Unique truck concept with front seat and side-mounted mast

Unrestricted view of forks, load and travel route

High flexibility through modular design and RFID technology

Up to 25 percent greater performance due to warehouse navigation with semi-automatic approach (optional)

High level of efficiency: Double benefit of energy recovery and effective energy management



EFX 410/413

Electric front seat/tri-lateral stacker (1,000/1,250 kg)

The tri-lateral stackers EFX 410 and EFX 413 with 48 V 3-phase AC technology, 1000 to 1250 kg capacity and lift heights up to 7000 mm represent versatility and excellent flexibility in the narrow aisle warehouse. The EFX can be used in either guided mode or as a free-ranging truck. The advantage: Combined operation in narrow aisles, wide aisles and the loading area. The EFX operator benefits: Thanks to comfortable entry and exit, the vibration-absorbing comfort seat which can be adjusted to the operator's weight and height and automotive pedal arrangement as in a car. Large storage areas, clear contours and the latest ergonomic operational devices make work significantly more pleasant and thus faster.

The focal point is the unique truck concept with a front seat and side-mounted mast for an unrestricted view of forks, load and

travel route. The performance-enhancing operating concept also features a control panel with infinitely variable height and distance adjustment and the large display. With a whole range of innovative features, this system represents the very latest in ergonomics:

- Ergonomic controls with thumb-activated control of hydraulic functions for lifting, lowering, turning and reaching.
- Integrated soft-feel steering wheel to aid precise, safe handling.
- Information is transmitted via graphic display. Important operating data is displayed rapidly and clearly in icon form.
- Outstanding visibility and unrestricted view of forks, load and travel route.



EFX 410/413



Standard values for working aisle widths (mm)								
with rail guidance								
Pallet size	Stacking depth	AST*	Ast ₃ /VDI theoretical	AST₃** prac- tical				
1200 x 800	1200	1740	3187	+500				
1200 x 1200	1200	1740	3486	+500				
800 x 1200	800	1390	3401	+500				
with wire guidance								
Pallet size	Stacking depth	Ast	Ast ₃ /VDI theoretical	AST ₃ ** prac- tical				
1200 x 800	1200	1810	3187	+1000				
1200 x 1200	1200	1810	3486	+1000				
800 x 1200	800	1460	3401	+1000				

* up to h3 = 4000 mm / for + 20 for h3 > 4000 – 6000 mm / + 70 mm for h3 > 6000 mm

** The practical intersecting aisle width is a guide value.



Standard mast types EFX 410/413							
	Lift	Lowered mast height	Free lift	Extended mast height			
	h ₃	h ₁	h ₂	h ₄			
	(mm)	(mm)	(mm)	(mm)			
Duplex ZT	30001)	2305	66	3772			
	3250	2430	66	4022			
	3500	2555	66	4272			
	3750	2680	66	4522			
	4000	2805	66	4772			
	4250	2930	66	5022			
	4500	3055	66	5272			
	4750	3250	66	5592			
	5000	3375	66	5842			
	5250	3500	66	6092			
	5500	3625	66	6342			
	5750	3750	66	6592			
	6000	3875	66	6842			
Triplex DZ	40001)	2100	1410	4690			
	42501)	2190	1500	4940			
	45001)	2280	1590	5190			
	4750	2370	1680	5440			
	5000	2460	1770	5690			
	5250	2550	1860	5940			
	5500	2640	1950	6190			
	5750	2730	2040	6440			
	6000	2820	2130	6690			
	6250	2910	2220	6940			
	6500	3000	2310	7190			
	6750	3090	2400	7440			
	7000	3180	2490	7690			

¹⁾ Attention: Overhead guard height 2277 mm or 2370 mm with strobe light on overhead guard

