charge as a result of optimum efficiency and more effective energy recovery.
- Precise hydrostatic power steering and electric braking when the accelerator is released.

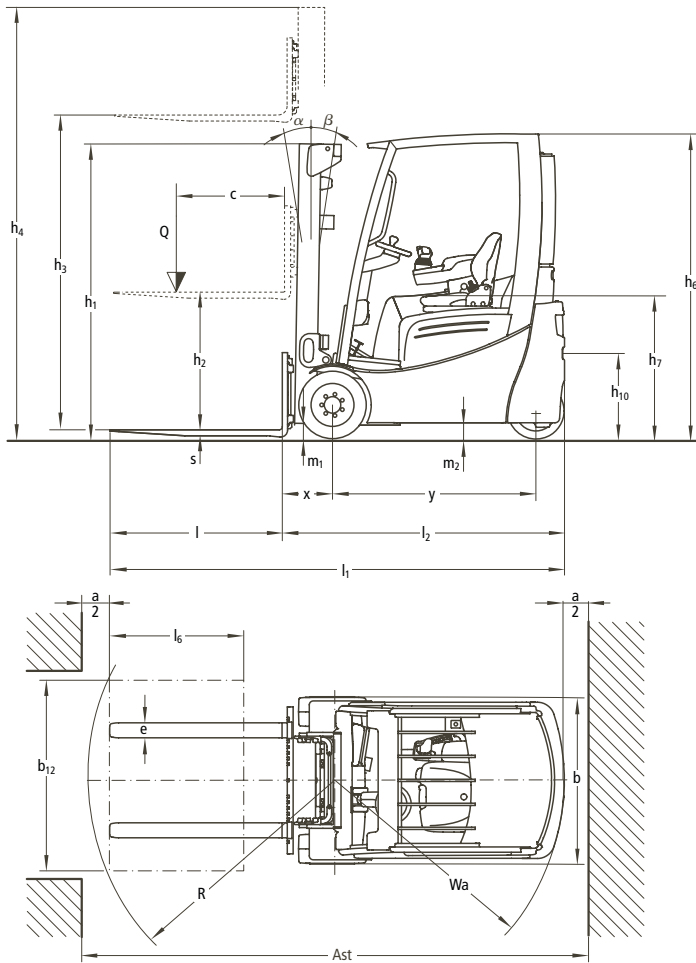
- Maintenance-free enclosed AC motors protected to IP 54.

This ensures faster working cycles and significantly longer operation per battery charge. Low day-to-day operating costs, together with reduced maintenance requirements, guarantee outstanding economic efficiency.

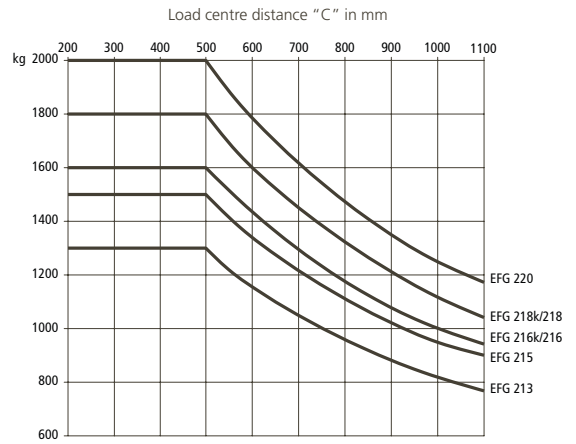
Compact design makes the three wheel truck extremely manoeuvrable and allows fast operation in the most confined spaces

for example lorries, containers or railway wagons. The closed design and the front wheel drive ensure a universal suitability and optimal traction on gradients and slippery surfaces.

