

MX-X, MX-Q Technical data.

Order picking truck with turret head.



Achieve more.

MX-X.

Order picking truck with turret head.

A modern, new-generation truck concept with OPTISPEED. In a class of its own for order picking and stacking.



New-generation features:

- Modular build.
- Flexibility.
- Scaleable dimensions and performance.
- Ergonomic work place.
- High throughput of loads.
- Low energy consumption.
- Low operating costs.

Modern, efficient technology.

- CAN-bus technology means fewer sensors and less cabling for safety, flexibility and maximum availability.
- Energy recovery when braking and lowering the main hoist.
- Three-phase drives for peak performance, high efficiency and low operating costs, wear-free for higher uptime and greater throughput.
- Peak speed even when lowering auxiliary lift without load.
- Powerful low-wear hydraulics.
- Sensitive secondary movements due to proportional valve arrangement.
- Powerful and effective hoisting movements due to black and white valve technology with motor speed regulation.
- Particularly low wear due to low working pressure and integral high-pressure filter.
- Compact, rigid build for optimal utilisation of space and safe operation even at extreme heights.
- Smaller aisle widths or greater safety distances due to the turret head with integral over-reach.
- Integral height measurement system for precise positioning of the forks to \pm 5 mm.
- 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 new, adjustable mechanical rail guidance.

The mobile workplace.

- Whether stacking or order picking, ergonomics and driving comfort come as standard with STILL.
- Low, wide step for easy entry.
- Protection from draughts and noise.
- Perfect vision through the clear glass panels.
- Shock-absorbing cab concept.
- Comfortable, height-adjustable ergonomic seat for driving and order picking, which folds away to make the MX-X ideal for any task.
- Generous foot and knee space.
- Integral storage facilities complete the mobile work place.
- Adapted for Material-flow Management System.



The operating panel.

This is the interface between man and machine.

- Simple and safe handling matched to human needs and capabilities.
- All functions can be carried out individually or simultaneously, without changing grip. This imparts a comfortable feel to the controls and helps reduce stress-induced fatigue:
- Driving with hoisting/lowering.
- Simultaneous lowering of the main and auxiliary lift.
- Synchronous swivel and reach movement.
- Uncomplicated presentation of the relevant operator information via the clear display of the current truck status.
- Posture-tolerant design: the operator can move the display so as to achieve the most comfortable working position whether sitting or standing.
- Performance order picking in a stress-free and pleasurable work environment due to the compact rounded shapes.
- Material-flow Management: STILL's integrated solution means that the driver has clear space for order picking with everything necessary in view.

The mobile workplace for motivated employees: a stress-free working environment.

OPTISPEED Version 2.0 - the future-oriented control concept.

- The benefits of optimum performance coupled with technical innovation are maximised by OPTISPEED Version 2.0.
- Travel speed is automatically adjusted dependent on the lift height, travel direction and rate of deceleration.
- Faster load changes are achieved through automatic adjustment of the deceleration ramps. The higher the lift, the gentler the movements for spot-on positioning.
- Regulating the speeds of the various functions results in bespoke performance, tailored to the requirement of each job.
- Optimum safety due to the height-dependent ramp control of secondary movements (side shifting and fork rotation) and travel speed.

- Synchronous fork rotation as standard increases the throughput of goods both in the aisle and from the warehouse.
- With the optional load sensing and weight measurement equipment, the full potential of the MX-X can be realised, giving a further increase in performance.
- If there is a demand for heavier loads in the upper lift range, this can be achieved by adapting the truck configuration.
- Less damage to goods, equipment and truck thanks to individual adjustment of speeds, end of stroke positions, acceleration and deceleration – all to suit the specific application conditions.
- Driver-adjustable settings via the control panel leads to high levels of operator satisfaction.
- E-commerce, partial or full automation, or additional options:
 OPTISPEED provides for future innovation in the flow of materials.
- CAN-bus offers many possibilities which OPTISPEED utilises to the full.
- For greater functional convenience and safety, all movements are measured and monitored.
- Fast and effective configuration, diagnosis and maintenance are achieved through the central interface via a modem, or using the Service Tool Box.
- On-board diagnosis via the operating panel enables fast repair times.
- Simple programming of the main functions at the operating panel – without the need for additional tools – leads to fast and accurate commissioning.

The MX-X with OPTISPEED represents an economical warehousing concept for today and for the future – with the simple objective of giving you a competitive edge.

- up to 30% greater throughput of goods.
- up to 40% lower energy costs compared to series wound equipment.
- up to 20% lower maintenance times.
- up to 20% lower service costs.

Get on board with STILL and ensure your success for the future too.





MX-X Standard equipment.

Driver's cab.

- STILL's vast experience in ergonomics and occupational medicine have contributed to the design of the driver's cab, which provides an ideal workplace.
- Driver's cab has low-vibration mountings to reduce the transmission of vibrations coming from the load.
- Tilting operating panel with display integrated into the cabin wall ensures optimal access to the controls whether standing or sitting.
- Standardised operating philosophy on all STILL narrow aisle trucks.
- Steering knob shaped for the hand allows precise truck movements. All movements are controlled by easy-grip multi-function paddles. Two-handed operation is integrated into the multi-function paddle switches. Simultaneous lowering of auxiliary lift and main lift and also diagonal travel in aisles. Impact button for Emergency Off and horn; push button for other functions.
- Padded, cloth-covered folding seat with height adjustment allows relaxed sitting when stacking and provides room to move freely when order picking.
- Cab and front end designed for adequate knee and foot clearance, while providing storage facilities.
- Glass-clear safety screens in the cab wall (optional) and hinged doors give the best view onto forks and ground - even when seated.
- Low cab entry step and split hinged doors ensure comfortable entry and exit, and also protection against draughts when driving.
- The truck will only drive when the travel switch is depressed and the cab doors are closed (deadman principle).
- Monitoring equipment prevents damage and allows planning of downtime.

Steering.

- Electrical steering acts directly on the drive through a gear. Integral steering knob on the operating panel.
- Free ranging, mechanical or inductive guidance in racking aisles, with automatic straight ahead setting of the steered drive wheel and contactless aisle recognition.

Masts.

- Telescopic mast as the ideal standard solution.
- Triplex mast with free lift where girders, door openings or overhead obstructions require a low closed mast height.
- Three point mast construction, stable and torsionally rigid for pleasant working even at extreme heights.
- High overall heights are additionally stabilised by mast bracing.

Turret head with auxiliary lift.

- A functional group with integral controller and hydraulics.
 Unnecessarily long connections such as cables and hydraulic hoses are avoided, increasing long-term operating safety.
 Diagnosis and maintenance becomes easier and faster.
- High flexibility due to synchronous rotation, which allows left and right sides of the aisle to be serviced in the same run.
- The auxiliary lift means that only a small mass has to be moved for final positioning at the pallet location, thus saving energy.
- When moving goods into and out of stock the overall lift height is increased; optimal utilisation of space up to the ceiling saves money.

- When order picking, the pallet can be brought to the most favourable height for depositing goods.
- High load throughput due to a simultaneous lowering with the main lift.
- High lowering speed even with a small load on the forks.

Chassis.

- Torsionally rigid steel structure with large load wheels for maximum driving comfort.
- Drive compartment covered with a plastic hood, which can be taken off to the rear. The battery lid is also in impact resistant "Mastershock" plastic. Optional removable battery side plates enclose the battery and round off the overall image of the chassis design.