Technical data in line with VDI 2198

	1.1 Manufacturer (short form)				Jungheinrich		
	1.2	Model			EFX 410	EFX 413	
Identification	1.3	Drive			Elec	trics	
	14	Manual pedestrian stand-on seated order picker operation			tri-lateral stacker		
	1.5	Load capacity/rated load	0	t	1	1 25	
	16	Load centre distance	C	mm	-	0	
	1.8		x	mm	16	58	
	1.9	Wheelbase	V	mm	157		
	1 10	Centre of drive wheel/counterweight	7	mm	270		
ghts	211	Netweight incl. battery (see row 6.5)	~	ka	5080 5360		
	2.1.1	Axle load w load front / rear		ka	4860 / 1300	5370 / 1320	
Vei	2.2	Axie load, we load, front / rear		ka	3230 / 1850	3340 / 2020	
>	7 1			ĸġ	323071830		
els / ssis	3.1	Tyre size at front		mm	Ø 295 x 144		
	77	Tyre size, at rear		mm	Ø 343 x 110		
/he	3.5	Wheels, number front/rear ($\chi = driven wheels$)		111111	2 / 1		
> "	3.5	Track width front	h	mm	2 / 1x		
	1.0	Mast height (lowered)	b ₁₀	mm	28	05	
	1.2		h	mm	2805		
	4.5	Lift	h	mm	40	00	
	4.4	Extended most height	h	mm	40	72	
	4.5		h	mm	47	72	
	4.7	Field to over lead guard	п ₆	mm	12	22//	
	4.0	Total length (without load)	117	mm	71	1205	
	4.19.2		1	mm	2057		
	4.20		¹ 2 h /h	mm	2957		
	4.21		0 ₁ /0 ₂		1210 / 1550		
s	4.22	Fork carriage ISO 2728 class/tures A R	5/8/1	TTITT	40 / 100 / 1200		
jo	4.23	Fork carriage width	h	~~~	20		
sus	4.24	Width over forks	b	mm	890		
<u>ă</u>	4.23	Width over quide reliers	D ₅	mm	650		
U C	1 20	Peach sideways		mm	13	70	
asi	4.30	Peach sideways		mm	420		
-	4.30	Reach, sideways from centre of truck		mm	120		
	1 7 2		m	mm	953)		
	4.32	Aido width for pollots 1200 x 1200	Act	mm	1740		
	4.55.0		W	mm	1940		
	4.33	Distance swivelling fork nivet point	vv _a	mm	8/3		
	1 38 3	distance swiveling forks pivot-point		mm	675		
	4.30.3			mm	1200		
	4 38 5	Pallet length		mm	1200		
	4 38 9	Width of swivel reach frame		mm	1540		
	4 38 11	Distance swivelling forks pivot-point to back of forks		mm	267		
	5.1	Travel speed w / wo load		km/h	9	0/0	
e S	5.2	lift speed w / wo load		m/s	0.41 /	979	
an	5.3	Lower speed w / w o load		m/s	0.44 / 0.44		
orn dat	5.4	Traverse speed w. / w.o. load		m/s	0.2 /	0.21)	
erf	5.10	Service brake			regenerative		
<u>م</u>	5.11	Parking brake			electric spring-loaded		
	6.1	Drive motor rating S2 60 min.	kW		6.9		
S	6.2	Lift motor rating at \$3 25%		kW	9.	9.5	
Misc. Electri	6.3	Battery according to DIN 43531/35/36 A,B,C, no			5 PzS 625	6 PzS 750	
	6.4	Battery voltage/nominal capacity K5		V/Ah	48 / 625	48 / 750	
	6.5	Battery weight		kg	855	1010	
	8.1	Type of drive control			AC Co	ontrol	
	8.4	Sound pressure level at operator's ear according to EN 12053		dB (A)	66	66.5	
	8.6	Steering			elec	ctric	

³⁾ with transponder reader 45 mm

In accordance with VDI Guideline 2198 this specification sheet provides details of the standard truck only. Non-standard tyres, different masts, optional equipment, etc. may result in different values.

Benefit from the advantages



Pioneers of 3-phase AC technology

Over 150 000 Jungheinrich 3-phase AC trucks are in use all over the world. This depth of knowledge is reflected in today's drive and control technology: • High throughput levels.

- · Low energy consumption.

Control and CAN-Bus system

All movements can be parameterised.

Cost-effective energy management

- Doubled energy recovery through regenerative braking and lowering.
- Longer operating times on a single battery charge (up to 2 shifts).
- · Active energy / battery management.
- Longer battery life.
- · Shorter charging times.

RFID technology (optional)

- Truck control with transponder technoloav.
- · Permanent route measuring for precise identification of all warehouse areas.
- High degree of flexibility in terms of switching functions (end of aisle control, lift/travel cut-outs, travel speed reductions).
- Drive speeds optimised according to the floor flatness.

Jungheinrich warehouse navigation (optional)

- EFX is linked to a Warehouse Management System (WMS) by a radio data terminal or scanner.
- Direct loading of the destination in narrow aisles via the truck computer.
- Automatic vertical and horizontal positioning.
- Effective twin cycles.
- RFID location detection prevents trucks travelling to incorrect destinations.
- High level of flexibility in the warehouse with adaptation to existing WMS.
- Throughput improved by up to 25%.

Ergonomic benefits and comfort Ample entry room.

- Outstanding view of the load and travel route.
- · Cushioned comfort seat absorbs vibrations
- Operating console with adjustable height and distance from the operator.
- Soft keys with numeric keypad.
- · Limit position / transition damping for all hydraulic functions.

Commissioning and maintenance

- Quick and reliable commissioning through teach-in process.
- Maintenance interval of 1000 operating hours.

ARABIA

· Electronics with wear-free sensor system.

Reliable operation - high availability

- 70% fewer cables and plugs due to CAN-Bus system.
- · Robust and maintenance-free threephase AC drive systems - no wearing parts.

Additional equipment

- Mechanical rail guidance.
- Inductive guidance for precise control in the aisle with no mechanical loading of components.
- Radio with CD player and MP3 interface.
- Synchronised traverse.
- · Modular system for lift and travel cutouts as well as speed reduction.
- · Jungheinrich radio data terminals with mechanical and electrical interface for material flow management systems.
- Jungheinrich ISM Online: Information system for truck management.

Integrated Jungheinrich personnel protection system (PPS)

- On-site integration with the safety computer.
- · Project planning, commissioning and maintenance by Jungheinrich.



Earth Moving and Material Handling Equipment Jeddah-Al-Nahda Dist-Prince Sultan Str. Kingdom of Saudi Arabia P.O. Box 52269 Jeddah 21563 Email kbahaa@arabian-roots.com Mob +966 590950582 Tel +966 126996628 Ext: 245 Fax +966 126221473

The German production ISO 9001 facilities in Norderstedt and Moosburg are certified. ISO 14001



