

**High performance electric counterbalance truck with side battery access and 4<sup>th</sup> generation AC technology**

**Electric hydraulic steering for improved operator comfort**

**New operating concept with SOLO- or MULTI-PILOT integrated in to the adjustable armrest**

**Automatic parking brake**

**Driver assistance systems (optional)**

**5 individually adjustable work programme**



## EFG 316–320

### Four-wheel electric counterbalance truck (1600, 1800, 2000 kg)

The newest generation of AC technology offers numerous advantages for electric counterbalance trucks:

- Minimal energy consumption due to high efficiency and energy recovery.
- Minimal service costs due to the reduction of mechanical and hydraulic components.
- Efficient electric hydraulic steering with AC technology.

The advantage: faster work cycles with significantly longer operating times from only one battery charge. Along with the reduced maintenance requirements, this results in low operating costs.

Changing the battery is simple and easy: the choice of three different battery changing options makes this easy for any user – even during three-shift operations.

The robust truck construction, user-friendly design and innovative technology ensures long term reliability.

- Robust construction with steel bumpers, steel bonnet and protected lights.
- Enclosed chassis – even under the battery – for added stability and protection.
- Maintenance-free components (e.g. brakes and transmission).
- Innovative technology with halogen bulbs and LEDs.



# Technical data in line with VDI 2198 as at: 08/2008

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 S <sub>2</sub> 60 min.	N	2150/2450	2100/2450	2000/2300	2000/2300	1900/2300	5.5
	5.6	Max. drawbar pull, laden/unladen S <sub>2</sub> 5 min.	N	12700/12700	12700/12700	12400/12200	12400/12200	12300/12000	5.6
	5.7	Gradeability, laden/unladen S <sub>2</sub> 30 min.	%	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 S <sub>2</sub> 5 min.	%	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
	E-Motor	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

The ergonomically designed operator's cab allows for relaxed operation with low fatigue, even during long shifts:

- Light and effortless electric hydraulic steering, reduces the number of steering wheel turns and a smaller steering wheel.
- The elimination of hydraulic components in the leg area reduces steering-related noise and provides more leg-room.
- The height and pitch of the steering column is adjustable.
- All essential controls are located on the adjustable armrests (adjustable height and length), making operation especially comfortable.
- Minimal vibration due to the decoupling of the cabin from the chassis ("Floating Cab").
- Clearly arranged operator display.

## Professional battery management

AC technology offers both improved efficiency as well as delete energy reclamation, for longer operation time between battery changes.

- Sideways battery access.
- Individual changing systems with hand pallet truck, forklift or crane.
- Simple, space-saving charging through side door.
- Easy access for maintenance.
- OnBoard charger with 2 charging periods – 8 or 12 hour for more flexibility and shorter charging time compared to the standard charger.

## Maintenance-free braking system

Three maintenance-free braking systems make braking safe and comfortable:

- Motor brake for regenerative braking during deceleration.
- Automatically engaging parking brake for secure stopping, even on ramps.



SOLO-PILOT

- Brake pedal operated, maintenance-free disc brakes during dangerous situations.

## Maintenance-free motors

The new generation of three-phase AC motors will impress you with their quiet and precise operation at all speeds.

- High torque for faster operation cycles.
- Lifetime lubrication of main components.
- Individually mounted drive motors for simpler servicing.
- Dust and water jet protection to IP 54.

## Safety systems

High performance also requires a high degree of safety. That's why the EFG Series 3 includes a comprehensive range of safety equipment:

- Deactivation of hydraulic functions when the operator seat is not occupied.
- No roll-back on ramps or inclines with the automatic parking brake, even when the vehicle is switched off.
- Automatic reduction of the driving speed during cornering, with Jungheinrich Curve Control.
- High pivot steer axle.
- Speedometer.

A range of driver assistance systems (optional) offer additional safety for the driver, truck and load:



MULTI-PILOT

- Access Control: the access control system unlocks the vehicle only after a sequence of safety checks:
  1. Valid access code/activation of key switch.
  2. Operation of the seat switch (operator in seat).
  3. Seatbelt is secured.
- Drive Control: automatically reduces the travel speed during cornering and at defined lift heights.
- Lift Control: controls the speed of lift and automatically reduces the tilt speed of the mast at defined lift heights. The tilt is shown on a separate display. An integrated sideshift (optional) can be automatically centralized at the push of a button.

## Intelligent electronics

- Jerk-free travel, smooth reversing and precise positioning.
- Optimally adapted to any situation using 5 individual work programmes.
- The monitoring of all components and saving of service data, allowing fast and low cost maintenance routines using the diagnosis system.
- Standard display of the steering wheel position and the travel speed.

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