Instruction book

Maxtruck 2T

MAX TRUCK AB

June 20, 2016
REV:E
CL

INTRODUCTION

For safe operation of Maxtruck 2T handling indoors requires some knowledge contained in this documentation. The information is presented in short and clear form.

Safety instructions and important explanations are marked by the following pictograms

Standing in front of instructions that must be observed to avoid damage to property.
Standing in front of the safety instructions that must be observed to avoid personal injury.

Standing in front of explanations and references.

Specifies that the operating manual must be read. Available also as a small symbol on important signs.

Specifies that the staff should not be staying under raised tool or cargo.

Specifies that no passengers are allowed on the truck and that the driver should always wear a seat belt.

Specifies that one always for drivers to take the key from the forklift when leaving the forklift to help prevent unauthorized can utilize the truck.

This plate must alert the driver that he must regularly monitor the tool is correctly installed and locked into position for use.

This plate also sits on the forklift's exterior in a larger size, indicates that staff are not allowed beside the forklift during operation.

The manufacturer reserves the right to make changes within the scope of technical development without simultaneously change this manual.

Max Truck AB

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Innehåll

INTENDED USE

The vehicle handling described in this manual is a vehicle that is suitable for lifting and transporting goods or any other data using additive utilities.
Maxtruck 2T is especially suited for indoor work, but can be operated outdoors on dry surfaces composed of concrete or hard asphalt.
The vehicle may only be used, operated and maintained according to instructions in this manual. Using the forklift for indications other than the intended is not appropriate and may involve the risk of personal injury, property damage or other tangible damage. On truck-ranking nameplate or load chart must be followed regarding maximum load capacity.
The user must ensure that damaged and / or difficult-readable load charts renewed.
The vehicle handling and outdoor shall not be used in the vicinity of flammable or explosive substances or exposed to corrosion driving and extremely dusty environment.

User responsibility: Users under the user guide is the natural or legal persons who engage in vehicle handling by themselves or through Agents. In special cases (leasing, renting) are counted as users of the person assigned responsibility for running the vehicle for cargo handling by agreement between the machine owner and the person / persons using the forklift. The user must ensure that the forklift is only used appropriately so that operational staff or third-party life and health are not compromised. In addition, the user is responsible to accident prevention against accidents, other safety rules and instructions for operation, service and maintenance are strictly followed. The user must ensure that all users of the forklift have read and understand the instructions in these instructions.

If this manual is not observed, warranty will expire. The same applies if the client and / or third parties without the consent of the manufacturer do not perform professional work on or change to the product.

Mounting of accessories: all on or installation of additional equipment that is not supplied by Max Truck AB, which results in interference or completion of the forklift functional parts requires prior written approval from the Max Truck AB.

You may also need to obtain permission from local authorities.

Authorization document does not replace the approval of the manufacturer.

Connected trailer: Only by Max Truck AB allowable trailer may be connected to the vehicle. With the trailer attached to the truck, it is only allowed to drive in control mode D2 conventional rear-wheel steered forklift when a trailer can´t follow the movement´s in the steering mode D1.

A. VEHICLE DESCRIPTION

Application Description

Maxtruck 2T is an electrically powered forklift with traction on the front wheels and steering on all four wheels. The driver is placed in a driver's seat with the controls on armrest panels and with excellent visibility in all directions. The truck can handle loads for lifting, transporting outside and inside the wheelbase.

The truck is a counterbalance truck with Omni-directional drive but with cargo uptake through the right side positioned telescopic boom. The truck can also handle long goods (6 m or longer) through narrow doors when it can move in all directions with and without load.

In addition, the pallets according to DIN 15142, boxes with sides of wire mesh according to DIN 15144 and other pallets with cargo can be stacked and transported

The vehicle data and max. Load capacity:

Type	Max. Load capacity *)	Load distance	Extended
Maxtruck 2T	2000 kg	500 mm	0
Maxtruck 2T	1000 kg	500 mm	1000
Maxtruck 2T	750 kg	500 mm	1500
Maxtruck 2T	500 kg	500 mm	2100

