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GX-X

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GX-Q

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## GX-X/GX-Q Technical data.

Racking truck with turret head.

Racking truck with telescopic forks.



## Racking truck with turret head/ telescopic forks.

STILL presents the modern and futuristic GX-X with OPTISPEED.

Here are the features for this generation of trucks:

- Modular build design.
- Flexible in use.
- Scalable dimensions and performance.
- Ergonomic work station.
- High handling capacity.
- Low energy consumption.
- Low operating costs.
- Innovative Optispeed concept is ahead of its time.

### Driver's compartment.

- Roomy driver's compartment with adjustable controls and great leg room. For added safety, the driver is always kept within the contours of the truck.
- Damped driver's compartment (optional) greatly reduces impacts and shocks from uneven floors, significantly reducing operator back problems and subsequent absenteeism.
- Proportional seat and floor plate adjustment with electrical rail adjustment (optional) provides ergonomic adjustment of the controls for the best view onto the fork tips, whatever the physique.
- Luxury tilting seat with individual weight and horizontal adjustments is gentle on the neck when looking upwards at the load, or when looking around the side of the mast.
- Open steps enable trouble free entry and exit.
- Individual storage facilities with large utensil compartments, A4 storage areas and drinks holders.
- High level of safety due to optimised visibility overhead guard with inclined strut arrangement and superb all-round vision.
- An ergonomic joystick with maintenance-free sensor technology for the actuation of all hydraulic functions without changing grip and noticeable direction selection.

### Modern efficient technology.

- Energy recovery when braking and when lowering the main lift.
- Three-phase drive technology for peak performance with high efficiency and low operating costs. Wear-free for high availability and greater handling capacity.
- Peak speeds - even when lowering unladen in auxiliary lift.
- Powerful low wear hydraulics.
- Sensitive secondary movements thanks to proportional valve technology.
- Powerful, effective hoist movements, pump speed regulated by on/off valve technology.
- Particularly low wear due to low working pressure and integral high pressure filter.
- Compact, stable build for optimal utilisation of space and safe working - even at extreme heights.
- Smaller aisle widths or greater safety clearances due to turret head with integral overreach.
- Integral height measurement system for precise positioning of the forks.
- Maximum residual capacity due to optimal matching of the truck width to the aisle width.
- Speedy, trouble-free entry into the aisle thanks to the variably adjustable mechanical rail guidance.



### OPTISPEED Version 3.x - the futuristic control concept.

The excellent performance data and optimal technical conditions of the GX-X can only be fully utilised by OPTISPEED 3 x, both for driving and hoisting, and also for secondary movements.

- Powerful microprocessor, drive and hoist pulse controller.  
The individual controls, sensors and actuators are cross linked by CAN bus.
- The CAN Bus with CAN Open protocol provides high flexibility and quick service access.
- The height measurement system provides the absolute fork height. Thanks to the non-slip, reliable height detection, also incorporating the auxiliary lift, performance-optimised driving profiles and load change cycles can be realised.

### Features.

- Made-to-measure performance by the selection and suitable combination of the drives.
- Quick load changes thanks to automatic adjustment of the deceleration and acceleration ramps.
- Dynamic, intelligent load diagram for greater safety in the warehouse.
- Increased turnover of goods due to standard synchronous slewing in the aisle and in front of the racking.
- Increased performance due to the optional equipment: load sensing and weight measurement.
- Less damage to the truck, goods and equipment due to individual adjustment of the speeds, end positions, acceleration and deceleration to the application conditions.
- Greater functional convenience/safety as all moving axes are continuously measured and monitored.
- Effective configuration, diagnosis and maintenance through a modem or with the Service Tool Box through a central interface
- Fast reaction time due to on-board diagnosis at the operating panel.
- Safe and fast commissioning by the „teach-in“ process for the main functions, directly on the operating panel.
- Individual driver settings - ergonomics and driving comfort can be specifically adjusted to the application conditions and the operator, for truly optimised performance.
- Improved access control thanks to optional PIN code instead of key.
- Integral height pre-selection for fast, safe and comfortable height positioning (optional).
- Automatic forks cycle for quicker and easier load changes.