Hydraulics.

- The truck is equipped as standard with proportional valve technology to give particularly sensitive, smooth control of the secondary movements. The hoist controller controls the pump speed for the main lift through black and white valves for the greatest effectiveness.
- All movements can be individually adjusted to the application conditions.
- All end of stroke positions are approached gently and smoothly using controlled ramping.
- Using the hoist motor as a generator when lowering allows up to 15% energy recovery.
- The bypass concept used when lowering the main lift allows sensitive, precise positioning.

Drives in AC technology.

Low-wear, low-maintenance drive units combined with off-load switching MOSFET technology form the basis of the efficient, robust and economical drive concept of the MX-X.

- Monitoring and display of the drive status for effective preventative maintenance.
- The enclosed air-cooled three-phase motor does not move with the steering, thus doing away with stressed cable connections.
- Generously dimensioned gearbox and drive wheel for high levels of driving comfort and safety.



 High torque and peak speeds with particularly sensitive driving control independent of the load, economical in energy consumption and maintenance, with above average driving power.

Brake system.

- The service brake is a generator brake. An electrically released, spring-loaded brake is used for parking / safety and as an emergency stop.
- Two independent braking systems are practically wear-free in operation.
- Optional load wheel brake permits an increase of the driving performance.

Controller with OPTISPEED.

- At its heart are three efficient microprocessor controllers and the drive / hoist controller. Each is especially tailor-made for its task. The individual controllers, sensors and actuators are networked through an internal CAN-bus. All movements are continuously measured, so that travel-related functions are optimally controlled depending on their position.
- The CAN-bus with CAN open protocol offers high flexibility and fast access through the central interface, allowing simple fast diagnosis, maintenance and customer configuration. This proven technology from the automotive and commercial vehicle field has less wiring and fewer sensors and considerably improves long-term reliability.
- The height measurement system provides the absolute fork height to an accuracy of ± 5 mm. The drift-free safe height recording, even when including the auxiliary lift, allows performanceoptimised driving profiles and load transfer cycles.
- The OPTISPEED concept allows the performance potential to be utilised to the full, both when driving and hoisting, and also for the secondary movements.
- Acceleration and deceleration figures are automatically adjusted to the lift conditions for greater goods throughput and working convenience.
- On the control panel, the driver can individually adjust the ergonomics and driving comfort for optimised performance.



Auxiliary equipment.

- Automatic braking at end of aisle, various designs.
- Hoist cut outs.
- Various drive cut-outs.
- Cut-out switch strips on the overhead guard.
- Guidance, mechanical or inductive.
- Workplace lighting.
- Working spot lights into racking.
- Side mounted rear view mirror.
- Standardised interface for data terminal.
- Data terminal with data transfer, printer, scanner and interface to the STILL MMS.
- Mobile personal protection equipment.
- Various chassis widths.
- Various cab widths.
- Various masts.
- Mast bracing.
- Various fork carriages for different pallets.
- Various hydraulic turret head functions.
- Various masts for auxiliary lift.
- Various attachments.
- Various seats.
- Writing surface with document clip.
- Macrolon cover for overhead guard.
- Battery roller track for lateral exchange.
- Various battery trays.
- Side battery compartment covers.
- Cable set for spare battery.
- Toothed-rack guard in the area of turret head (recommended for bagged goods).
- Topping up aid for hydraulic oil.
- Cold store version.
- Extra length driver's cab with super-luxury seat.
- Special MMS driver's cab.
- Preliminary set-up for radio installation on overhead guard.
- 3 variants of hydraulic fork adjustment.
- Wind protection at load end, glass screen integrated in cabin wall.
- Modules to improve performance.

MX-X Standard equipment.

- Service functions such as setting parameters, diagnosis and maintenance are done on the spot or via a modem through the central interface and the STILL STB (Service Tool Box).
- On-board diagnosis is possible without specialist knowledge or a laptop computer: this facilitates fast diagnosis and repair.
- OPTISPEED monitors all aspects of truck use and utilises the modern control technology to maximum effect:
- up to 30% high turnover performance.
- up to 40% less energy consumption.
- up to 20% lower maintenance times and costs.
- Simple and fast adjustment to individual application conditions.
- High staff motivation.
- High safety in all functions.
- Optimal residual capacity at all levels.

CAN-bus.

- All controls, sensors and actuators are networked.
- High flexibility due to central access to all units and functions.
- High level of safety due to the use of proven technology from the automotive and commercial vehicle field.
- Less wiring and fewer sensors for additional operating safety over the long term too.

Battery compartment.

 Battery changing from either side using a forklift truck or a battery-changing frame. The battery is secured at the sides and electrically monitored.

Battery.

For multi-shift use, various battery changing systems or a forklift truck can be used.

 The overall energy balance is up to 40% better, allowing the use of a smaller battery for the same throughput of goods or longer usage times without interim charging or battery changes.

Safety, design and ergonomics.

- Safety systems are in accordance with CE conformity.
- All drive and hoist movements are made safe through the deadman foot switch and two-handed operation.
- Rounded shapes and smoothly padded surfaces with many integral storage facilities.
- Abseil equipment integrated in the overhead guard, accessible quickly and without tools.

Modular system of MX-X.



- Emergency lowering valve under the rear hood, easily accessible from the aisle.
- OPTISPEED for additional safety in all functions, height dependent and redundant (Dual Monitoring). All fork movements are monitored using position sensors and transmitters.

Service and maintenance.

- The STILL STB (Service Tool Box) allows easy configuration, parameter setting and diagnosis.
- Central service and diagnostic interface for connection of the STILL STB.
- Long-term memory for malfunctions and display for error code.
- On-board diagnosis using menu keys on the operating panel.
- Drive compartment and rear hood designed for easy access from the aisle.
- Battery cover is opened from above for maintenance purposes and provides a service platform.
- Particularly low wear hydraulics due to integral high-pressure filter.
- Remote diagnosis and maintenance support possible by modem.

Automation components.

Material-flow Management, on-line via radio transmission, increases efficiency by issuing paperless orders and providing efficient material flow control, and achieves up to 30 % greater throughput of goods with virtually zero errors.

Integral mobile personal protection equipment provides extremely high safety in the aisle.

Safety.

- The truck is built in accordance with the EC guideline 98/37/EC and carries the "CE" symbol.
- STILL is certified to ISO 9001.

Order picking truck with turret head.