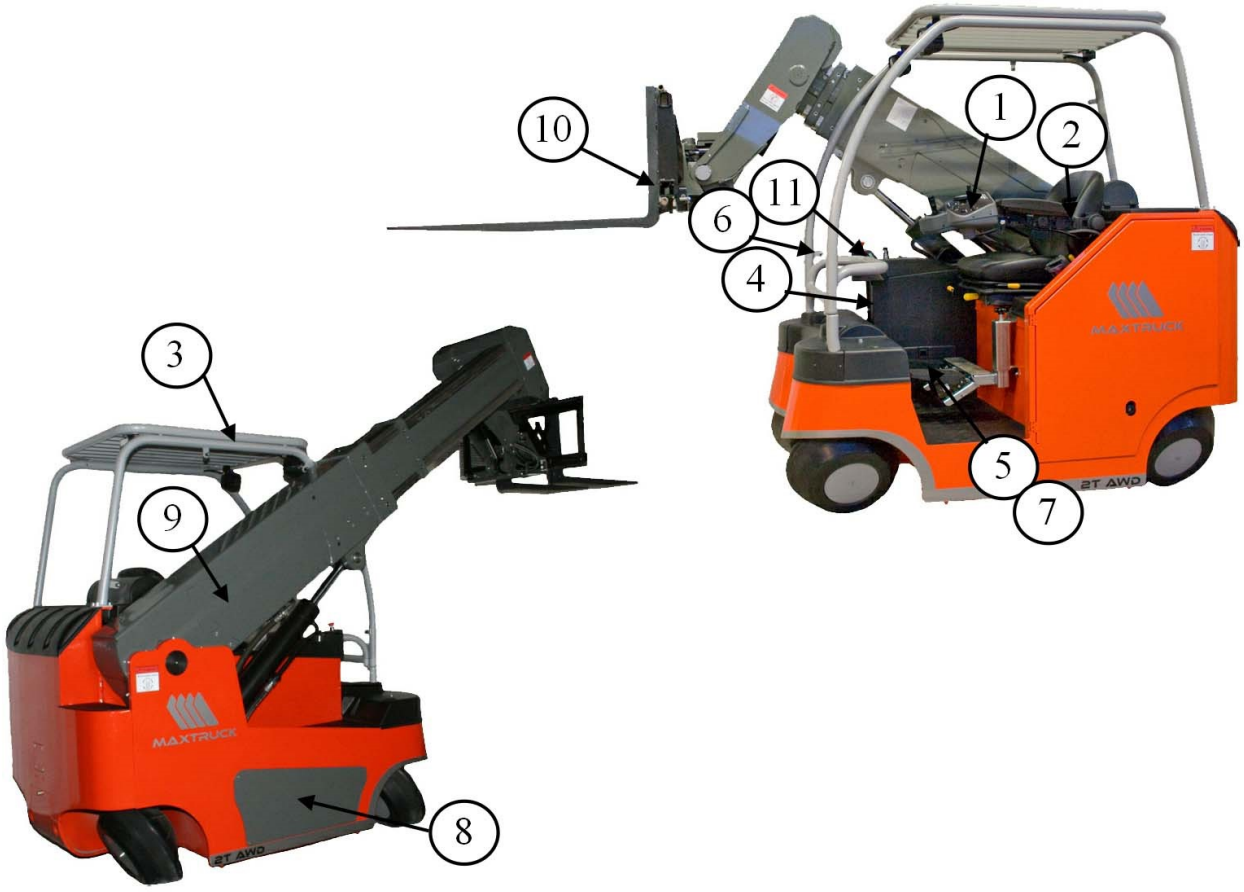
Extension relates mm extension of the telescoping boom

*) It is always load chart on the vehicle, applying

Description of units and functions

PICTURE OF THE TRUCK WITH POS. No.

POS. No. AND EXPLANATION



Vehicle

Steering (1)

The truck's steering wheel is of type multi-way steering wheel with a large knot that shows direction D1 operation.
The control dial has a motor function at certain operating conditions can control the steering wheel.
In D2 operating as normal rear wheel driven truck the driver must sense the position of the steering wheel and then turn the wheel to the right position during drive. In this mode, the knob on the steering wheel only as a means to turn the wheel right. D2 operation is limited steering angle to 1.5 turns to the left and 1.5 turns to the right as on a conventional counterbalance truck. The restriction is done by buzzer sounds if you turn the steering wheel too far or if you turn the wrong direction from the end positions.

Driver seat (2)

The driver's seat is comfortable and adjustable in the longitudinal direction and the pedals are adjustable in height. There is a weight adjustment for the weights of the drivers.
There are storage sites for documents and driver's personal items.
The operator controls the lifting functions using the right control panel and steering with the left control panel. All-important lift functions are operated with a joystick on the right control panel.
Control of the forklift operation in D2 steering mode occurs with steering wheel (multi turned) on the left control panel. At Omni-directional D1 steering mode it is controlled by the steering wheel on the left control panel plus two control pedals for the left foot for turning the truck Right - Left.

Driver's protection roof (3)

Is designed to protect the operator from falling goods according to the requirements of standard ISO 6055

Electronics (4)

State of the art 3ph AC technique used for all motors with data communication via CAN-Bus system imposes minimized the cable system in the truck.
This brings advantages in terms of full monitoring for all control functions.
The complex microprocessor control is easy to use, secure and flexible.
Error analysis and programming are implemented very simply and above all quickly using a separate PC.

Traction and break (5)

Front operation always gives the best traction force to the rear wheels when the truck carrying the cargo.
At speed reduction, power is generated back to the battery from the traction motors. (Also, the lift function generates power back when lowering the load)
This minimizes energy consumption. Mechanical brake hubs for faster deceleration or braking if the power supply is lost.

