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## Electric forward facing seat/ Three-in-one forklift EFX 410/413.

1000 and 1250 kg capacity.



Jungheinrich  
Plants, Sales and  
Services Europe  
ISO 9001/ISO 14001



Jungheinrich trucks  
conform to the European  
Safety Requirements.

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Machines. Ideas. Solutions.



## Narrow aisle – wide aisle – free path.

The truck concept for flexible operation.

The EFX 410/413, built with a modular design offers a flexible solution for combined use in narrow aisles, wide aisles as well loading areas. The forward facing seat and the Tri-Lateral mast arrangement

allows the load to be picked up directly from the floor. The Jungheinrich EFX offers maximum flexibility and efficiency for lift heights up to 7000 mm.

Narrow aisle warehouses require less floor space with high lift heights. Advantages:

- Good space utilisation.
- Direct access to each pallet space.
- FIFO-principle easily achieved.

The EFX is the “key” to getting the most out of these advantages. Its performance guarantees a good combination between racking and floor and creates the best conditions for producing high throughput rates.

## 3 ways. 2 Lifting capacity classes. 1 range.

The modular approach for the low lift narrow aisle trucks.



### Application based capacity classes

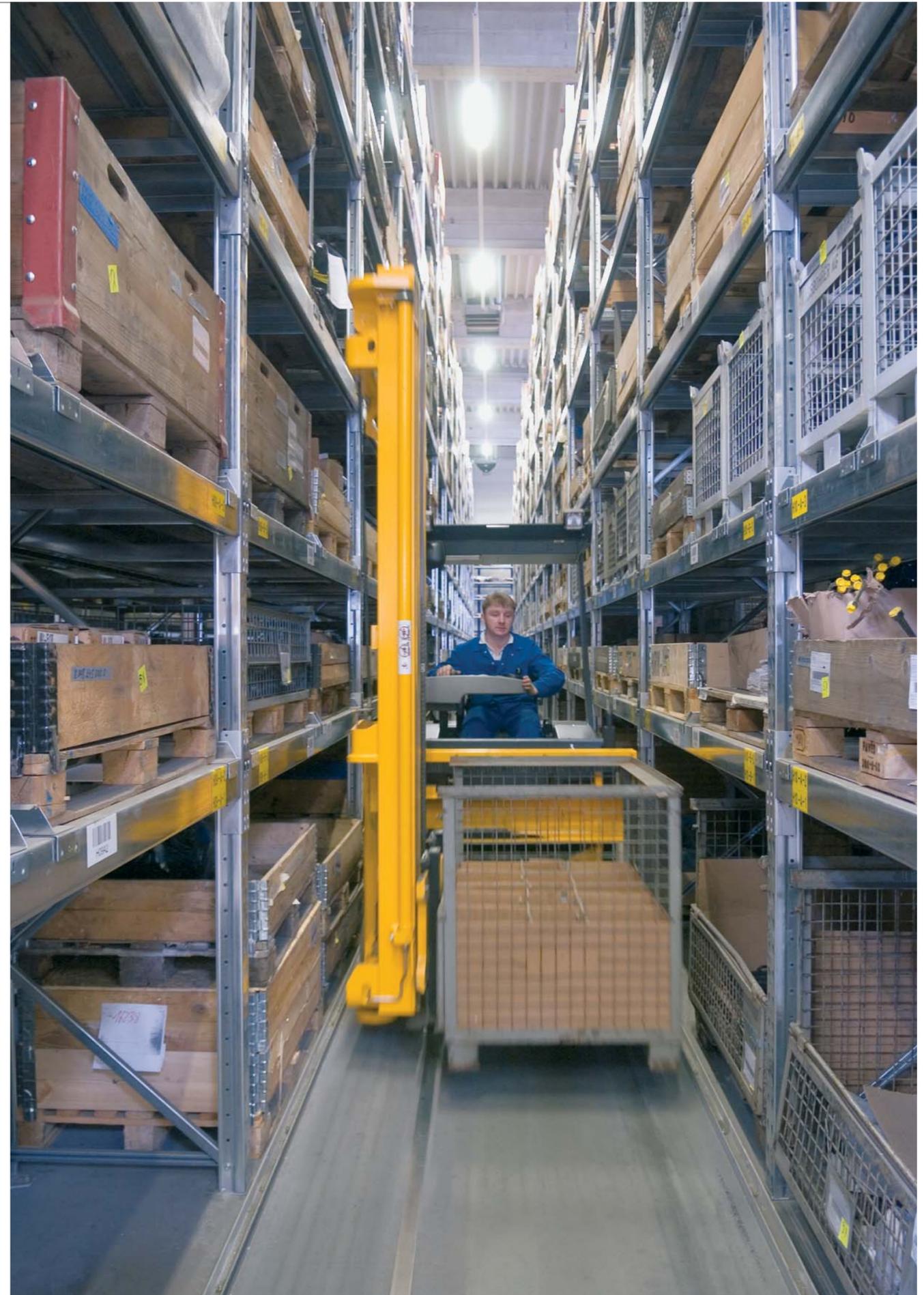
1000 kg (EFX 410) and 1250 kg (EFX 413) lifting capacities guarantee a cost effective compliment to every application. Additionally, both models use state of the art controls for all motors with 48-volt-3-phase AC technology.