### **Steering.**

- Electric steering acting directly on the drive through a gear for easy accurate positioning.
- Free ranging, mechanically or inductively guided in the racking, with automatic straight ahead setting of the steered drive wheel and non-contact aisle recognition.

### **Chassis.**

- Rigid steel structure with large running wheels for high driving comfort.
- Optional removable battery side plates protect the battery and round off the overall image of the chassis design.
- Various chassis widths.

### **Masts.**

- Telescopic mast "Light" optimised for smaller loads of up to 1,000 kilograms.
- Telescopic mast as standard.
- Triplex mast with free lift for wherever joists, doorways or fixtures make a lower closed mast height necessary.
- Three-point mast structure, sturdy and rigid for congenial working even at extreme heights.

### **Turret head with auxiliary lift.**

A functional group for load pick-up on three sides, with integral controller and hydraulics. Unnecessarily long connections such as cables and hydraulic hoses are done away with, increasing operating reliability in the long term. Diagnosis and maintenance becomes easier and faster.

- Great flexibility due to synchronous rotation, enabling the operator to service the left and right hand sides of the racking in a single pass.
- The total lift height is increased by the auxiliary lift (optional).
- Optimal space utilisation - right up to the ceiling. Higher handling capacity due to simultaneous lowering with the main lift.
- High lowering speed even with low load weights.

### **Hydraulics.**

The truck is fitted as standard with proportional valve technology for particularly sensitive and smooth control of secondary movements. The hoist pump speed controlled through on/off valves by the hoist pulse controller for maximum effectiveness.

- All movements can be separately and individually adjusted to the application conditions.
- All end positions are approached gently and smoothly.
- Up to 15% energy recovery is possible due to the hoist motor acting as a generator when lowering.
- The bypass concept when lowering allows sensitive, precise positioning.

### **Three-phase drive technology.**

The low wear, low maintenance drive units combined with the offload switching MOSFET technology are the basis for an efficient, robust and economical drive concept.

- 48-volt drive modules.
- Monitoring and display of the drive states for effective preventive maintenance.
- The enclosed air-cooled three-phase motor does not move with the steering, so there are no cable connections under stress.
- Generously dimensioned gearbox and drive wheel for high driving comfort and safety.
- High torque and peak speeds with particularly sensitive control for driving, independent of the load. Economical for low energy consumption and maintenance, with above-average performance.

### **Brake system.**

- Generator brake as a service brake. Electrical spring-loaded brake for parking/securing and as an emergency stop.
- Two independent braking systems operate practically wear free.
- Optional running wheel brake to increase the braking and driving performance.

### **CAN bus.**

- All controllers, sensors and actuators are linked to each other.
- Great flexibility due to central access to all units and functions.
- High level of safety due to tried and tested technology from the car and commercial vehicle field.
- Additional operating reliability thanks to less wiring and fewer sensors.

### **Battery compartment.**

Battery changing from one side using a roller track with battery changing frame.

### **Auxiliary equipment in the driver's workplace.**

- Hydraulically damped driver's seat.
- Proportional seat and floor plate adjustment.
- Tilting seat.
- Seat heater.
- Workplace illumination.
- Working spotlights.
- Reading lamp.
- DIN A4 writing surface with document clip.
- Overhead guard covers in Macrolon or mesh grid.
- Preparation for radio installation integrated in the overhead guard.
- Fork camera systems with integral colour display.
- Panoramic rear-view mirror.
- Climbing aid on overhead guard leg.
- Digisound - acoustic interval signals.
- PIN code access authorisation through numeric key pad.
- Standardised interface for data terminal, scanner, printer.
- Dual pedal control.

### **Auxiliary equipment - turret head.**

- Fork carriages for different pallets.
- Various attachment frames.
- Overreach for turret head.
- Hydraulics turret head functions.
- Tooth flank guard in the area of the turret head (recommended for bagged goods).
- Three variants of hydraulic fork adjuster.
- Load sensing.
- Weight sensing.
- Weight measurement.
- Fork sideshift cut-out.