Parking brake (6)

When the parking brake is activated, the forklift´s traction is blocked.
When the parking brake is released, the brake pedal is operated as normal service brake when necessary. Normal speed reduction is via regeneration of power back to the battery when the accelerator pedal is released.

Service brake (7)

Maxtruck 2T has a mechanical service brake in addition to the power generation service brake controlled by the accelerator pedal. The service brake comprises a brake pedal acting on the brake disc coupled to the drive shaft of the respective drive wheels. Disc brake's stopping power is sufficient to slow down the truck with a full load in the maximum slope that the truck may be driven in.
If the foot brake is affected during normal braking is reduced power regeneration automatically when necessary to truck stability is not jeopardized by the rapid deceleration. At all braking with the foot brake is up to the driver's responsibility not to slow down too quickly with the load in the raised position, as this can affect the stability of the truck.
In normal braking through power generation the progress is monitored and controlled by the truck's built-in security ASE system.

Hydraulic system (8)

The hydraulic system in Maxtruck 2T is different than all other trucks and therefore patented. The system works with a pump for each main function of the lifting system which allows for automatic control functions.
The hydraulic system has very high efficiency with low heat losses to the oil and therefore the forklift just need 9 litres oil tank, which benefits the environment during oil changes.
The system works with custom pressure in all operating conditions to minimize the risk of oil leakage from the truck and the noise level is also thereby low from the hydraulic system. All systems are built to regenerate power back to the battery to optimize battery capacity.

Telescopic boom (9)

One of the objectives in the design of Maxtruck 2T was to improve visibility for drivers in all operating modes with or without load. By ensuring 100% visibilities for the operator it can minimize personal accidents. By right-positioned telescopic boom instead of truck frame and the ability to run in all directions, the driver can drive the truck even with bulky cargo and 100% visibility for the driver.

Fork tool (10)

Maxtruck 2T is provided with a fork tool type ISO2A standard. As option it can be supplied different types of tools that can be quickly fitted to the truck via the special tool holder.

Instrument panel (11)

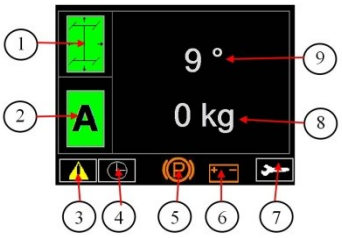
The instrument panel is mounted on the driver's right side and contains following.

1- Display for information to the driver
2- Pushbutton to see alarm codes
3- Pushbutton to see running hours
4- Navigator button
5- Pushbutton for calibration menu
6- Pushbutton to see motor fault codes
7- Emergency stop button
8- Battery status indicator
9- Start key
10- Switch for head lamps

Presentation of the display unit pictures

The truck's display has the task of providing information to the driver while driving.

The images change depending on the current operating mode and the truck's status.

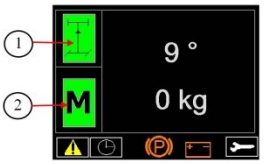


The picture shows the current operating mode in which (1) indicates that the truck is ready for Omni-directional drive (D1). Upon failure of the control or operation switches the green indicator goes too red.

The symbol A in (2) indicates that the hydraulic system is set for automatic controlled lift. Turns red on failure of the hydraulic system.

The symbol (3) shows that the button under the symbol can be used to go in and check the alarm codes. The symbol (4) indicates that the button under the symbol allows you to check the operating time. The symbol (5) indicates that the parking brake is activated. The symbol (6) indicates that the battery needs charging. The symbol (7) indicates that with the key under the symbol you can go into the service mode. Only for service technician.

(8) Shows the actual weight of the load you have on the forks.



(9) Shows the forks tilt with respect to the horizontal.

The picture shows (1) that the truck is set up for forklift steering D2 (Control only with the rear wheels)
(2) Indicates that the hydraulic system is in manual mode.

This display appears when the tool lock is open. Simultaneously, a continuous buzzer signal to attract the driver's attention to lock tools. After locking it should be kept in lock command for five seconds to turn the buzzer off.