	1.1	Manufacturer		STILL	STILL	
s	1.2	Manufacturer's model designation		MX-X telescopic mast	MX-X triplex mast with free lift	
stic	1.3	Drive: electric, diesel, petrol, LPG, mains electric		Electric	Electric	
teri	1.4	Operation (hand, pedestrian, stand-on, sit-on, order picker		Stand on / seated	Stand on / seated	
arac	15	Canacity / load	0 kg	500 - 1500	500 - 1500	
ЧС	1.6	Load centre	c mm	600	600	
	1.0	Wheel base	v mm	1586 - 2184	1586 - 2184	
t	2.1	Truck weight	γ kσ	variable*	variable*	
eigh	2.1	Axle load laden (drive end / load end)	kø	variable*	variable*	
Ň	2.3	Axle load unladen (drive end / load end)	kg	variable*	variable*	
~	3.1	Tyres (rubber, Vulkollan, pneumatic, polyurethane)		Vulkollan	Vulkollan	
assi	3.2	Tyre diameter / width drive end	mm	400 / 140	406 / 170	
ch	3.3	Tyre diameter / width load end	mm	370 / 160	370 / 160	
ls	3.5	No. of wheels (x = driven) drive / load end		1x / 2	1x / 2	
hee	3.6	Track width load end	b10 mm	variable*	variable*	
8	3.7	Track width drive end	b11 mm	0	0	
	4.2	Height, mast lowered	hı mm	2400 - 7400	2900 - 5900	
	4.3	Free lift	h2 mm	-	1650 - 4650	
	4.4	Lift	h3 mm	2300 - 11800	5050 - 12850	
	4.5	Height, mast raised	h4 mm	4855 - 14355	7605 - 15405	
	4.7	Height over overhead guard (cab)	h₅ mm	2555	2555	
	4.8	Seating / standing height	hz mm	430	430	
	4.11	Auxiliary fork lift.	hy mm	1675 - 2375	1675 - 2375	
	4.14	Standing height raised	h12 mm	2730 - 12230	5480 - 13280	
	4.14.1	Grip height (h12 + 1600 mm)	h28 mm	4330 - 13830	7080 - 14880	
	4.15	Height lowered	h13 mm	80	80	
	4.19	Overall length (including forks)	lı mm	variable*	variable*	
sions	4.21	Overall width Chassis / load wheel axle	b1/b2 mm	1160 / 1160 - 1800	1160 / 1160 - 1800	
nens	4.22	Fork dimensions	s/e/l mm	variable*	variable*	
din	4.24	Fork carriage width	b₃ mm	variable*	variable*	
Basi	4.25	Overall fork width	b₅ mm	variable*	variable*	
	4.27	Width over guide rollers	b ₆ mm	1170 - 1919	1170 - 1919	
	4.29	Side shift	b7 mm	variable*	variable*	
	4.31	Floor clearance, under mast, laden	m1 mm	40	40	
	4.32	Floor clearance, centre of wheel-base	m ₂ mm	87	87	
	4.34	Working aisle width	A _{st} mm	variable*	variable*	
	4.35	Turning radius	Wa mm	variable*	variable*	
	4.38	Distance to slewing fork pivot point	l₃ mm	variable*	variable*	
	4.39	Length of shift carriage	A mm	variable*	variable*	
	4.40	Width of shift frame	B mm	variable*	variable*	
	4.41	Width of shift carriage	F mm	variable*	variable*	
	4.42	Turning aisle width min.	Au mm	variable*	variable*	
	5.1	Travel speed laden / unladen	km/h	variable*	variable*	
nce	5.2	Hoist speed laden / unladen	m/s	variable*	variable*	
rma	5.3	Lowering speed laden / unladen	m/s	variable*	variable*	
erfo	5.4	Shifting speed laden / unladen	m/s	variable*	variable*	
۵.	5.9	Acceleration time (over 10 m) laden / unladen	S	variable*	variable*	
	5.10	Service brake		generator	generator	
	6.1	Drive motor, rating S2 = 60 min	kW	7	7	
tors	6.2	Hoist motor, rating at $S3 = 15\%$	kW	20 - 24	20 - 24	
0m-	6.3	Battery to IEC 254-2, A, B, C, No		IEC 254-2; A	IEC 254-2; A	
ш	6.4	Battery type, voltage, rated capacity C₅	V/Ah	PzS, 80 V, 420 - 930 Ah	PzS, 80 V, 420 - 930 Ah	
	6.5	Battery weight +/- 5% (depends on make)	kg	1238 - 2310	1238 - 2310	
SC	8.1	Type of arive control	15(1)	Micro-processor	Micro-processor	
Mi	8.4	Sound level at driver's ear	gR(y)	80	80	
			I			

 \star = These values are scaleable and match the customer's individual requirements.

MX-X Technical data..

Telescopic mast. (all height details in mm).

Туре	Total lift from	Total lift	Main lift	Height	Auxiliary	Platform	Picking	Overall height
h1	floor h ₂₅	h ₂₄	h₃	lowered	lift	heigth h12	height h28	h4
	(h3+h9+h13)	(h3+h9)		h13	h9	(h3+h7)	(h7+1600)	(h₃+h₅)
7.400	13.535	13.475	11.800	60	1.675	12.230	13.830	14.355
6.900	12.535	12.535	10.800	60	1.675	11.230	12.830	13.355
6.400	11.735	11.675	10.000	60	1.675	10.430	12.030	12.555
5.900	10.735	10.675	9.000	60	1.675	9.430	11.030	11.555
5.400	9.935	9.875	8.200	60	1.675	8.630	10.230	10.755
4.900	8.935	8.875	7.200	60	1.675	7.630	9.230	9.755
4.400	7.935	7.875	6.200	60	1.675	6.630	8.230	8.755
3.900	6.935	6.875	5.200	60	1.675	5.630	7.230	7.755
3.400	5.935	5.875	4.200	60	1.675	4.630	6.230	6.755
2.900	4.935	4.875	3.200	60	1.675	3.630	5.230	5.755
2.400	4.035	3.975	2.200	60	1.675	2.730	4.330	4.855

Triplex mast with free lift. (all height details in mm).

Туре	Total lift from	Total lift	Main lift	Free lift	Height	Auxiliary	Platform height	Picking height	Overall height
h1	floor h25	h24	h3	h2	lowered	lift	h12	h28	h4
	(h3+h9+h13)	(h3+h9)		(h1 -1250)	h13	h,	(h3+h7)	(h7+1600)	(h₃+h₅)
5.900	14.585	14.525	12.850	4.650	60	1.675	13.280	14.880	15.405
5.400	13.285	13.225	11.550	4.150	60	1.675	11.980	13.580	14.105
4.900	11.785	11.725	10.050	3.650	60	1.675	10.480	12.080	12.605
4.400	10.485	10.425	8.750	3.150	60	1.675	9.180	10.780	11.305
3.900	9.185	9.125	7.450	2.650	60	1.675	7.880	9.480	10.005
3.400	8.085	8.025	6.350	2.150	60	1.675	6.780	8.380	8.905
2.900	6.785	6.725	5.050	1.650	60	1.675	5.480	7.080	7.605









Order picking truck with telescopic forks.