### EFX 410

- 1000 kg capacity
- 7000 mm lift height

### EFX 413

- 1250 kg capacity
- 7000 mm lift height





## Advantage: All motors with 3-phase AC technology.

Drive your performance higher and your operating costs down!

### 3-phase AC technology has been proven time and time again

3-phase AC technology is a type of current generated from the normal power supply, proven time and time again in all areas of industry. The 3-phase AC technology motors are characterised by a significantly reduced number of components and moving parts. AC motors operate much more efficiently, reliably and are more cost-effective.

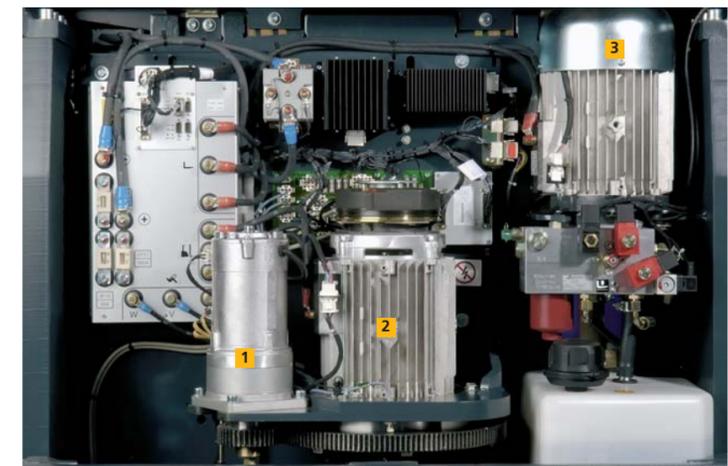
### Jungheinrich has made battery-powered forklifts "fit for 3-phase AC technology"

At the beginning of the 90s, Jungheinrich succeeded in converting dc into ac in a cost-effective way by using high performance frequency converters and thus made the advantages of 3-phase AC technology usable for battery-powered forklifts. The omission of direction con-

tactors and carbon brushes means as well as the increase in performance there is a significant reduction in operating costs for order pickers and high rack stackers. Today, all main categories of Jungheinrich trucks are equipped with 3-phase AC technology.

### All motors with 3-phase AC technology

The results of the EFX in using 3-phase AC technology for drive, lifting and steering motors is; higher productivity rates due to higher speed and strength in high starting torques, even at low revs.