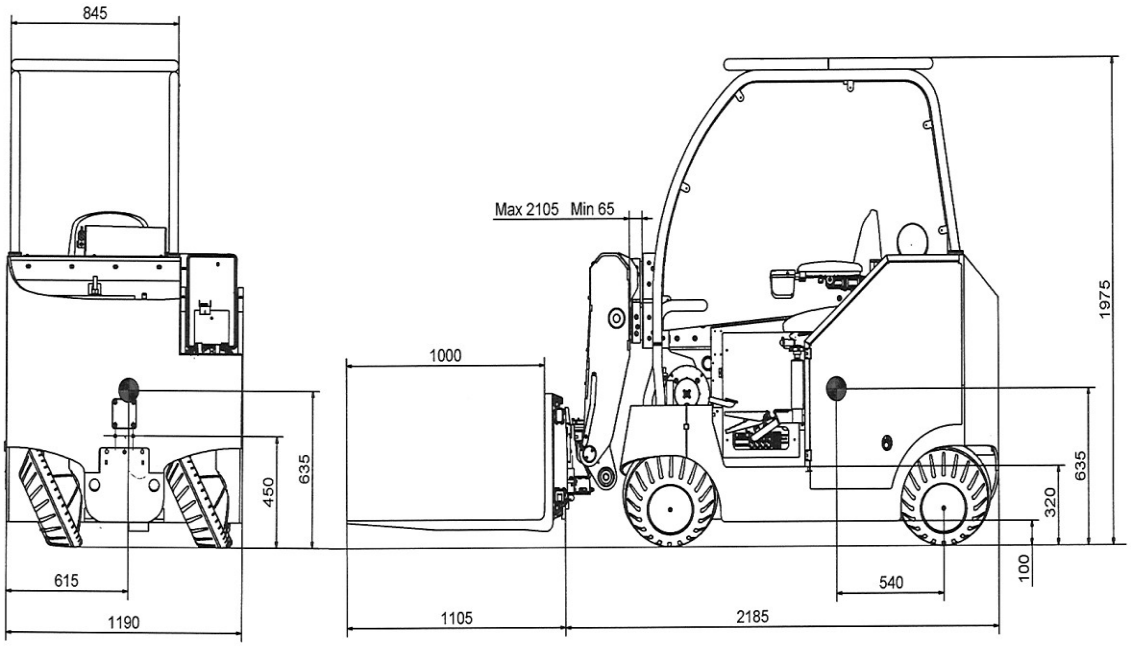
This display appears during the start-up of the forklift to indicate that it is not fully ready. When the picture changes to the normal display image, the truck can be activated for operation.

Technical data standard

	Description	Data	Unit
H1	Height of forklift	1972	mm
H2	Max lifting height forks	4200	mm
H3	Max retraction of forks	2105	mm
H4	Free height over driver seat	1000	mm
H5	Driver seat height over floor	608	mm
H6	Free height under fork lift	99	mm
H7	Structure height at max lifting height	5037	mm
H8	Trailer connection height	450	mm
L1	Length inclusive standard forks	3290	mm
L2	Length exclusive forks	2177	mm
L3	Fork lift length when forks over cabin	1910	mm
L4	Load distance on forks	500	mm
L5	Wheelbase	1378	mm
B1	Total forklift width	1190	mm
B2	Track width front axle min / max	770/1000	mm

B3	Track width rear axle min/max	740/970	mm
B4	Width fork back	1200	mm
AB	Width fork lift aisle 1200 pall long way	3500	mm
BB	Width fork lift aisle 1200 pall crossway	3200	mm
R	Turning radius	0	mm

MAXTRUCK 2T DIMENSIONS



Performance

Description	Data	unit
Max load capacity	2000	kg
Load centre on forks	500	mm
Traveling speed max	16	km/h
Lifting speed with/without load	0.4 / 0.6	m/s
Max inclination with/without load	5 / 7	%
Acceleration with/without load 10 m	4,2 / 3,9	s

Weights

Description	Data	unit
Dead weight with batteries	3600	kg
Battery weight (2 x 300 kg)	600	kg
Axle load with max load, front / rear	4800 / 800	kg
Axle load without load, front / rear	1400 / 2200	kg

Tire and wheel equipment

Description	Data	unit
Max wheel hub front/rear	Moulded steel hub	
Max wheel tire	PUR 90 Shore black non marking	
Wheel dimensions	Diameter 450	mm
Weight of wheel	45	kg
Front track min / max	770/1000	mm
Rear track min/max	740/970	mm

EN-norms

Continuous sound pressure level

Maxtruck 2T = 70 dB(A)
According to EN 12053 in accordance with ISO 4871.

The continuous sound pressure level is according to prescribed standards of an average value calculated by reference to the sound pressure level while driving, lifting and idling. The sound pressure level measured at the driver's ear.

Vibration: = 0,45 m/s2
According EN 13059

Electromagnetic compatibility (EMC)
The manufacturer confirms the compliance with the limit values for emitted electromagnetic radiation and the influence of electromagnetic radiation as well as a test of the influence of static discharge of electricity in accordance with EN 12895 and references to other standards thus included.