general Low MM-C relexcipier mast		1.1	Manufacturer			STILL	STILL
Bit of the section (hand, policy bit), LFG, manne electric, order pictor) Electric Electric Electric 1-4 Operation (hand, policy bit), Elsand on / seard) Stand on / seard) Stand on / seard) Stand on / seard) 1-4 Operation (hand, policy bit), Stand on / seard) O kg Stand on / seard) Stand on / seard) 1-4 Operation (hand, policy bit), Stand on / seard) Stand on / seard) Stand on / seard) Stand on / seard) 1-4 Operation (hand, policy bit), Stand on / seard) Stand on / seard) Stand on / seard) Stand on / seard) 2-1 Tack width Index (hand and cond) kg variable* variable* 2-3 Ale load lustem (hand meth) / old ond max Valicolan Valicolan 3-3 Tack sidth (hand meth) / old ond mm Valicolan Valicolan 3-4 Tack width Index ond mm Valicolan Valicolan 3-5 No contends policy (hand meth) hom max Valicolan Valicolan 3-5 Nore dimeter, Validh Index on max <td< td=""><td>s</td><td>1.2</td><td>Manufacturer's model designation</td><td></td><td></td><td>MX-Q telescopic mast</td><td>MX-Q triplex mast with free lift</td></td<>	s	1.2	Manufacturer's model designation			MX-Q telescopic mast	MX-Q triplex mast with free lift
By Eq. 14. Operation (march, pediamitan, stand-on, sit-on, order picker) C Standon / seated Standon / seated 15. Capacity / Josd C mm 600 600 19. Week base c mm 600 600 19. Week base y mm 600 600 22. Ade load staden (dive end / load end) 458 variable* variable* 23. Tyres (anstein, pediamitan, stand-on, sit-on, order end) 168 variable* variable* 33. Tyres (anstein, variable, dive end / load end) 168 variable* variable* variable* 33. Tyres (anstein / width forder end mm 320/160 320/160 320/160 35. No. Others (X- diven) forder end mm variable* variable* variable* 37. Track width forder end hit <mm< td=""> 200-1160 320/160 38. Free fit hit<mm< td=""> 200-11600 320/160 320/160 37. Track w</mm<></mm<>	stic	1.3	Drive: electric, diesel, petrol, LPG, mains electric			Electric	Electric
Bit Copport Log Applicity Log Application Log Application 16 Log Accenter c mm 600 600 16 Log Accenter c mm 600 600 21 Truck weight lsg variable* variable* variable* 22 Ake Load undern (drive end / load end) lsg variable* variable* 33 Stree Streeter (drive end / load end) mm 400 / l140 400 / l140 33 Stree Streeter (drive end / load end) mm 400 / l140 400 / l140 400 / l140 33 Stree Streeter (drive end / load end) mm 1x / 2 1x / 2 1x / 2 33 Stree Streeter (drive end / load end) mm - - - 34 Stree Streeter Streeter (drive end / load end) mm - - - 35 Stree Streeter Streeter No Nm 200 - 1220 220 - 1220 220 - 1220	teri	1.4	Operation (hand, pedestrian, stand-on, sit-on, order pick	er l		Stand on / seated	Stand on / seated
6 6 10 Meet base c mm 600	arac	1.5	Capacity / load	0	kg	500 - 1250	500 - 1250
190 156 218 1566 2184 1586 2184 121 Truck weight kg variable* variable* variable* 223 Axe tood Ladon (drive end / Load end) kg variable* variable* 233 Maxe tood Ladon (drive end / Load end) kg variable* variable* 333 Truck (uober, Vikolian, pneumätic, governametic, etc.) kg variable* variable* 333 Truck (uober, Vikolian, pneumätic, governametic, etc.) kg variable* variable* 333 Truck uddth load end mm variable* variable* 33 No. of vheels (k = diven) drive / load end mm variable* variable* 42 Height, mast towerd hn <mm< td=""> 2000-7000 2000-5900 44 Hift hn<mm< td=""> 200-11800 5050-12850 45 Height, mast towerd hn<mm< td=""> 200-1500 800-1500 414 Standing height hn<mm< td=""> 200-1500 800-1500</mm<></mm<></mm<></mm<>	сh	1.6	Load centre	c n	nm	600	600
Bits Line Variable* Variable* 2.2 Ade losa laden (drive end / load end) kg variable* variable* 2.3 Ade losa laden (drive end / load end) kg variable* variable* 3.3 Tree (rabber, Vulkollan, pneumskip, polyurethare) Vulkollan Vulkollan Vulkollan 3.3 Tree dimeter / vulkoll odd end mm 400 / 140 406 / 170 3.3 Track width load end mm 970 / 160 370 / 160 370 / 160 3.5 No. A wheels x = driven) drive / load end mm variable* variable* 3.5 No. A wheels x = driven) drive / load end mm maxible* variable* 3.6 Track width drive end hin< mm		1.0	Wheel base	v n	nm	1586 - 2184	1586 - 2184
By By 2.2.Ake base lader (drive end / base end)The term of the set of unitable*Unitable* variable*3.1Type (indice)(drive end / base end)termWitholan3.1Type (indice)VisiolanWitholanWitholan3.2Type (indice)VisiolanWitholanWitholan3.3Type (indice)VisiolanWitholanWitholan3.4Type (indice)VisiolanWitholanWitholan3.5No. of wheels (x = driven)drive (had mmMitholanWitholan3.4Type (indice)drive (had mmMitholanMitholan3.5Track widthbade endmmWitholanWitholan4.2Height, mast raisedhn <mm< td="">200 - 18002000 - 59004.4Ufthn<mm< td="">200 - 18002000 - 59004.5Height, mast raisedhn<mm< td="">4205 - 143557605 - 194054.6Stating / fanding heighthn<mm< td="">4200 - 1800800 - 15004.14Stating height (ht, 1hn<mm< td="">2700 - 15200800 - 132604.14Stating height (ht, 1hn<mm< td="">2700 - 152008400 - 132604.15Height boweredhn<mm< td="">430 - 13307080 - 148804.14Stating height (ht, 1hn<mm< td="">2700 - 152008400 - 132604.15Height boweredhn<mm< td="">430 - 13803804.15Height boweredhn<mm< td="">700 - 15008400 - 13604.15Height boweredhn<mm< td="">70<td></td><td>2.1</td><td>Truck weight</td><td></td><td>kσ</td><td>variable*</td><td>variable*</td></mm<></mm<></mm<></mm<></mm<></mm<></mm<></mm<></mm<></mm<></mm<>		2.1	Truck weight		kσ	variable*	variable*
Part 23 Adde load unlabed in (drive and / load and) 1% Variable* variable* 80 31 Tyres (rabber, vulkollan, pneumatic, polyverthane) Valicollan Vulkollan Vulkollan 92 32 Tyre diameter / vulkollan, pneumatic, polyverthane) Valicollan Vulkollan Vulkollan 93 33 Tyre diameter / vulkin load and mm 370 / 160 370 / 160 3.5 Nor of wheels (x - driven) drive / load end mm variable* variable* 3.6 Tack width load end mm variable* variable* 4.1 Adv drive mod / view / load end mm variable* variable* 4.1 Adv drive mod / view / load end mm mm variable* variable* 4.1 Adv drive mod / view / load end mm mm variable* variable* 4.1 Advisity filt height, mast raised h <n<mm< td=""> mm 2300 - 15800 4.1 Advisity filt borenil work filt</n<mm<>	ight	2.1	Axle load laden (drive end / load e) d)	kσ	variable*	variable*
The form the form of the form o	We	2.2	Axie load unladen (drive end / load e	nd)	kσ	variable*	variable*
Bit All Constraints and processing procespreprocessing processing processing processing processing		3.1	Tyres (rubber Vulkollan pneumatic polyurethane)		110	Vulkollan	Vulkollan