1 Steering motor  
2 Driving motor  
3 Lifting motor





## Advantage: Increase customer profitability.

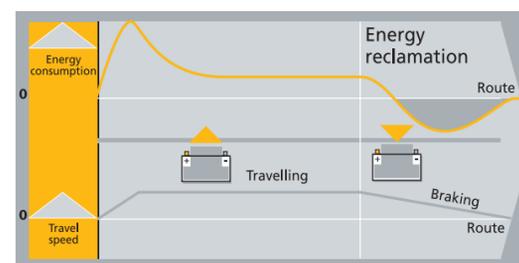
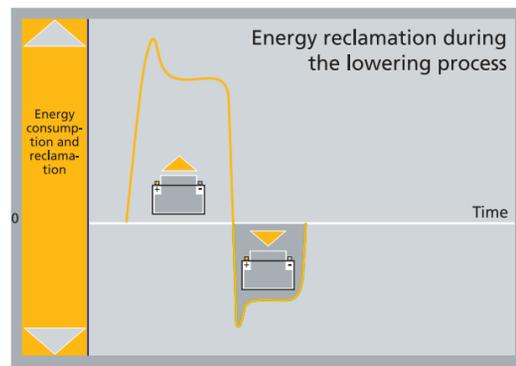
While at the same time reducing budgets and costs.

### Energy efficiency due to an energy recovery system

During both the lowering of the forks and wear-free deceleration inductive

braking, energy is returned to the battery. The energy gained in this way is available for the next operational current demand in lifting or for travelling.

This lowers energy costs and prolongs the life of the battery.



### Good heat balance through optimised control modes

Due to the laws of physics, heat sources always cause energy loss. Jungheinrich has reduced this to a minimum by the use of 3-phase AC technology.

### The Advantages:

- Significantly reduced heating of motors through lower revs
- Low increase of hydraulic oil temperature through throttle-free valve technology
- Loss of passive hydraulic oil cooling via steel tanks by using corrosion free plastic tanks
- Further reduction of energy consumption

### Matched batteries and chargers

More energy through synergy. Following this motto, Jungheinrich offers forklifts, batteries and chargers from a single source. A system that suits your requirements 100 percent.

**Your advantage:** maximum use of your trucks, added energy when needed and cost effectiveness. This is more economic for batteries and also budgets.



1 Hydraulic drive  
2 Valve block  
3 Plastic tank



## Advantage: High reliability.

### AC-Drive controller

The new Jungheinrich AC-drive controller combines the three basic functions hydraulics, control and travelling into one single unit.

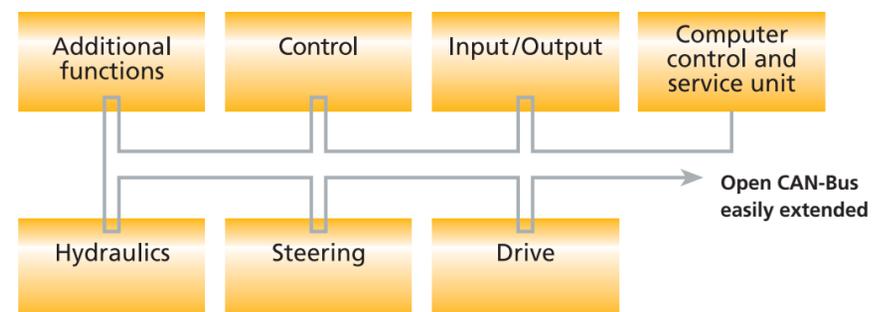
### The Advantages:

- Powerful, effective control through optimised efficiency
- Maximum reliability through an ideal interaction between controller and drive components
- Maximum serviceability through an easily exchangeable interface card