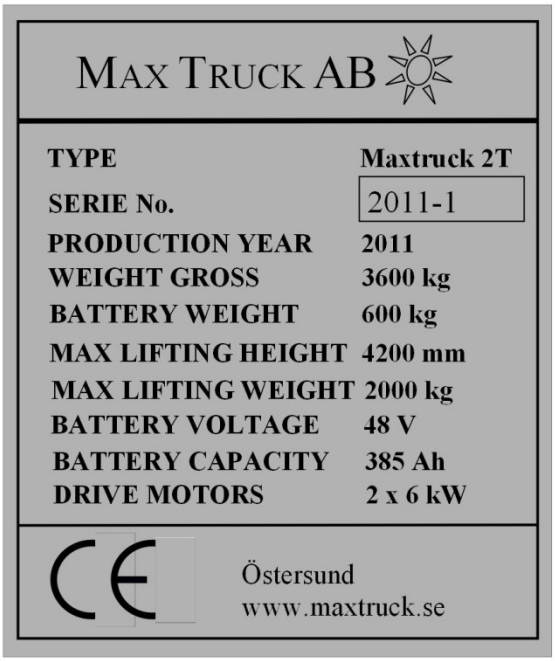
Changes of electrical and electronic components and its function may be performed only after written approval by the manufacturer.

Operating conditions

Ambient temperature when operating -20 C to +40 C
Industrial trucks shall be specially equipped and approved for continuous use in environments with temperatures below +5 ° C or in cold stores with extreme temperatures and humidity.

Name plate, vehicle

Picture of name plate



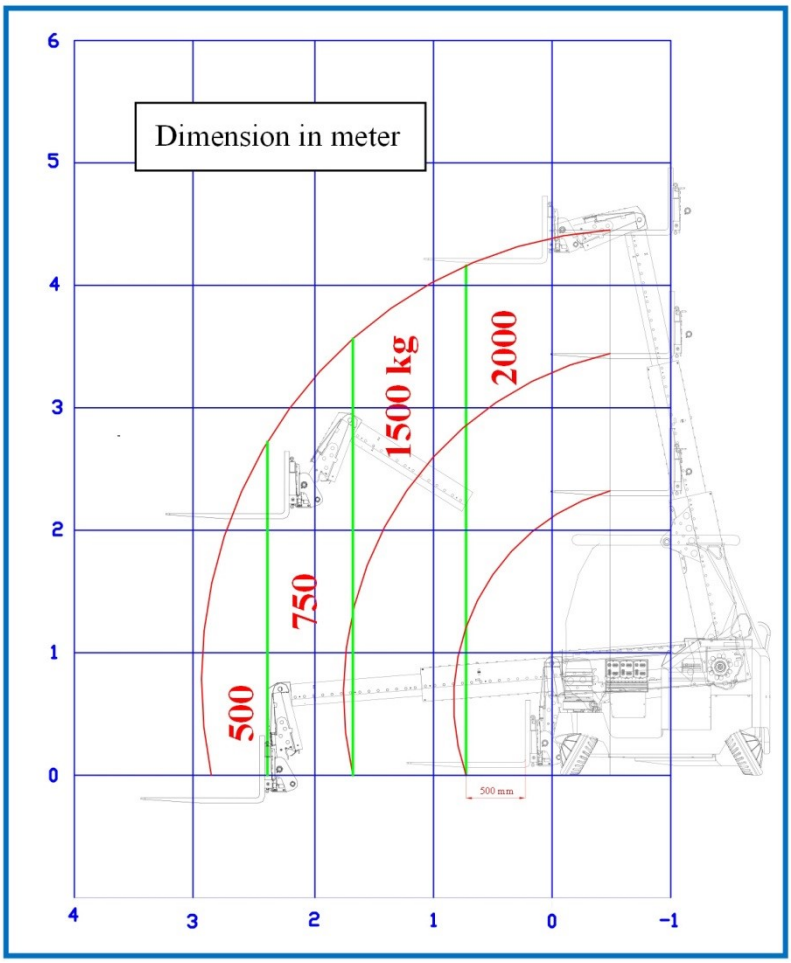
For inquiries regarding the forklift, or when ordering spare parts please mention the type and serial no according to the name plate above.

Load diagram

The vehicle's load chart indicates the carrying capacity in kg at different extensions on telescopic boom. Also shows the total height at each extension.

The fork lift's payload monitored and limited completely automatically by the safety system.

Diagram lift capacity



Vertical axis and horizontal axis indicates the dimensions in meters.
The centre of gravity is assumed to be 500 mm on the forks.
Green line indicates the maximum extended for each payload.
This diagram is based on standard fork tool ISO 2 with 1150 long forks.
The weight of the standard fork tool is 135 kg.

B. TRANSPORT AND FIRST START

Crane transport

Only use lifting gear with sufficient carrying capacity. (Gross Weight = 3600 kg see nameplate vehicles).

Crane transport is only intended to be used before first start up.
Lifting straps must be at least 4 m long (Circumference 8 m) and each 5 tons capacity.
Lifting straps must be placed according picture behind front wheels and in front of rear wheels.

If necessary spreaders must be used to avoid damages on the roof.

Shorter lifting straps must not be used due to potential risk to damage the roof.