# EFG 213–220



## Capacity



Mast table EFG 213–220							
Designation	Lift height $h_3$ mm	Free lift $h_2$ mm		Closed height $h_1$ mm	Extended height $h_4$ mm		Tilt forward/ backward $\alpha/\beta$ (°)
		EFG 213–216	EFG 218–220		EFG 213–216	EFG 218–220	
Two-stage mast ZT	3000	150	150	2000	3550	3585	7/7
	3100	150	150	2050	3650	3685	7/7
	3300	150	150	2150	3850	3885	7/7
	3600	150	150	2300	4150	4185	7/7
	4000	150	150	2500	4550	4585	7/7
	4500	150	150	2800	5050	5085	7/7
	5000	150	150	3050	5550	5585	7/5
Two-stage mast ZT	3000	1405	1340	1955	3550	3615	7/7
	3100	1455	1390	2005	3650	3715	7/7
	3300	1555	1490	2105	3850	3915	7/7
	3600	1705	1640	2255	4150	4215	7/7
	4000	1905	1840	2455	4550	4615	7/7
Three-stage mast DZ	4500	1455	1390	2005	5050	5115	7/7
	4800	1555	1490	2105	5350	5415	7/5
	5000	1630	1565	2180	5550	5615	7/5
	5500	1805	1740	2355	6050	6115	7/5
	6000*	2005	1940	2555	6550	6615	7/5
	6500*	2255	2190	2805	7050	7115	7/5