etc The diameter / with Loss of the bit The diameter / with Loss of the bit 3.3 No. of wheels (x = driven) drive dia 1x / 2 1x / 2 1x / 2 3.4 Track with load end mm with 2 1x / 2 1x / 2 3.4 Track with load end hm mm variable* variable* 4.2 Height, mast routed hn mm 2400 - 7400 29000 - 5900 4.4 Lift hn mm 2300 - 11800 5650 - 12850 4.4 Lift hn mm 4300 - 4300 2300 - 11800 4.5 Height were verthead guard (cab) hn mm 4300 - 4330 430 4.14 Standing height hn mm 2300 - 11800 800 - 1500 800 - 1500 4.14 Standing height raised hn mm 2300 - 3330 7080 - 1480 4.14 Standing height raised hn mm 3430 - 3330 7080 - 1480 4.14 Standing height rout in tho	ssis	3.1	Tyre diameter / width	nd n	nm		
Model Model wheels (x + driver) Model weels (x + driver)<	cha	3.2	Tyre diameter / width	nd n	nm	370 / 160	370 / 160
The original function of the second	_	3.5	No of whools $(x = drivon)$ drive $(load)$	nd n		1 / 2	1 × / 2
g 3.7 Track width Audu min Audu min Audu min Audu min Audu min 3.7 Track width nh mm - - - 4.3 Free lift hn mm 2800 - 1800 2900 - 5900 4.3 Free lift hn mm 2800 - 11800 5050 - 12850 4.4 Uff hn mm 4200 - 11800 5050 - 12850 4.5 Height, mast rised hn mm 4200 - 1300 6300 - 1500 4.11 Auduitry fork lift hn mm 800 - 1500 800 - 1500 4.14 Istanding height raised hn mm 4330 - 13330 7080 - 14880 4.14 Istanding forking forks) hn mm 4330 - 13330 7080 - 14880 4.14 Verail width Chassis / load wheel ake h/b mm variable* 4.21 Verail width Chassis / load wheel ake h/b mm variable* 4.22 Fork carriage width bs	eels	2.5	Trook width	nd hu n	nm		
3-7 100. Model world 0.00 eVent bit 100 2400 - 7400 2900 - 5900 4.2 Height, mast lowered hn mm	ΜN	3.0	Track width drive	nd bu	nm	variable	variable
4.3 Free lift. Init		1.0	Leight most leward			2400 7400	
space inc inc </td <td></td> <td>4.2</td> <td>Free lift</td> <td> III II</td> <td>nm</td> <td>2400 - 7400</td> <td>1450 4450</td>		4.2	Free lift	III II	nm	2400 - 7400	1450 4450
4.5 Height verwerbead guard (cab) hs mm 2455 11800 3030-12830 4.5 Height verwerbead guard (cab) hs mm 2555 2555 4.8 Seating / standing height hv mm 4300 4300 4.11 Auxiliary fork ifth. hv mm 2030-1500 800-1500 4.14 Standing height raised hv mm 2030-12230 5480-13280 4.14.14 Istending height raised hv mm 2030-14880 380 4.15. Height (notuding forks) h mm variable* variable* 4.12 Overall width Chassis / load wheel astb b/D mm variable* variable* 4.22 Fork carriage width bs mm nite variable* variable* 4.23 Hork rearriage width bs mm variable* variable* 4.24 Fork carriage width bs mm variable* variable* 4.24 Fork carriage w		4.5		112 11		-	F0F0 120F0
4.7 Heigh, miss taised Init Init Init 1000 170403 4.7 Heigh, werkened ag uard (cab) hs mm 2555 2555 4.8 Seating / standing height hr mm 430 430 4.11 Axuilary tok fith. hr mm 800 1500 800 1500 4.14 Standing height raised hr2 mm 430 380 380 4.14 Grip height (hr + 1600 mm) hra mm 4330 13830 7080 14880 4.15 Height (hr + 1600 mm) hra mm 380 380 380 4.10 Overall with Chassis / load wheel ake br/b2 <mm< td=""> 1160 / 1160 - 1800 1160 / 1160 160 4.21 Overall with bs mm - - - - 4.22 Fork dimensions s / e / 1<mm< td=""> variable* variable* variable* 4.23 Fork cariage width bs mm - <</mm<></mm<>		4.4	Lill Height most related	II3	nm	2300 - 11800	7605 15405
4.7 Inegrit Over Overhead goad (bab) its its <th< td=""><td></td><td>4.5</td><td>Height over everband guard (ach)</td><td>114 11</td><td></td><td>4600 - 14000</td><td>7005 - 15405</td></th<>		4.5	Height over everband guard (ach)	114 11		4600 - 14000	7005 - 15405
4.8 Searing / standing height raised hr min 4.30 4.30 4.11 Axiliary fork lift. ho mm 800 - 1500 5480 - 13280 4.14 Standing height raised ho mm 4330 - 13830 7080 - 14880 4.14 Grip height (hz + 1600 mm) ha mm 4330 - 13830 7080 - 14880 4.15 Verall leight floctuding forks) in mm ad30 - 14880 330 4.15 Overall width Chassis / load wheelaxe br/bz mm 1160 / 1160 - 1800 1160 / 1160 - 1800 4.22 Fork dimensions S / e / I mm variable* variable* variable* 4.24 Fork carings width bs mm - - - 4.22 Width over guide rollers bs mm 1170 - 1919 1170 - 1919 4.22 Width over guide rollers bs mm md 40 4.33 Floor clearance, entre of wheebase mz mm arisible* variable* 4.33 <td></td> <td>4.7</td> <td>Reight over overhead guard (cab)</td> <td>[15 [1</td> <td></td> <td>2555</td> <td>2555</td>		4.7	Reight over overhead guard (cab)	[15 [1		2555	2555
4.11 Addital y lock lift. 10 1000 1300 3000 1300 4.14 Grip height raised h12 mm 2230 55400 132200 4.14 Grip height (hz + 1600 mm) h12 mm 2330 13830 7080 14880 4.15 Height lowered h13 mm 380 380 380 4.14 Grip height (hz + 1600 mm) h1 mm variable* variable* variable* 4.15 Height lowered h1 mm variable* variable* variable* 4.20 Overall length (including forks) h1 mm variable* variable* 4.21 Overall length (including fork) b1 mm variable* variable* 4.22 Fork dimensions s / e / 1 mm variable* variable* 4.22 Vidth over guide rollers b5 mm 1170-1919 1170-1919 4.23 Floor clearance, under mast, laden m1 mm ma m		4.8	Seating / standing neight	<u>n</u> 7 m	nm	430	430
quad quad <th< td=""><td></td><td>4.11</td><td>Auxiliary fork fill.</td><td>11911</td><td></td><td>800 - 1500</td><td>5400 - 13200</td></th<>		4.11	Auxiliary fork fill.	11911		800 - 1500	5400 - 13200
generation initial initia initial initial		4.14	Crin height (h. 1100 mm)	[]12 []		2730 - 12230	7000 14000
generation Height (including forks) In 380 380 4.19 Overall ength (including forks) Is mm variable* variable* 4.21 Overall width Chassis / load wheel axle b, /b2 mm 1160 / 1160 - 1800 1160 / 1160 - 1800 4.22 Fork darriage width bs mm - - 4.24 Fork carriage width bs mm - - 4.25 Overall ord bs mm variable* variable* 4.25 Overall fork width bs mm variable* variable* 4.26 Side shift br mm wariable* variable* 4.29 Floor clearance, under mast, laden mi mm wariable* variable* 4.31 Floor clearance, centre of wheel-base mm mm variable* variable* 4.34 Working aisle width Aa mm variable* variable* 4.35 Turning radius Ws mm vari		4.14.1	Grip height (h12 + 1600 mm)	n28 n	nm	4330 - 13830	/080 - 14880
operation information Variable Variable Variable 4.21 Overall with Chassis / load wheel axe b./bz mm 1160 / 1160 - 1800 1160 / 1160 - 1800 4.22 Fork dimensions s / e / 1 mm variable* variable* 4.24 Fork carriage width bs mm variable* variable* 4.25 Overall indrk width bs mm variable* variable* 4.27 Width over guide rollers bs mm 1170 - 1919 1170 - 1919 4.32 Floor clearance, under mast, laden mi mm 40 40 4.33 Floor clearance, centre of wheel-base mz mm variable* variable* 4.34 Working aisle width Au mm variable* variable* 4.34 Intring radius Wa mm variable* variable* 4.35 Turning aisle width Ma mm - - 4.34 Ustance to slewing fork pivot point Is	su	4.15	Height lowered	n13 n	nm	380	380