Secure the vehicle during transport

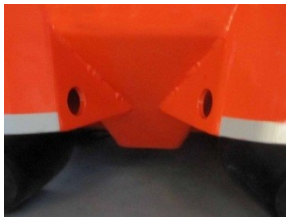
During transport by truck or trailer, the forklift must be secured properly. The truck or trailer shall be equipped with lashing points and solid wood flooring. The loading shall be performed by specially trained personnel and in accordance with the recommendations. A correct planning and implementation of load securing measures shall be determined in each case. It's on the truck driver's responsibility that the forklift is fastened as prescribed prior to transport.

To secure a Maxtruck 2T forklift, the two in front and rear two lashing points to be used.

PICTURE ON FIXING HOLES FOR TRANSPORT

Rear fixing holes

Front fixing holes



First start-up

The first start-up of Maxtruck 2T and the instructions to the driver may only be made by persons who have equivalent training.

Drive the truck only on battery power.
The electronic components can be damaged by a rectified alternating current.
To make the truck ready for operation after delivery or transport check following items:

- Check that the equipment is complete.
- Check the battery connections and electrolyte level
- Make sure the battery is fully charged
- Take the truck in operation as described

Moving the truck without its own electric power

Maxtruck 2T can be moved without its own electric power in the form of towing or by hand rolled on the floor if the drive wheels are in the direction that it intends to move the truck. If the drive or steering wheels are in the wrong direction it can´t be mowed. Moving in such a position must be made with another truck that can lift it or via overhead crane if available.

Towing Maxtruck 2T

Maxtruck 2T, according to the reasons explained in the previous paragraph can´t be towed by another forklift or vehicle unless the drive wheels and the steering wheels is in the right direction. If the rear steering wheels or the front drive wheels are in line with the forklift, however, the forklift can be moved by another forklift or pallet jack to lift the truck's drive wheels or the steering wheel from the floor.

Otherwise, the Maxtruck 2T must be carried by another forklift or possibly with two pallet truck or overhead crane.

C. BATTERY-SERVICE, CHARGING, CHANGE

Safety regulations for batteries with sulphuric acid

In all actions on the batteries the Maxtruck 2T must be parked safely (see Section C).

Service personnel
Recharging, servicing and replacement of batteries should be performed by trained personnel. These instructions and the instructions provided by the manufacturers of batteries and battery charger provided must be followed.

Fire protection measures
When handling batteries, it is forbidden to smoke or use an open flame. Ensure that no combustible materials or spark fuels are within a radius of at least 2 m from the place where the truck is set up for charging.
The room must be well ventilated and fire-fighting equipment must be in place.

Service of battery
Keep the battery cell caps dry and clean. The connectors and cable terminals should be clean, lightly greased with pole grease and greatly tightened.

Disposing of the battery
Disposing of the battery is only allowed with respect to and carefully sightings of the national environmental regulations for hazardous products. Manufacturer's instructions regarding disposal should be strictly observed.

Before closing the battery compartment door make sure the battery is fully in, securely locked and that the battery cables not are damaged.

Batteries contain sulphuric acid, which is poisonous and corrosive. Therefore, use protective clothing and eye protection when working with batteries and avoid all contact with battery acid.
If an accident occurs and clothing, skin or eyes come in contact with battery acid rinse immediately with plenty of water.
In case of skin or eye contact you should also seek medical advice.
Spilled battery acid must be immediately neutralized.

Only batteries with sealed housing and approved by the manufacturer may be used.

This plate is mounted at the display window of the battery switch to indicate when the battery fluid to be filled. If the indicator turns green, it is enough liquid in the batteries. When the indicator flashes red, the battery water should be topped up in all the cells on the two battery blocks.

Battery types

Depending on the application the vehicle can be equipped with different battery types. The following table shows, with the capacity, which combinations are standard and option following DIN 43535.

Maxtruck 2T Standard battery upper case	**12 cells type 5ETZS400, 400 Ah/5h**
Maxtruck 2T Standard battery lower case	**12 cells type 5ETZS400, 400 Ah/5h**
Maxtruck 2T Option battery upper case	12 cells type 8 EPzB 440, 440A h/5h
Maxtruck 2T Option battery lower case	12 cells type 8 EPzB 440, 440A h/5h

Battery weight indicated on the battery nameplate and the forklift's data plate.

Battery weight and size greatly affects the stability of the truck. Battery size and weight must therefore be consistent with the data on the dimensions so that they can fit in the battery boxes without standing up over the vessel edges and to be as heavy as the standard battery.
If the Maxtruck 2T is supplied with options 440 Ah batteries, new batteries of the same weight must be used if replaced. If not, the Maxtruck 2T´s performance will decrease and monitoring system will be eliminated due to changes counterweight.

Battery weight and size greatly affects the stability of the truck.

It is only allowed to drive the forklift with batteries that differ when the manufacturer's permission has first been obtained.