### **Battery compartment and battery.**

- Various capacities of 48-volt battery for different power classes.
- Battery roller track for side battery changes.
- Side battery locking device, electronically monitored.
- Battery compartment side covers.
- Cable set for replacement battery.

### **Safety.**

- Automatic braking at end of aisle, various versions.
- Hoist cut-outs and various drive cut-outs.
- Integral mobile personal protective equipment.
- Additional braking system for the load wheels.

### **Automation components.**

- Automatic fork cycle.
- Lift height preselection system.
- Semi-automatic shelf approach, OPTISPEED 4.0.
- Automation interface for unmanned fully automatic operation.
- Materialflow Management MMS, radio data transfer with data terminal, terminals, printer and scanner. Increases the efficiency by paperless Materialflow control.

### Telescopic mast "light" with turret head

(all heights given in mm)

Type 1*	Total lift from floor	Total lift	Main lift	Height lowered	Aux. lift 2*	Greatest Height 3*
Overall height $h_1$	$h_{25} (h_3+h_9+h_{13})$	$h_{24} (h_3+h_9)$	$h_3$	$h_{13}$	$h_9$	$h_4 (h_3+2200)$
4,900	8,655	8,595	7,600	60	995	9,800
4,400	7,655	7,595	6,600	60	995	8,800
3,900	6,655	6,595	5,600	60	995	7,800
3,400	5,655	5,595	4,600	60	995	6,800
2,900	4,655	4,595	3,600	60	995	5,800
2,400	3,655	3,595	2,600	60	995	4,800
2,200	3,255	3,195	2,200	60	995	4,400

### Telescopic mast with turret head

(all heights given in mm)

Type 1*	Total lift from floor	Total lift	Main lift	Height lowered	Aux. lift 2*	Greatest Height 3*
Overall height $h_1$	$h_{25} (h_3+h_9+h_{13})$	$h_{24} (h_3+h_9)$	$h_3$	$h_{13}$	$h_9$	$h_4 (h_3+2200)$
4,900	8,255	8,195	7,200	60	995	9,400
4,400	7,255	7,195	6,200	60	995	8,400
3,900	6,255	6,195	5,200	60	995	7,400
3,400	5,255	5,195	4,200	60	995	6,400
2,900	4,255	4,195	3,200	60	995	5,400
2,400	3,255	3,195	2,200	60	995	4,400
2,200	2,855	2,795	1,800	60	995	4,000

### Triplex mast with turret head

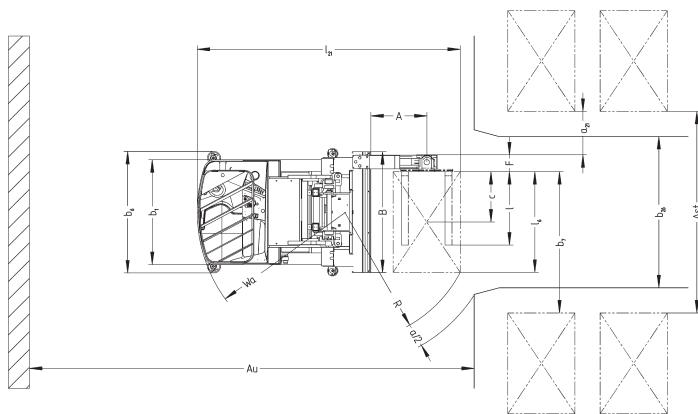
(all heights given in mm)

Type 1*	Total lift from floor	Total lift	Main lift	Free lift	Height lowered 1*	Aux. lift 2*	Greatest Height 3*
Overall height $h_1$	$h_{25} (h_3+h_9+h_{13})$	$h_{24} (h_3+h_9)$	$h_3$	$h_2$	$h_{13}$	$h_9$	$h_4 (h_3+2200)$
3,900	8,505	8,445	7,450	2,650	60	995	9,650
3,400	7,405	7,345	6,350	2,150	60	995	8,550
2,900	6,105	6,045	5,050	1,650	60	995	7,250
2,400	4,605	4,545	3,550	1,150	60	995	5,750
2,200	4,005	3,945	2,950	950	60	995	5,150