generation 4.21 Overali width Chassis / hoad wheel axe b/b Inth Into/ / 1800 / 1800 Into/ / 1800 / 1800 4.24 Fork carriage width b mm variable* variable* 4.24 Fork carriage width bs mm variable* variable* 4.25 Overall fork width bs mm variable* variable* 4.25 Overall fork width bs mm variable* variable* 4.29 Side shift bs mm wariable* variable* 4.31 Floor clearance, under mast, laden mi <mm< td=""> mm 40 40 4.32 Floor clearance, centre of wheel-base mz<mm< td=""> B7 87 87 4.33 Bistnoce to slewing fork pivot point ls<mm< td=""> variable* variable* 4.38 Distance to slewing fork pivot point ls<mm< td=""> variable* variable* 4.42 Turning raidus widt min A mm variable* 5.2 Hoist speed<td>nsio</td><td>4.19</td><td>Overall length (including forks)</td><td><u>I1 П</u></td><td>nm</td><td></td><td></td></mm<></mm<></mm<></mm<>	nsio	4.19	Overall length (including forks)	<u>I1 П</u>	nm		
8 4.22 Fork carriage width ba mm - - 4.25 Overall fork width ba mm - - 4.25 Overall fork width ba mm variable* variable* 4.27 Width over guide rollers ba mm 1170 - 1919 1170 - 1919 4.24 Side shift br mm wariable* variable* variable* 4.31 Floor clearance, centre of wheel-base mz mm Add 40 40 4.32 Floor clearance, centre of wheel-base mz mm variable* variable* 4.34 Working aisle width Aw mm variable* variable* 4.38 Distance to slewing fork pivot point Is mm variable* variable* 4.42 Turning radius Mw mm variable* variable* 4.38 Distance to slewing fork pivot point Is mm - - 4.42 Turavi speed Iaden / unl	ime	4.21	Overall width Chassis / load wheel a		nm	1160 / 1160 - 1800	1160 / 1160 - 1800
8 4.24 Fork carrage width bs mm 4.25 Overall fork width bs mm Narable* Variable* Variable* 4.27 Width over guide rollers bs mm 1170-1919 1170-1919 4.29 Side shift by mm variable* variable* 4.31 Floor clearance, under mast, laden mi mm 40 40 4.32 Eloor clearance, centre of wheel-base mz mm variable* variable* 4.34 Working aisle width Au mm variable* variable* 4.35 Turning radius Ws mm variable* variable* 4.35 Length of shift carriage A mm - - 4.42 Turning aisle width min A mm - 5.1 Travel speed laden / unladen m/s variable* variable* 5.2 Hoist speed laden / unladen m/s variable*	sic d	4.22	Fork dimensions	s/e/in	nm	variable*	variable*
Image: Aug and the second se	Bas	4.24	Fork carriage width	D3 11	nm	-	-
4.27 Width Over guide rollers bs mm 11/0 - 1919 11/0 - 1919 4.29 Side shift b7 mm variable* variable* 4.31 Floor clearance, under mast, laden min mm 40 40 4.32 Floor clearance, centre of wheel-base m2 mm 87 87 4.34 Working aisle width Au mm variable* variable* 4.35 Turning radius Wa mm variable* variable* 4.35 Length of shift carriage A mm variable* variable* 4.39 Length of shift carriage A mm variable* variable* 4.42 Turning aisle width min A mm variable* variable* 5.1 Travel speed laden / unladen m/s variable* variable* 5.3 Lowering speed laden / unladen m/s variable* variable* 5.4 Shifting speed laden / unladen m/		4.25	Overall fork width	D5 m	nm		
4.29 Side shift by any able Variable Variable Variable 4.31 Floor clearance, under mast, laden m; mm 40 40 4.32 Floor clearance, centre of wheel-base m; mm 87 87 4.34 Working aisle width Ast mm variable* variable* 4.35 Turning radius Ws mm variable* variable* 4.35 Distance to slewing fork pivot point Is mm variable* variable* 4.39 Length of shift carriage A mm variable* variable* 4.42 Turning aisle width min. Au mm variable* variable* 4.39 Length of shift carriage A mm variable* variable* 5.1 Travel speed laden / unladen m/s variable* variable* 5.2 Hoist speed laden / unladen m/s variable* variable* 5.4 Shifting speed laden / unladen <td< td=""><td></td><td>4.27</td><td>width over guide rollers</td><td>D6 M</td><td>nm</td><td>1170 - 1919</td><td>1170-1919</td></td<>		4.27	width over guide rollers	D6 M	nm	1170 - 1919	1170-1919
Flor Clearance, curve of wheel-base min min min min 40 4.32 Floor clearance, centre of wheel-base min mm 87 87 4.34 Working aisle width Ast mm variable* variable* 4.35 Turning radius Wa mm variable* variable* 4.39 Length of shift carriage A mm variable* variable* 4.42 Turning aisle width min A mm variable* variable* 4.39 Length of shift carriage A mm - - - 4.42 Turning aisle width min A mm variable* variable* 4.30 Length of shift carriage A mm variable* variable* 4.42 Turning aisle width min M variable* variable* 5.1 Travel speed laden / unladen m/s variable* variable* 5.2 Hoist speed laden / unladen		4.29		D7 M	nm	variable^	variable*
Image: Proof clearance, centre of wheeP-base Image: Proof clearance, centre of wheeP-base Image: Proof clearance, centre of wheeP-base Proof wariable* Proof clearance, centre of wheeP-base Proof wariable* Proof clearance, centre of wheeP-base Proof wariable*		4.31	Floor clearance, under mast, laden	m1 m	nm	40	40
4.34 Working alse Width Aat Him Variable* Variable* 4.35 Turning radius Wa mm variable* Variable* 4.38 Distance to slewing fork pivot point Ia mm variable* variable* 4.39 Length of shift carriage A mm - - 4.42 Turning aisle width min. Au mm variable* variable* 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 Shifting speed laden / unladen m/s variable* variable* 5.4 Service brake generator generator generator generator 5.0 Service brake generator generator generator 20 - 24 6.1 Drive motor, rating at S3 = 15% KW 20 - 24 20 - 24 6.3 Battery to IEC 254-2, A, B		4.32	Floor clearance, centre of wheel-base	m2 m	nm	87	87
4.35 Turning radius Wa Mm Variable* Variable* 4.38 Distance to slewing fork pivot point Ia mm variable* variable* 4.39 Length of shift carriage A mm - - 4.42 Turning aisle width min. Au mm variable* variable* 5.1 Travel speed laden / unladen Mm/s variable* variable* 5.2 Hoist speed laden / unladen m/s variable* variable* 5.3 Lowering speed laden / unladen m/s variable* variable* 5.4 Shifting speed laden / unladen m/s variable* variable* 5.4 Shifting speed laden / unladen m/s variable* variable* 5.9 Acceleration time (over 10 m) laden / unladen m/s variable* variable* 6.10 Service brake generator generator generator 20 - 24 6.2 Hoist motor, rating at S3 = 15% KW 20 - 24 20 - 24 20 - 24 <t< td=""><td></td><td>4.34</td><td>working alsie width</td><td>Ast II</td><td>nm</td><td>variable*</td><td>variable*</td></t<>		4.34	working alsie width	Ast II	nm	variable*	variable*