\* Mast not available for EFG 215

# Technical data in line with VDI 2198 as at: 06/2008

Identification	1.1	Manufacturer (abbreviation)	Jungheinrich	Jungheinrich	Jungheinrich	Jungheinrich	Jungheinrich	Jungheinrich	Jungheinrich	1.1
	1.2	Manufacturer's type designation	<b>EFG 213</b>	<b>EFG 215</b>	<b>EFG 216 k</b>	<b>EFG 216</b>	<b>EFG 218 k</b>	<b>EFG 218</b>	<b>EFG 220</b>	1.2
	1.3	Drive	electric	electric	electric	electric	electric	electric	electric	1.3
	1.4	Operator type	seat	seat	seat	seat	seat	seat	seat	1.4
	1.5	Load capacity/rated load Q (t)	1.3	1.5	1.6	1.6	1.8	1.8	2.0	1.5
	1.6	Load centre distance c (mm)	500	500	500	500	500	500	500	1.6
	1.8	Load distance, centre of drive axle to fork x (mm)	335 <sup>1)</sup>	335 <sup>1)</sup>	340 <sup>2)</sup>	340 <sup>2)</sup>	340 <sup>2)</sup>	340 <sup>2)</sup>	340 <sup>2)</sup>	1.8
	1.9	Wheelbase y (mm)	1249	1249	1357	1465	1357	1465	1465	1.9
	Weights	2.1	Service weight incl. battery (see line 6.5) kg	2733	2978	3000	3057	3256	3207	3382
2.2		Axle loading, laden front/rear kg	3545/488	3870/608	4052/548	4060/597	4380/675	4405/602	4706/676	2.2
2.3		Axle loading, unladen front/rear kg	1326/1407	1310/1668	1411/1589	1496/1561	1409/1846	1520/1686	1501/1881	2.3
Wheels, Chassis	3.1	Tyres	SE(L)/SE(L)	SE(L)/SE(L)	SE(L)/SE(L)	SE(L)/SE(L)	SE/SE	SE/SE	SE/SE	3.1
	3.2	Tyre size, front	18x7-8	18x7-8	18x7-8	18x7-8	200/50-10	200/50-10	200/50-10	3.2
	3.3	Tyre size, rear	140/55-9	140/55-9	140/55-9	140/55-9	140/55-9	140/55-9	140/55-9	3.3
	3.5	Wheels, number front rear (x = driven wheels)	2x/2	2x/2	2x/2	2x/2	2x/2	2x/2	2x/2	3.5
	3.6	Tread, front b <sub>10</sub> (mm)	904	904	904	904	914	914	914	3.6
	3.7	Tread, rear b <sub>11</sub> (mm)	176	176	176	176	176	176	176	3.7
	Basic Dimensions	4.1	Tilt of mast/fork carriage forward/backward α/β(°)	7/7	7/7	7/7	7/7	7/7	7/7	7/7
4.2		Closed mast height h <sub>1</sub> (mm)	2000	2000	2000	2000	2000	2000	2000	4.2
4.3		Free lift h <sub>2</sub> (mm)	150	150	150	150	150	150	150	4.3
4.4		Lift h <sub>3</sub> (mm)	3000	3000	3000	3000	3000	3000	3000	4.4
4.5		Height, mast extended h <sub>4</sub> (mm)	3560	3560	3560	3560	3587	3587	3587	4.5
4.7		Height of overhead guard (cabin) h <sub>6</sub> (mm)	2040	2040	2040	2040	2040	2040	2040	4.7
4.8		Seat height/stand height h <sub>7</sub> (mm)	920	920	920	920	920	920	920	4.8
4.12		Coupling height h <sub>10</sub> (mm)	560	560	560	560	560	560	560	4.12
4.19		Overall length l <sub>1</sub> (mm)	2924	2924	3037	3145	3037	3145	3145	4.19
4.20		Length to face of forks l <sub>2</sub> (mm)	1774	1774	1887	1995	1887	1995	1995	4.20
4.21		Overall width b <sub>1</sub> /b <sub>2</sub> (mm)	1060/-	1060/-	1060/-	1060/-	1120/-	1120/-	1120/-	4.21
4.22		Fork dimensions s/e/l (mm)	35/100/1150	35/100/1150	40/100/1150	40/100/1150	40/100/1150	40/100/1150	40/100/1150	4.22
4.23		Fork carriage ISO 2328, class/type A, B	2A	2A	2A	2A	2A	2A	2A	4.23
4.24		Fork-carriage width b <sub>3</sub> (mm)	980	980	980	980	980	980	980	4.24
4.31		Ground clearance, laden, below mast m <sub>1</sub> (mm)	80	80	80	80	80	80	80	4.31
4.32	Ground clearance, centre of wheelbase m <sub>2</sub> (mm)	100	100	100	100	100	100	100	4.32	
4.33	Aisle width for pallets 1000x1200 crossways Ast (mm)	3104	3104	3216	3323	3216	3323	3323	4.33	
4.34	Aisle width for pallets 800x1200 lengthways Ast (mm)	3226	3226	3339	3446	3339	3446	3446	4.34	
4.35	Turning radius Wa (mm)	1440	1440	1548	1655	1548	1655	1655	4.35	
Performance Data	5.1	Travel speed, laden/unladen km/h	16/16	16/16	16/16	16/16	16/16	16/16	16/16	5.1
	5.2	Lift speed, laden/unladen m/s	0.48/0.60	0.46/0.60	0.49/0.60	0.49/0.60	0.44/0.55	0.44/0.55	0.40/0.55	5.2
	5.3	Lowering speed, laden/unladen m/s	0.55/0.55	0.55/0.55	0.55/0.55	0.55/0.55	0.55/0.55	0.55/0.55	0.55/0.55	5.3
	5.5	Drawbar pull, laden/unladen N	2300/2500	2200/2450	2150/2450	2100/2450	2000/2300	2000/2300	1900/2300	5.5
	5.6	Max. drawbar pull, laden/unladen N	12700/12700	12700/12700	12700/12700	12700/12700	12400/12200	12400/12200	12300/12000	5.6
	5.7	Gradeability, laden/unladen %	7.6/12.5	7.3/12.3	7.3/12.3	7.0/11.5	6.2/10.7	5.9/10.5	5.7/10.4	5.7
	5.8	Max. gradeability, laden/unladen %	28/35	27/35	27/35	27/35	26/35	25/35	24/35	5.8
	5.9	Acceleration time, laden/unladen s	3.6/3.2	3.8/3.4	3.8/3.4	3.8/3.4	3.9/3.5	3.9/3.5	4.0/3.5	5.9
	5.10	Service brake	electr./mech.	electr./mech.	electr./mech.	electr./mech.	electr./mech.	electr./mech.	electr./mech.	5.10
	Electric Engine	6.1	Drive motor rating S <sub>2</sub> 60 min. kW	4.5/4.5	4.5/4.5	4.5/4.5	4.5/4.5	4.5/4.5	4.5/4.5	4.5/4.5
6.2		Lift motor rating at S <sub>3</sub> 15 % kW	11.5	11.5	11.5	11.5	11.5	11.5	11.5	6.2
6.3		Battery acc. to DIN 43531/35/36 A, B, C, no	DIN 43531 A	DIN 43531 A	DIN 43531 A	DIN 43531 A	DIN 43531 A	DIN 43531 A	DIN 43531 A	6.3
6.4		Battery voltage, nominal capacity K <sub>s</sub> V/Ah	48/500	48/500	48/625	48/750	48/625	48/750	48/750	6.4
6.5		Battery weight kg	715	715	855	1025	855	1025	1025	6.5
6.6		Battery dimensions l/w/h mm	830/522/627	830/522/627	830/630/627	830/738/627	830/630/627	830/738/627	830/738/627	6.5
Others	8.1	Energy consumption acc. to VDI cycle kWh/h	4.2 <sup>3)</sup>	4.3 <sup>3)</sup>	4.3 <sup>3)</sup>	4.4 <sup>3)</sup>	4.7 <sup>3)</sup>	4.7 <sup>3)</sup>	4.9 <sup>3)</sup>	6.6
	8.1	Type of drive control	impulse/AC	impulse/AC	impulse/AC	impulse/AC	impulse/AC	impulse/AC	impulse/AC	8.1
	8.2	Operating pressure for attachments bar	200	200	200	200	200	200	200	8.2
	8.3	Oil volume for attachments l/min	25	25	25	25	25	25	25	8.3
	8.4	Sound level at the driver's ear according to EN 12053 dB (A)	66	66	66	66	66	66	66	8.4
8.5	Towing coupling, type DIN	DIN 15170/H	DIN 15170/H	DIN 15170/H	DIN 15170/H	DIN 15170/H	DIN 15170/H	DIN 15170/H	8.5	