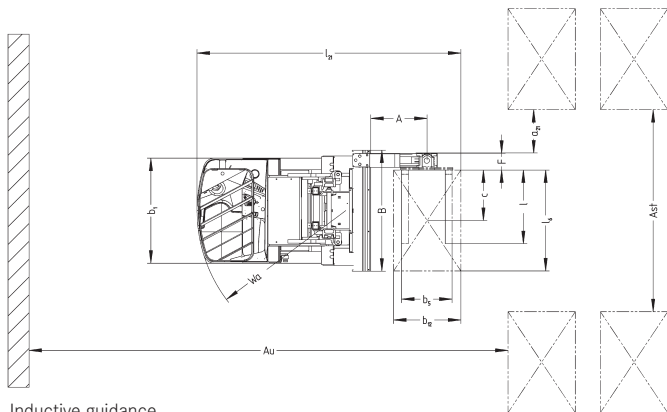
1\* Intermediate overall heights on request

2\* No intermediate lift is used:  $h_9 = 0$  mm

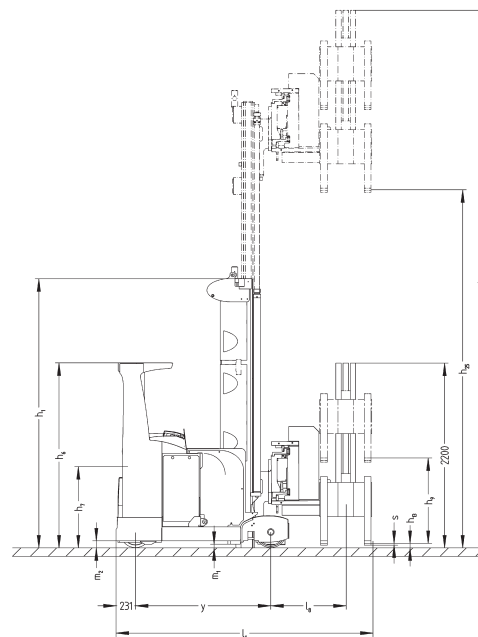
3\* Without auxiliary lift the attachment overall height is 1,450 mm



Rail guidance



Inductive guidance



## GX-X Racking truck with turret head

				STILL	STILL
Characteristics	1.1	Manufacturer			
	1.2	Manufacturer's model designation		GX-X TE	GX-X TR
	1.3	Drive (electric, diesel, petrol LPG, mains)		Electric	Electric
	1.4	Controls (Hand, pedestrian, stand on, seated, order picker)		Stand-on/Seated	Stand-on/Seated
	1.5	Capacity/load		Q	kg
	1.6	Load centre		c	mm
Weights	1.9	Wheel base		y	mm
	2.1	Truck weight (inc. battery)			kg
	2.2	Axle load laden, drive end/load end			kg
Wheels	2.3	Axle load unladen, drive end/load end			kg
	3.1	Tyres		Polyurethane	
	3.2	Tyre diameter/width drive end			mm
	3.3	Tyre diameter/width load end			mm
	3.5	Number of wheels (x=drive wheel) drive end/load end			
	3.6	Track width, front		b <sub>10</sub>	mm
	3.7	Track width, rear		b <sub>11</sub>	mm
Basic dimensions	4.2	Height, mast lowered		h <sub>1</sub>	mm
	4.3	Free lift		h <sub>2</sub>	mm
	4.4	Lift		h <sub>3</sub>	mm
	4.5	Height, mast raised		h <sub>4</sub>	mm
	4.7	Height over overhead guard (cab)		h <sub>6</sub>	mm
	4.8	Standing height, lowered		h <sub>7</sub>	mm
	4.15	Height lowered		h <sub>13</sub>	mm
	4.19	Overall length (inc. forks)		l <sub>1</sub>	mm
	4.21	Overall width load wheel axle		b <sub>1</sub> /b <sub>2</sub>	mm
	4.22	Fork dimensions		s/e/l	mm
	4.23	Fork carriage DIN 15173 Class/Form A.B			mm
	4.24	Fork carriage width		b <sub>3</sub>	mm
	4.25	Overall fork width min./max.		b <sub>5</sub>	mm
	4.27	Width over guide rollers		b <sub>6</sub>	mm
	4.29	Side shift		b <sub>7</sub>	mm
	4.31	Floor clearance under mast, laden		m <sub>1</sub>	mm
	4.32	Floor clearance, centre of wheel-base		m <sub>2</sub>	mm
	4.34	Working aisle width		A <sub>st</sub>	mm
	4.35	Turning radius		W <sub>a</sub>	mm
	4.38	Distance to turret head pivot point		l <sub>a</sub>	mm
4.39	Length of traverse arm		A	mm	
4.40	Width, side-shift carriage		B	mm	
4.41	Width of traverse arm		F	mm	
4.42	Transfer aisle width, min		A <sub>u</sub>	mm	
Performance	5.1	Travel speed laden/unladen			km/h
	5.2	Hoist speed laden/unladen			m/s
	5.3	Lowering speed laden/unladen			m/s
	5.4	Side-shift speed laden/unladen			m/s
	5.9	Acceleration time (over 10 m) laden/unladen			s
	5.10	Service brake			
E-Motor	6.1	Drive motor, rating			kW
	6.2	Hoist motor, rating			kW
	6.3	Battery to IEC 254-2 A, B, C, No			
	6.4	Battery type, voltage, Rated capacity C <sub>5</sub>			V/Ah
	6.5	Battery weight +/- 5% (depends on make)			kg
Misc.	8.1	Drive control			
	8.4	Sound level, drivers ear			dB(A)

