

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 (optional)

Maintenance-free multiple disc brakes

Operator assistance systems  
(optional)

5 individually adjustable working  
programmes



## EFG 316–320

### Electric four-wheel Counterbalance Truck (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. Electric braking system feeds energy back to the battery 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.

With exceptional travel and lift speeds, plus excellent acceleration and gradeability, these electric trucks produce handling

performance similar to that of diesel and LPG forklifts. Enclosed motors and electronic systems make it possible to operate these trucks inside as well as outdoors. Even difficult environments, such as heavy dust, chemicals and moisture, will not affect the reliability and performance of the motors. These AC electric counterbalance trucks can, therefore, be deployed almost anywhere. Quiet, emission-free operation benefits the working environment and the low rate of energy consumption reduces operating costs.

 **JUNGHEINRICH**



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

Identification	1.1	Manufacturer (abbreviation)	Jungheinrich	Jungheinrich	Jungheinrich	Jungheinrich	Jungheinrich	1.1	
	1.2	Manufacturer's type designation	<b>EFG 316k</b>	<b>EFG 316</b>	<b>EFG 318k</b>	<b>EFG 318</b>	<b>EFG 320</b>	1.2	
	1.3	Drive	electric	electric	electric	electric	electric	1.3	
	1.4	Operator type	seat	seat	seat	seat	seat	1.4	
	1.5	Load capacity/rated load	Q (t)	1.6	1.6	1.8	1.8	2.0	1.5
	1.6	Load centre distance	c (mm)	500	500	500	500	500	1.6
	1.8	Load distance, centre of drive axle to fork	x (mm)	340 <sup>1)</sup>	340 <sup>1)</sup>	340 <sup>1)</sup>	340 <sup>1)</sup>	340 <sup>1)</sup>	1.8
	1.9	Wheelbase	y (mm)	1400	1508	1400	1508	1508	1.9
	Weights	2.1	Service weight incl. battery (see line 6.5)	kg	3035	3001	3175	3141	3306
2.2		Axle loading, laden front/rear	kg	4004/631	4043/558	4336/638	4367/574	4676/630	2.2
2.3		Axle loading, unladen front/rear	kg	1380/1655	1493/1508	1385/1790	1499/1642	1489/1817	2.3
Wheels, Chassis	3.1	Tyres	SE(L)/SE(L)	SE(L)/SE(L)	SE/SE	SE/SE	SE/SE	SE/SE	3.1
	3.2	Tyre size, front	18x7-8	18x7-8	200/50-10	200/50-10	200/50-10	200/50-10	3.2
	3.3	Tyre size, rear	16x6-8	16x6-8	16x6-8	16x6-8	16x6-8	16x6-8	3.3
	3.5	Wheels, number front rear (x = driven wheels)	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	914	914	914	3.6
	3.7	Tread, rear	b <sub>11</sub> (mm)	830	830	830	830	830	3.7
	Basic Dimensions	4.1	Tilt of mast/fork carriage forward/backward	(°)	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	4.2
4.3		Free lift	h <sub>2</sub> (mm)	150	150	150	150	150	4.3
4.4		Lift	h <sub>3</sub> (mm)	3000	3000	3000	3000	3000	4.4
4.5		Height, mast extended	h <sub>4</sub> (mm)	3560	3560	3587	3587	3587	4.5
4.7		Height of overhead guard (cabin)	h <sub>6</sub> (mm)	2040	2040	2040	2040	2040	4.7
4.8		Seat height/stand height	h <sub>7</sub> (mm)	920	920	920	920	920	4.8
4.12		Coupling height	h <sub>10</sub> (mm)	410/580	410 / 580	410 / 580	410 / 580	410 / 580	4.12
4.19		Overall length	l <sub>1</sub> (mm)	3140	3248	3140	3248	3248	4.19
4.20		Length to face of forks	l <sub>2</sub> (mm)	1990	2098	1990	2098	2098	4.20
4.21		Overall width	b <sub>1</sub> /b <sub>2</sub> (mm)	1060/-	1060/-	1120/-	1120/-	1120/-	4.21
4.22		Fork dimensions	s/e/l (mm)	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	4.23
4.24		Fork-carriage width	b <sub>3</sub> (mm)	980	980	980	980	980	4.24
4.31		Ground clearance, laden, below mast	m <sub>1</sub> (mm)	80	80	80	80	80	4.31
4.32		Ground clearance, centre of wheelbase	m <sub>2</sub> (mm)	100	100	100	100	100	4.32
4.33	Aisle width for pallets 1000x1200 crossways	Ast (mm)	3403	3526	3403	3526	3526	4.33	
4.34	Aisle width for pallets 800x1200 lengthways	Ast (mm)	3599	3725	3599	3725	3725	4.34	
4.35	Turning radius	Wa (mm)	1859	1985	1859	1985	1985	4.35	
4.36	Internal turning radius	b <sub>13</sub> (mm)	498	562	498	562	562	4.36	
Performance Data	5.1	Travel speed, laden/unladen	km/h	17.0/17.0	17.0/17.0	17.0/17.0	17.0/17.0	17.0/17.0	5.1
	5.2	Lift speed, laden/unladen	m/s	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	5.3
	5.5	Drawbar pull, laden/unladen	N	2150/2450	2100/2450	2000/2300	2000/2300	1900/2300	5.5
	5.6	Max. drawbar pull, laden/unladen	N	12700/12700	12700/12700	12400/12200	12400/12200	12300/12000	5.6
	5.7	Gradeability, laden/unladen	%	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	%	27/35	27/35	26/35	25/35	24/35	5.8
	5.9	Acceleration time, laden/unladen	s	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.	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
6.2		Lift motor rating at S <sub>3</sub> 15 %	kW	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	6.3
6.4		Battery voltage, nominal capacity K <sub>s</sub>	V/Ah	48/625	48/750	48/625	48/750	48/750	6.4
6.5		Battery weight	kg	855	1025	855	1025	1025	6.5
6.6		Battery dimensions l/w/h	mm	830/630/627	830/738/627	830/630/627	830/738/627	830/738/627	6.6
Others	8.1	Energy consumption acc. to VDI cycle	kWh/h	4.3 <sup>2)</sup>	4.5 <sup>2)</sup>	4.8 <sup>2)</sup>	4.8 <sup>2)</sup>	5.0 <sup>2)</sup>	6.6
	8.1	Type of drive control		impulse/AC	impulse/AC	impulse/AC	impulse/AC	impulse/AC	8.1
	8.2	Operating pressure for attachments	bar	200	200	200	200	200	8.2
	8.3	Oil volume for attachments	l/min	25	25	25	25	25	8.3
	8.4	Sound level at the driver's ear according to EN 12053	dB (A)	67	67	67	67	67	8.4
8.5	Towing coupling, type DIN		DIN 15170/H	DIN 15170/H	DIN 15170/H	DIN 15170/H	DIN 15170/H	8.5	

1) = 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)  
 2) 60 VDI working cycles/h, tolerances +/- 10% possible

# Make use of the advantages

## Superior operator comfort

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

- Low access steps. Large, level foot well with automotive pedal lay-out.
- Steering column and comfort seat allow multiple adjustments 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 (all functions in one lever) or MULTI-PILOT (optional), separate levers.
- Convenient storage for documents, tools and drinks.

## 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 Comfort Display.

## 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.

## Active safety

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

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

- Very low centre of gravity improves stability and residual capacity.
- Long wheelbase ensures stable handling and smooth travel.
- Electronic and hydraulic overload protection guard.
- Electronic differential 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  
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Jungheinrich trucks  
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