### CAN-Bus-control

#### for safe data transfer

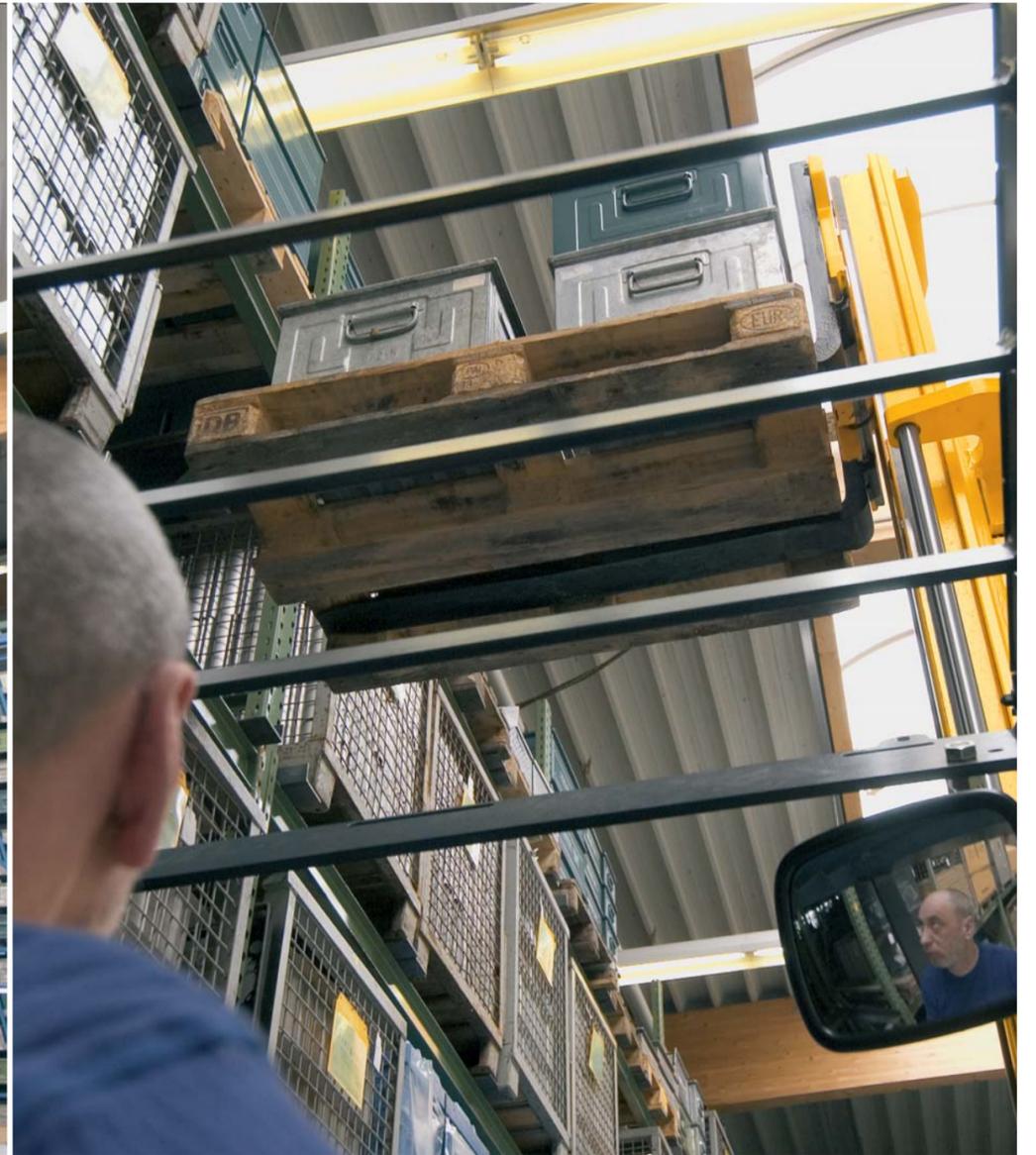
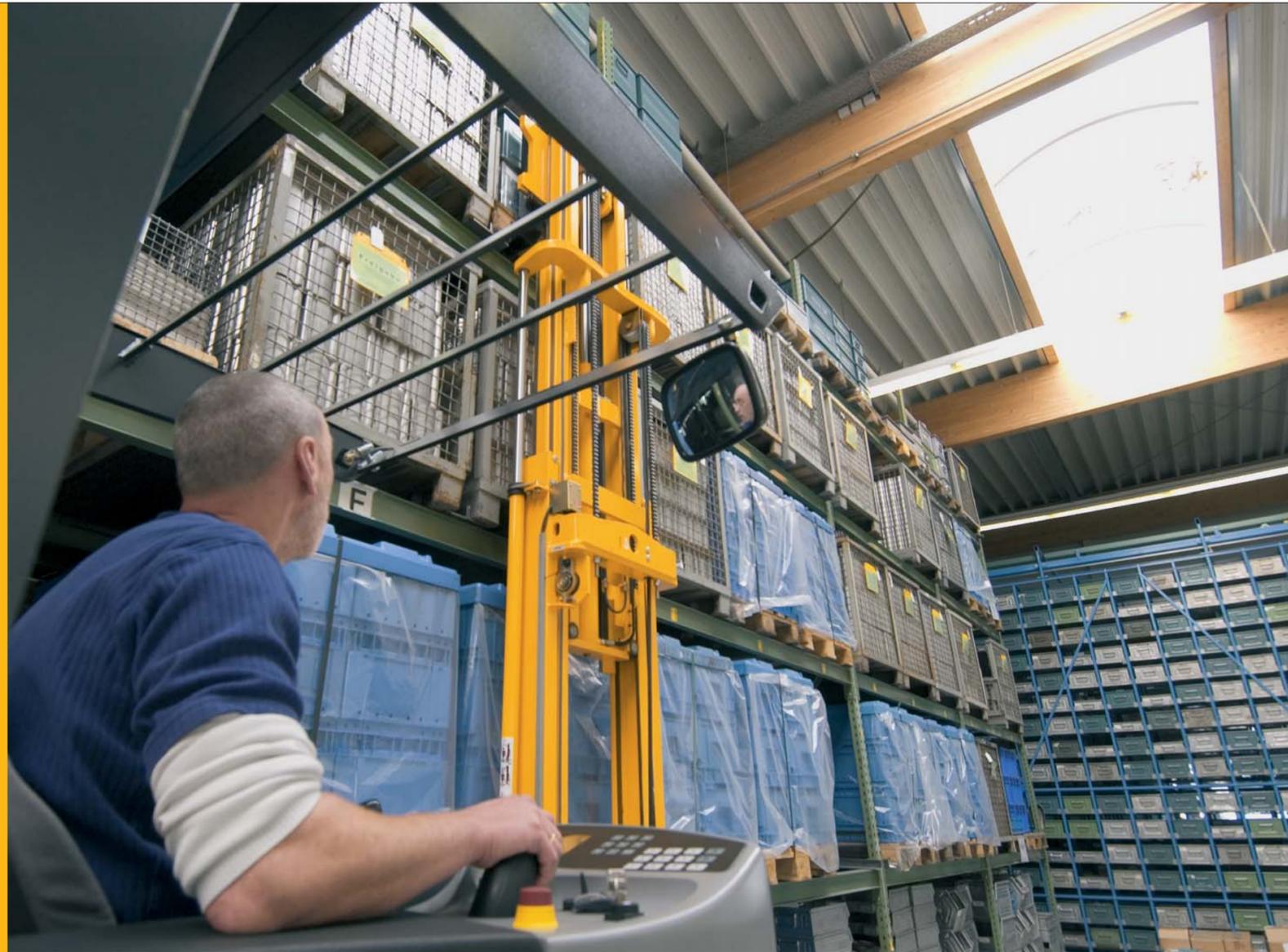
Hardly any other technology has influenced the information exchange between on-board forklift components more strongly than CAN-Bus. All sensors communicate with the on-board computer via simple data lines. Quality, speed and flexibility in data transfer via CAN-Bus makes the use of the EFX as safe and reliable as never before.