4.38 Distance to stewing fork plot point is mm Variable* Variable* 4.39 Length of shift carriage A mm - - 4.42 Turning aisle width min. Au mm variable* variable* 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 Shifting speed laden / unladen m/s variable* variable* 5.4 Shifting speed laden / unladen m/s variable* variable* 5.0 Service brake laden / unladen m/s variable* variable* 5.10 Service brake generator generator generator 6.1 Drive motor, rating at S3 = 15% kW 20 - 24 20 - 24 6.2 Hoist motor, rating at S3 = 15% kW 20 - 24 20 - 24 6.4 Battery to IEC 254-2; A, B, C, No <td< td=""><td></td><td>4.35</td><td>Turning radius</td><td>VVa II</td><td></td><td>variable"</td><td>variable*</td></td<>		4.35	Turning radius	VVa II		variable"	variable*
4.39 Length of shift carriage A Imm - - - 4.42 Turning aisle width min A mm variable* variable 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 Shifting speed laden / unladen m/s variable* variable* 5.4 Shifting speed laden / unladen m/s variable* variable* 5.10 Service brake		4.38	Length of chift corrigen	18 11		variable	variable
4.42 Until gase width Intil Au Intil Au Wartable* Variable* 80 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 Shifting speed laden / unladen m/s variable* variable* 5.4 Shifting speed laden / unladen m/s variable* variable* 5.0 Acceleration time (over 10 m) laden / unladen m/s variable* variable* 5.10 Service brake		4.39	Length of shift carriage	A m	nm	-	-
S.1Indeer speedIndeer / UnladerKm/nVariable*Variable*5.2Hoist speedIaden / Unladenm/svariable*Variable*5.3Lowering speedIaden / Unladenm/svariable*Variable*5.4Shifting speedIaden / Unladenm/svariable*Variable*5.9Acceleration time (over 10 m)Iaden / Unladenm/svariable*variable*5.10Service brakegeneratorgeneratorgenerator6.1Drive motor, rating S2 = 60 minkW776.2Hoist motor, rating at S3 = 15%kW20 - 2420 - 246.3Battery to IEC 254-2, A, B, C, NoIEC 254-2; AIEC 254-2; A6.4Battery to IEC 254-2, A, B, C, NoIEC 254-2; AIEC 254-2; A6.5Battery type, voltage, rated capacity C5V/AhPzS, 80 V, 420 - 930 Ah6.5Battery weight +/- 5% (depends on make)kg1238 - 23107Micro-processorMicro-processorMicro-processor8.1Type of drive controlMicro-processor68		4.42	Turning alsie width		//-	Variable*	Variable*
generation S.2 Hoist speed lader / unlader m/s Variable* Variable* 5.3 Lowering speed lader / unlader m/s variable* variable* 5.4 Shifting speed lader / unlader m/s variable* variable* 5.4 Shifting speed lader / unlader m/s variable* variable* 5.9 Acceleration time (over 10 m) lader / unlader m/s variable* variable* 5.10 Service brake 6 generator generator generator 6.1 Drive motor, rating S2 = 60 min kW 7 7 7 6.2 Hoist motor, rating at S3 = 15% kW 20 - 24 20 - 24 20 - 24 6.3 Battery to IEC 254-2, A, B, C, No IEC 254-2; A IEC 254-2; A IEC 254-2; A 6.4 Battery type, voltage, rated capacity Cs V/Ah PzS, 80 V, 420 - 930 Ah PzS, 80 V, 420 - 930 Ah 6.5 Battery weight +/- 5% (depends on make) kg 1238 - 2310 1238 - 2310 8.4	_	5.1	Iravei speed laden / unia	en km	<u>/n</u>	variable"	variable*
Provide SolutionSolutionConstraint MariableMariableMariableMariable5.4Shifting speedladen / unladenm/sVariable*Variable*5.9Acceleration time (over 10 m)laden / unladenm/sVariable*Variable*5.10Service brake6generatorgenerator6.1Drive motor, rating S2 = 60 minkW776.2Hoist motor, rating at S3 = 15%kW20 - 2420 - 246.3Battery to IEC 254-2, A, B, C, NoIEC 254-2; AIEC 254-2; A6.4Battery to IEC 254-2, A, B, C, No1EC 254-2; AIEC 254-2; A6.5Battery weight +/- 5% (depends on make)kg1238 - 23101238 - 23107Micro-processorMicro-processorMicro-processorMicro-processor8.4Sound level at driver's eardB(A)6868	ance	5.2	Hoist speed laden / unla	en m	1/5	variable*	
Partial of the speed Sinthing speed Indent y unlater Wanable* 5.9 Acceleration time (over 10 m) laden / unlaten s variable* 5.10 Service brake 0 generator generator 6.1 Drive motor, rating S2 = 60 min kW 7 7 6.2 Hoist motor, rating at S3 = 15% kW 20 - 24 20 - 24 6.3 Battery to IEC 254-2, A, B, C, No IEC 254-2; A IEC 254-2; A 6.4 Battery to IEC 254-2, A, B, C, No 1EC 254-2; A IEC 254-2; A 6.5 Battery to IEC 254-2, A, B, C, No 1238 - 2310 1238 - 2310 6.5 Battery weight +/- 5% (depends on make) kg Micro-processor 8.4 Sound level at driver's ear dB(A) 68 68	, m	5.3	Lowering speed laden / unla	en m	1/S	variable*	variable*
Acceleration time (over 10 m) Taden / unlader S Variable* 5.10 Service brake generator generator 8 6.1 Drive motor, rating S2 = 60 min kW 7 7 6.2 Hoist motor, rating at S3 = 15% kW 20 - 24 20 - 24 6.3 Battery to IEC 254-2, A, B, C, No IEC 254-2; A IEC 254-2; A 6.4 Battery type, voltage, rated capacity Cs V/Ah PzS, 80 V, 420 - 930 Ah 6.5 Battery weight +/- 5% (depends on make) kg 1238 - 2310 8.1 Type of drive control Micro-processor Micro-processor 8.4 Sound level at driver's ear dB(A) 68 68	Perfo	5.4	Shifting speed laden / unla	en m	1/5	variable*	variable*
Sile Service brake Service brake Generator Generator <thgenerator< th=""> Generator</thgenerator<>	-	5.9	Acceleration time (over 10 m) laden / unia	en	S	variable	variable
original Drive motor, rating SZ = 00 mm KW // // // 6.2 Hoist motor, rating at S3 = 15% kW 20 - 24 20 - 24 20 - 24 6.3 Battery to IEC 254-2, A, B, C, No IEC 254-2; A IEC 254-2; A IEC 254-2; A 6.4 Battery type, voltage, rated capacity Cs V/Ah PzS, 80 V, 420 - 930 Ah PzS, 80 V, 420 - 930 Ah 6.5 Battery weight +/- 5% (depends on make) kg 1238 - 2310 1238 - 2310 8.1 Type of drive control Micro-processor Micro-processor 68		0.1U	Drive meter rating \$2 = 60 min				
Bit Bit <td>~</td> <td>0.1</td> <td>Heist motor, rating $52 = 00$ min</td> <td></td> <td>K VV</td> <td>20.24</td> <td>20.24</td>	~	0.1	Heist motor, rating $52 = 00$ min		K VV	20.24	20.24
Battery to rec 294-2; A, B, C, NO Tec 294-2; A Tec 294-2; A 6.4 Battery type, voltage, rated capacity Cs V/Ah PzS, 80 V, 420 - 930 Ah PzS, 80 V, 420 - 930 Ah 6.5 Battery weight +/- 5% (depends on make) kg 1238 - 2310 1238 - 2310 8.1 Type of drive control Micro-processor Micro-processor 68	tors	6.2	Pottory to IEC 254.2 A. P. C. No.		r vv	20 - 24 IEC 254 2: A	20 - 24 IEC 254 2: A
0.4 battery type, voltage, rated capacity Us V/An PZS, 80 V, 420 - 930 Ah 6.5 Battery weight +/- 5% (depends on make) kg 1238 - 2310 1238 - 2310 8.1 Type of drive control Micro-processor Micro-processor 68 8.4 Sound level at driver's ear dB(A) 68 68	m.	0.3	Dattery to IEC 204-2, A, D, C, NO		AL	IEU 204-2; A	TEU 204-2; A
Ballet yweight +/- 5% (depends on make) Kg 1238 - 2310 1238 - 2310 8.1 Type of drive control Micro-processor Micro-processor 8.4 Sound level at driver's ear dB(A) 68 68		0.4	Dattery type, voltage, rated capacity Us	V/	An	rzə, 80 V, 420 - 930 Ah	1220 2210
8.4 Sound level at driver's ear dB(A) 68 68		0.0	Tupo of drive control		кg	1230 - 2310	1230 - 2310
5 0.4 OUTIG rever at OTIVET's ear OB(A) 08 68	sc	0.1	Type of drive control	ID	(A)	wicro-processor	wicro-processor
	Misc	0.4	Sound level at univer s ear	dB	(A)	08	08