Battery weight standard battery 400 Ah upper case	310 kg (including the battery box)
Battery weight standard battery 400 Ah lower case	310 kg (including the battery box)
Total weight standard battery 400 Ah	620 kg

Battery weight option battery 440 Ah upper case	335 kg
Battery weight option battery 440 Ah lower case	335 kg
Total weight optional battery 440 Ah	670 kg

If the Maxtruck 2T is delivered with 440 Ah batteries from the manufacturer, the higher battery weight has been compensated with less weight on the rear counterweight.

The lifting capacity will be reduced if a smaller battery fitted.

Opening the battery compartment door

The battery compartment door is opened with the lock mechanism located centrally at the bottom of the door. The door opens forward with hinges located on the left side of the door.

Making the battery accessible for battery replacement

Securely park the Maxtruck 2T on horizontal floor (see Chapter E).
- Stop the forklift by first turning the ignition key to the "Off" position.
- Turn the battery switch to the "Off" position.
- Open the battery door to the fully opened position.
- The battery in its battery boxes is via a built-in mechanism secured to the forklift and can´t roll out even if the door is open.

Change of battery

The truck must be positioned on a horizontal surface during battery replacement and with no load on the forks when the batteries are working as part of the forklift's counterweight.

With the battery compartment door open the battery trolley (Option) can be docked to the forklift and locked by the hooked mechanism to the forklift. Then the respective battery box can be pulled out and locked to the battery trolley. When both batteries are pulled out and locked into battery trolley, battery trolley can be disconnected from the forklift.

Charged batteries on another trolley can then be docked to the forklift in the same way and the batteries are inserted one at a time. Check that the batteries are completely full in before the battery trolley is disconnected from the truck.

Battery electric connector to the forklift is unlooked automatically when the battery box is pulled out of the truck so it is very important that the truck is not in operation and the main breaker for the batteries is in the "Off" position.

The batteries may only be taken out and fitted in when the battery switch is disconnected.

Charging the battery

Prepare the battery for charging by stopping the truck and switch off the battery switch.

Connection between battery and charger may only be made with disconnected charger. (Charger in off position)
During charging, the battery cells may not be covered to ensure adequate ventilation.
Ideally, the battery compartment door is left open during charging of the batteries in the truck.

Check before charging all cable and connectors for visible damage and that the battery fluid level is normal
- Connect the battery charging units charging cable to the forklift`s connector over the main switch for the battery.
- Disconnect the battery charger and charge the battery as directed from the battery - and the charger manufacturer.

BATTERY CHARGING

- Check battery fluid indicator, when red light fill up
- Fill water via quick connector on battery
- Switch off the battery switch
- Connect the charger to connector under battery switch
- Start the charger
- Disconnect charger when fully charged battery

Follow the safety instructions from the battery and charger manufacturers very carefully. The battery must while charging absolutely not be covered, so gases produced during charging can be ventilated of.
Use of open fire and flames is prohibited. Danger of explosion!

Battery charge indictor

Battery Charge Indicator: The battery charge is indicated in 10% increments on display for information and for service. (100% = the battery capacity 100%. Indicating 0% battery capacity = 20%).

D. OPERATION

Safety rules for the operation of the vehicle

Driving permits

Industrial forklifts must only be used by trained and authorized personnel that have skill in driving and handling of cargo and by the company designated as a truck driver.

OPERATING INSTRUCTION

- Put on safetybelt
- Turn down left armrest (control panel)
- Turn on battery switch to the left of driver chair
- Start by turning start key to start position
- Aktivate Maxtruck 2T with toggle switch on joystick
- Select D1 for Omni-directional drive
- Select D2 for normal counterballance forklift drive
- Release parking brake
- Drive with accelerator and steer with steering wheel
- When parking connect parking brake
- Turn off start key and remove it from forklift
- Turn off battery switch at longer stops
- Fold up left control panel
- Disconnect safety belt and leav the forklift

Driver's powers, duties and conducts

The driver must have been informed about their powers and duties, and had been trained in the operation of Maxtruck 2T. He should be well versed in the contents of these operating instructions.

Drivers must be given the authorities for operation of the Maxtruck 2T

SAFETY

- Always use seatbelt
- Never drive with uplifted load
- Read manual
- Do not stay under a lifted load
- Use parking brake
- Prohibited for passengers
- No staff beside the truck at run
- Check tool locking

Banning the use of unauthorized

The driver is responsible for the forklift during operation. Drivers must prohibit any unauthorized person to drive or operate the forklift. No persons may be taken with or lifted.

Damage and defects

Injuries and other shortcomings of the forklift or attachments should be immediately reported to maintenance personnel. A forklift that is not secure (such as worn tires or defective brakes) must not be used until it has been repaired as prescribed.

Repairs

The driver must not perform repairs or alterations to the truck, if he had not received special training and permission for these actions. He must not disconnect or make changes to any safety or switches.