All basic functions in one control block.



Easily interchangeable interface card.



## Advantage: Perfect vision.

You can trust your own vision.

The elevated driver's seat combined with the laterally positioned mast guarantees a clear vision of the working area and

the load. The advantage is immediately obvious; improved handling throughput rate through high visibility.



## Advantage: Perfect ergonomics.

### Form follows function.

#### Intuitive control for more comfort and speed

Let your hands do the talking as the lifting and lowering movements are controlled by thumb actions on the EFX: If the thumb moves upwards, the lifting movement is activated. If the thumb

moves downwards, the lowering movement is activated. These natural motions not only simplify work, they are also particularly easy on the wrists.

#### Everything under control on the console

Because the console is adjustable to the driver for height and distance, the EFX can be steered with ease. The graphic display shows the most important data quickly, clearly arranged and easily legible with the use of symbols.

#### Drive regulator



Safe grip and intuitive, precise control through thumb movement.

#### Steering wheel

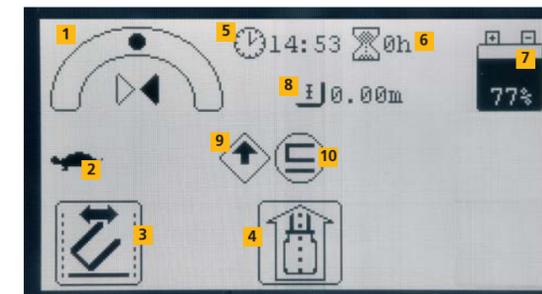


The steering performance of the generously sized steering wheel can be adjusted to individual requirements.

- 1 Steering wheel
- 2 Selection switch, rotate/traverse
- 3 Programmable keys (e.g. Turning on/off of guide control via tracks or inductive guide wire)
- 4 Graphic display
- 5 Key pad pre-height selection (optional extra)
- 6 Hand rest Lifting/Lowering/Rotating/Traversing
- 7 Horn
- 8 Armrest
- 9 Emergency stop
- 10 Key switch
- 11 Travel direction indicator switch



#### Graphics capable display



- 1 Position of steering wheel
- 2 Travel speed selected
- 3 Attachment operation
- 4 Selection inductive guidance
- 5 Time
- 6 Operating hours
- 7 Battery charge condition
- 8 Fork height
- 9 Travelling direction indicator
- 10 Load carrying unit position



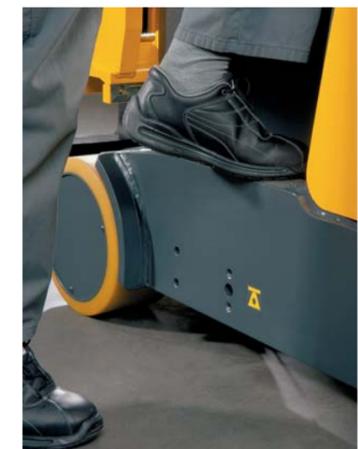
**Safety and comfort right from the start**

Efficiency begins in the driver's cabin – with the operator. A multitude of performance enhancing ergonomic features considerably assists in day to day work.

- Wide foot and legroom
- Comfort seat which absorbs vibrations and is adjustable to height and weight
- Comfort seat with adjustable armrest (left) and armrest (right)
- Pedals arranged as in a car
- High quality craftsmanship
- All controls can be reached easily and quickly



The easily accessible pedal switch for releasing the dead man brake increases the safety for the operator.



Easy entry and exit over a low cabin floor.



## Complete solutions for complete internal logistics.

Customer Service, Racking Systems, Warehouse Planning, Rental/Financial Services.

Pallet trucks, forklift trucks, order pickers and tow tractors in more than 600 truck variants. Added to this is a multitude of additional services. This makes Jungheinrich into an internal a logistics services provider who will pave your way towards a complete logistics solution.

### Direct Customer Service network

Circa 500 of our own service engineers are available in 6 countrywide locations. Every one of them is a Jungheinrich professional: mechanic, electrician, electronics and hydraulics specialist combined in one person. And he will usually be with you within four hours.



### For the right truck the right racking

Jungheinrich provides you with the complete solution: comprehensive warehouse planning that sees truck and racking as a system working "hand in hand". From projecting via CAD planning to handing over the key. From shelving via system-built platforms right up to high bay racking. From consultation via assembly to Service. Everything from one supplier. Everything from Jungheinrich, your "architect" for complete internal logistics.

### Financial Services and Rental Service

Jungheinrich provides you with a number of tailor-made solutions that optimally adapt to your general economic, tax and balance sheet conditions – even if these change during the course of time. So that you always react flexibly. Your specialist adviser will be pleased to calculate which solution would be the most optimal for your application.