1) = 360 mm with DZ mast; with integrated sideshift: x = 358 mm (383 mm with DZ mast); with sideshift attachment: x = 395 mm (420 mm with DZ mast)  
 2) = 365 mm with DZ mast; with integrated sideshift: x = 363 mm (388 mm with DZ mast); with sideshift attachment: x = 400 mm (425 mm with DZ mast)  
 3) 60 working cycles/h, tolerance +/- 10% possible

# Make use of the advantages

## Superior operator comfort

Functionality and ergonomics of the driver compartment guarantees relaxed and fatigue-free work over long shifts:

- Low access step. Large, level foot well with automotive pedal lay-out.
- Adjustable steering column and hydraulic comfort seat for optimum seating position.
- Floating cab module cushions road shocks and vibrations.
- Clear view: mast and fork carriage allow for excellent visibility to load and road.
- Hydraulic power steering is precise and low effort, without kick-back.
- Comfort Display provides up-to-date information on vital vehicle conditions at a glance.
- Comfortable, fatigue-free operation of direction and hydraulics by SOLO-PILOT control (separate levers) or MULTI-PILOT control (optional), all functions controlled by one lever.
- Convenient storage for documents and the operators belongings.

## Professional battery management

The use of innovative AC technology opens up new applications and provides numerous advantages for electric forklift trucks:

- More work per battery charge as a result of optimum efficiency and more effective energy recovery.
- Sideway battery exit.
- Easy maintenance.

## Safe, wear-free braking

Three distinct systems ensure safe, precise and largely wear-free braking:

- Regenerative electric braking in reversing mode and regular brake pedal use.
- Multiple oil disc brakes act as a safety back-up. Wear-free and fully enclosed.
- Parking brake uses the service brake system through a separate electric actuation system. Operation warning light in the drivers console.

## Maintenance free electric motors

Proven AC technology now in their 4<sup>th</sup> generation: 2 drive motors, hydraulic pump motor, steering motor. High performance, low energy consumption, less maintenance:

- High torque for rapid work cycles.
- Up to 15% higher energy efficiency than shunt motors.
- No brushes, no collector – no maintenance expense.
- Fully enclosed and protected to IP 54.
- Long life, even under dusty and damp conditions.
- 2 years warranty on all motors.

## Active safety

Excellent drive dynamics and performance also demand a high degree of safety:

- Curve Control automatically reduces travel speed when cornering.
- Rollback protection ensures controlled operation on ramps and slopes.

- Very low centre of gravity improves stability and residual capacity.
- Twin wheel steering axle with low profile tyres ensures stable handling and smooth travel.
- Electronic and hydraulic overload protection guard.
- Traction Control ensures optimum torque in curves.
- Emergency cut off switch quickly accessible.
- Reliable data transfer between electronic components through CAN-Bus technology.

## Intelligent electronics

BoardControl electronic system permanently controls and monitors all truck functions.

- Smooth driving, dynamic reversing and precise load positioning with a minimum of energy.
- 5 application programmes can be individually adapted to ensure optimal performance in any application.
- Diagnostic system monitors all components and provides service data memory for rapid and cost-effective maintenance.
- Comfort Display with digital service hour meter (actual or cyclic duration factor), battery discharge indicator plus lift cut-out, clock, error code and warning displays.
- Electronic steer wheel position indicator.

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Jungheinrich AG  
ISO 9001, ISO 14001  
Certification of Quality and  
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Jungheinrich trucks  
conform to the European  
Safety Requirements.



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