* = These values are scaleable and match the customer's individual requirements.

MX-Q Technical data

Telescopic mast. (all height details in mm)

Туре	Total lift from	Total lift	Main lift	Height lowered	Auxiliary lift	Platform heigth	Picking height	Overall height
h1	floor h ₂₅	h ₂₄	h₃	h13	h,	h12	h28	h4
	(h3+h9+h13)	(h3+h9)				(h3+h7)	(h7+1600)	(h₃+h₅)
7.400	12.980	12.600	11.800	380	800	12.230	13.830	14.355
6.900	11.980	11.600	10.800	380	800	11.230	12.830	13.355
6.400	11.180	10.800	10.000	380	800	10.430	12.030	12.555
5.900	10.180	9.800	9.000	380	800	9.430	11.030	11.555
5.400	9.380	9.000	8.200	380	800	8.630	10.230	10.755
4.900	8.380	8.000	7.200	380	800	7.630	9.230	9.755
4.400	7.380	7.000	6.200	380	800	6.630	8.230	8.755
3.900	6.380	6.000	5.200	380	800	5.630	7.230	7.755
3.400	5.380	5.000	4.200	380	800	4.630	6.230	6.755
2.900	4.380	4.000	3.200	380	800	3.630	5.230	5.755
2.400	3.480	3.100	2.300	380	800	2.730	4.330	4.855

Triplex mast with free lift. (all height details in mm)

Туре	Total lift from	Total lift	Main lift	Free lift	Height lowered	Auxiliary lift	Platform heigth	Picking height	Overall height
h1	floor h25	h24	h3	h2	h13	h۶	h12	h28	h4
	(h3+h9+h13)	(h3+h9)		(h1 -1250)			(h3+h7)	(h7+1600)	(h₃+h₅)
5.900	14.030	13.650	12.850	4.650	380	800	13.280	14.880	15.405
5.400	12.730	12.350	11.550	4.150	380	800	11.980	13.580	14.105
4.900	11.230	10.850	10.050	3.650	380	800	10.480	12.080	12.605
4.400	9.930	9.550	8.750	3.150	380	800	9.180	10.780	11.305
3.900	8.630	8.250	7.450	2.650	380	800	7.880	9.480	10.005
3.400	7.530	7.150	6.350	2.150	380	800	6.780	8.380	8.905
2.900	6.230	5.850	5.050	1.650	380	800	5.480	7.080	7.605



Au





Standard telescopic fork version.

- Narrow working aisles.
- Minimum space required for changing aisles.
- Capacity up to 1250 kg max.

			a ₂₁ = 90 mm	a = 200 mm	Capacity						
Model	el lexb12 pallet A a22 x le h9 b3 b7									Au min. / req.	Q max.
MX-Q	1200 x 800	500	100	710	1210	variable*	1055	1290	1380	variable*	1250
	1200 x 1000	600	100	710	1310	variable*	1055	1290	1380	variable*	1250
	1200 x 1200	700	100	710	1410	variable*	1305	1290	1380	variable*	1000
	1240 x 835	500	82	710	1210	variable*	1055	1330	1420	variable*	1250
	1300 x 1300	700	50	710	1410	variable*	1355	1390	1480	variable*	1000

* = These values are scaleable and match the customer's individual requirements.



Low telescopic fork version.

- The lowest racking support can be as low as 100 mm above the floor, giving optimal utilisation of space in the bottom area of the racking. h₉ = 180
- Narrow working aisles.
- Minimum space required for changing aisles.
- Capacity up to 1250 kg max.

		a ₂₁ = 90 mm	a = 200 mm	Capacity							
Model	l ₆ xb ₁₂ pallet	А	a 22	х	18	h۶	b₃	b7	Ast min.	Au min. / req.	Q max.
MX-Q	1200 x 800	450	50	725	1175	variable*	1165	1290	1380	variable*	1250
	1200 x 1000	550	50	725	1275	variable*	1365	1290	1380	variable*	1000
	1200 x 1200	650	50	725	1375	variable*	1565	1290	1380	variable*	800
	1240 x 835	450	30	725	1175	variable*	1165	1330	1420	variable*	1250
	1300 x 1300	700	50	725	1425	variable*	1665	1390	1480	variable*	800

* = These values are scaleable and match the customer's individual requirements.



For further information on the MX-X please visit: www.still.de

STILL GmbH Berzeliusstrasse 10 D-22113 Hamburg Telephone: +49 (0)40/73 39-0 Telefax: +49 (0)40/73 39-16 22 info@still.de www.still.de MX/X MX/Q 3 e 05/05 TD The models in this brochure may contain special parts or attrachments which are not supplied as standard. We reserve the right to modify design, specification and standard equipment at any time.

Achieve more.