Figures can vary by +/- 10%. The calculated drive profiles are based on our floor guidelines. Subject to technical changes.

\* The figures are scaleable and conform to the customer's individual requirements

### Telescopic mast "light" with telescopic forks

(all heights given in mm)

Type 1*	Total lift from floor	Total lift	Main lift	Height lowered	Greatest Height
Overall height $h_1$	$h_{25} (h_3+h_9+h_{13})$	$h_{24} (h_3+h_9)$	$h_3$	$h_{13}$	$h_4$
4,900	7,980	7,600	7,600	380	8,700
4,400	6,980	6,600	6,600	380	7,700
3,900	5,980	5,600	5,600	380	6,700
3,400	4,980	4,600	4,600	380	5,700
2,900	3,980	3,600	3,600	380	4,700
2,400	2,980	2,600	2,600	380	3,700
2,200	2,580	2,200	2,200	380	3,300

### Telescopic mast with telescopic forks

(all heights given in mm)

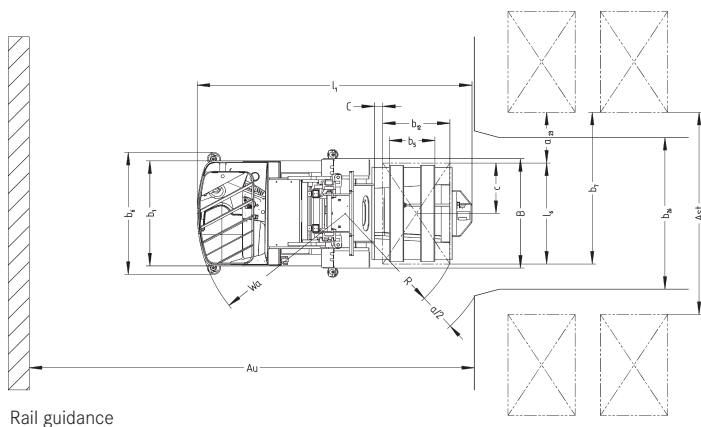
Type 1*	Total lift from floor	Total lift	Main lift	Height lowered	Greatest Height
Overall height $h_1$	$h_{25} (h_3+h_9+h_{13})$	$h_{24} (h_3+h_9)$	$h_3$	$h_{13}$	$h_4$
4,900	7,580	7,200	7,200	380	8,500
4,400	6,580	6,200	6,200	380	7,500
3,900	5,580	5,200	5,200	380	6,500
3,400	4,580	4,200	4,200	380	5,500
2,900	3,580	3,200	3,200	380	4,500
2,400	2,580	2,200	2,200	380	3,500
2,200	2,180	1,800	1,800	380	3,100

### Triplex mast with telescopic forks

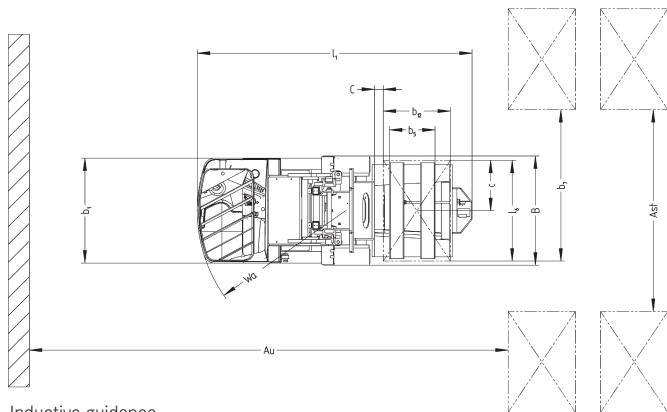
(all heights given in mm)

Type 1*	Total lift from floor	Total lift	Main lift	Free lift	Height lowered 1*	Greatest Height
Overall height $h_1$	$h_{25} (h_3+h_9+h_{13})$	$h_{24} (h_3+h_9)$	$h_3$	$h_2$	$h_{13}$	$h_4$
3,900	7,830	7,450	7,450	2,650	380	8,700
3,400	6,730	6,350	6,350	2,150	380	7,600
2,900	5,430	5,050	5,050	1,650	380	6,300
2,400	3,930	3,550	3,550	1,150	380	4,800
2,200	3,330	2,950	2,950	950	380	4,200

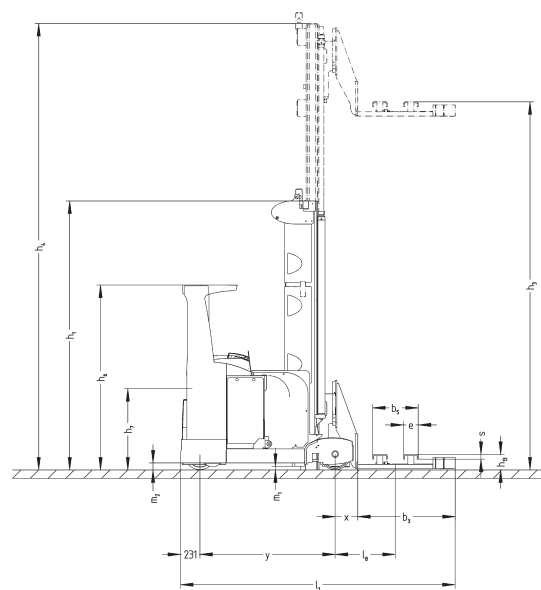
1\* Intermediate overall heights on request



Rail guidance



Inductive guidance





## GX-Q Racking truck with Telescopic Forks

Characteristics	1.1	Manufacturer			STILL	STILL
	1.2	Manufacturer's model designation			GX-Q TE	GX-Q TR
	1.3	Drive (electric, diesel, petrol LPG, mains)			Electric	Electric
	1.4	Controls (Hand, pedestrian, stand on, seated, order picker)			Stand-on/Seated	Stand-on/Seated
	1.5	Capacity/load	Q	kg	1250	1250
	1.6	Load centre	c	mm	600	600
Weights	1.9	Wheel base	y	mm	1811	1943
	2.1	Truck weight (inc. battery)		kg	5848*	6799*
	2.2	Axle load laden, drive end/load end		kg	1864/5234*	2217/5832*
Wheels	2.3	Axle load unladen, drive end/load end		kg	2344/3504*	2654/4145*
	3.1	Tyres			Polyurethane	
	3.2	Tyre diameter/width drive end		mm	360/140	360/140
	3.3	Tyre diameter/width load end		mm	370/160	370/160
	3.5	Number of wheels (x=drive wheel) drive end/load end			1x/2	1x/2
	3.6	Track width, front	b <sub>10</sub>	mm	1240	1240
	3.7	Track width, rear	b <sub>11</sub>	mm	0	0
Basic dimensions	4.2	Height, mast lowered	h <sub>1</sub>	mm	3400	3400
	4.3	Free lift	h <sub>2</sub>	mm		2150
	4.4	Lift	h <sub>3</sub>	mm	4200	6350
	4.5	Height, mast raised	h <sub>4</sub>	mm	5500*	7600
	4.7	Height over overhead guard (cab)	h <sub>6</sub>	mm	2200	2200
	4.8	Standing height, lowered	h <sub>7</sub>	mm	1050	1050
	4.15	Height lowered	h <sub>13</sub>	mm	380	380
	4.19	Overall length (inc. forks)	l <sub>1</sub>	mm	3487*	3619*
	4.21	Overall width load wheel axle	b <sub>1</sub> /b <sub>2</sub>	mm	1250/1450	1250/1450
	4.22	Fork dimensions	s/e/l	mm	65/174/1200	65/174/1200
	4.24	Fork carriage width	b <sub>3</sub>	mm	1165	1165
	4.25	Overall fork width min./max.	b <sub>5</sub>	mm	545/545	545/545
	4.27	Width over guide rollers	b <sub>6</sub>	mm	1595	1595
	4.29	Side shift	b <sub>7</sub>	mm	1400	1400
	4.31	Floor clearance under mast, laden	m <sub>1</sub>	mm	40	40
	4.32	Floor clearance, centre of wheel-base	m <sub>2</sub>	mm	80	80
	4.34	Working aisle width	A <sub>st</sub>	mm	variable*	variable*
4.35	Turning radius	W <sub>a</sub>	mm	variable*	variable*	
4.38	Distance Telescopic forks - mid-point	l <sub>a</sub>	mm	variable*	variable*	
4.39	Length of Telescopic fork bed	A	mm	variable*	variable*	
4.40	Width, side-shift carriage	B	mm	variable*	variable*	
4.42	Transfer aisle width, min	A <sub>u</sub>	mm	variable*	variable*	
Performance	5.1	Travel speed laden/unladen		km/h	variable*	variable*
	5.2	Hoist speed laden/unladen		m/s	variable*	variable*
	5.3	Lowering speed laden/unladen		m/s	variable*	variable*
	5.4	Side-shift speed laden/unladen		m/s	variable*	variable*
	5.9	Acceleration time (over 10 m) laden/unladen		s	variable*	variable*
	5.10	Service brake			Generator	
E-Motor	6.1	Drive motor, rating		kW	6.5 kW/S2=60 min	
	6.2	Hoist motor, rating		kW	24 kW/S3=15%*	
	6.3	Battery to IEC 254-2 A, B, C, No			IEC 254-2; C	
	6.4	Battery type, voltage, Rated capacity C <sub>s</sub>		V/Ah	PzS, 48 V, 1120 Ah	
	6.5	Battery weight +/- 5% (depends on make)		kg	1688	
Misc.	8.1	Drive control			Microprocessor	
	8.4	Sound level, drivers ear		dB(A)	68	

Figures can vary by +/- 10%. The calculated drive profiles are based on our floor guidelines. Subject to technical changes.

\* The figures are scaleable and conform to the customer's individual requirements

## Telescopic forks

Two versions  $h_{13} = 180 \text{ mm}$  or  $h_{13} = 380 \text{ mm}$

							$a_{21} = 90 \text{ mm}$		
$l_6 \times b_{12}$ pallet	A	a22	x	$l_8$	$b_3$	$b_7$	$A_{st}$	$A_u \text{ min.}$	Q max.
1200x800	450	50	298	748	1165	1350	1380	variable*	1250
1200x1000	550	50	298	848	1365	1350	1380	variable*	1000
1200x1200	650	50	298	948	1565	1350	1380	variable*	800
1240x835	450	30	298	748	1165	1400	1420	variable*	1250
1300x1300	700	50	298	998	1665	1450	1480	variable*	800

\* The figures are scalable and conform to the customer's individual requirements