Danger zone

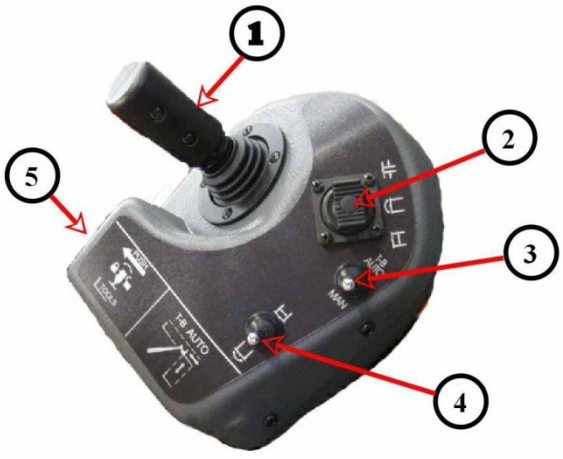
The danger zone covers the area in which personal safety is endangered by forklift driving and lifting movements, its load-carrying equipment (e.g. forks or attachments) or load cargo. This also includes the area that can be reached by falling loads or declining and falling tools.

Unauthorized persons must be banished from the danger zone. If personal danger arises, the warning signal is given in advance. The operator shall immediately cease work on the forklift if people despite warning not leave the danger zone.

Control functions on the left control panel

1 - Steering Wheel
2 - Control mode D1 or D2
3 - Horn
4 - Switch Front - Back to the operation
5 - Switch Right - Left rotation
6 – Not used

Control functions on the right control panel



1 - Joystick lift functions
2 – Fork spread or fork side shift
3 - Switch Manual - Automatic lift function
4 - Switch shift fork - fork side shift
5 - Push button for tool clamping and for weight locking

Take the forklift in service

Before the forklift is started, operated or takes up the load, the driver must ensure that nobody is within the danger zone and that forklift is reliable in condition.

Controls and measures before the daily operational starts

Before the forklift is started up, the driver must ensure that the forklift is reliable in the condition and before commencement of work it shall be checked that:
- Foot break and parking brake works
- The fork legs have no visible damage (bent, cracked or severely worn)
- Warning devices function

Adjusting the driver seat

1- Position lengthwise
2 - Driver Importance (Weight adjustment)
3 - Seat cushion tilt
4 - The backrest inclination
5 - Setting the pedal height
6 - Locking the pedal height adjustment To achieve an optimal seat cushioning in the driver's seat, adjust the driver's weight (2).
To adjust, the driver's seat must be relieved!

Please note that any adjustment of seat position must be done with stationary forklift.

Set the seat in a position:
-Lever (1) is adjusted the seat position in the longitudinal direction so that the comfortable distance is obtained.

Setting the weight of the driver:
- Pull the weight adjustment Driver's seat "(2) to the left for less weight and to the right for higher weight.

The setting range for the weight between 50 -120 kg.

Take place on the driver's seat.

Adjust the backrest tilt:
-With the lever (4) to adjust the backrest to the correct slope.

Adjust the seat angle:
-With the lever (3) adjusted the chair's seat to the proper angle.

Adjusting the pedal height:
-Release the handle (6)
-Turn the knob (5) clockwise to raise the pedal and counter clockwise to lower the pedal.
-Lock with handle (6) after adjusting the height of the pedals.

Seatbelt

The belt should be put on before the forklift starts to move.
The belt protects for serious injury!
Protect your belt for soiling (e.g. cover during standstill) and clean it regularly.
Thaw frozen belt buckle or reeling devices and dry them to prevent them from freezing.

The drying temperature for hot air must not exceed +60 ° C

Do not modify the seatbelt!
This results in a higher risk of malfunctions.
- Replace the seatbelt after an accident.
- Use only original spare parts for retrofitting and repairs.

If damaged and non-functioning seat belts be replaced by the manufacturer or vendor branch.

Behaviour in unusual situations

If the forklift threatens to tip over, do not try to loosen the belt and jump off.
Abandonment of forklift means greater danger of injury!

Correct behaviour:
- Bend your upper body forward
- Hold the roll bar in front of the chair with both hands and support with the feet.
- Lean body from the direction of fall.

Instructions for seatbelt

Before the forklift is started, pull the belt without pressure from the retractor, pull it next to the body of the femurs and close the lock

The belt shall not get to be twisted when it is turned on!
Seating at the truck always to be as far back as possible so that the back has support against the backrest.

Belt retractor leaves sufficient freedom of movement in the seat.

When sitting on the seat front edge protects the belt less by accident.

- After use, press the red button and the latch back to reeling.

Blocking automatic can be triggered if the tongue hitting the bracket.
Then you can´t pull out the belt.

Release the blocking:
- Pull the belt with great force 10 Nm about 15 mm out of the holder.
- Allow the belt to run back to loosen the blockage automation.
The belt goes back to pull out.

Behaviour at the start of the highly inclined position
At strongly inclined position can cause blocking of the automatic belt.
The belt can then not be pulled out of the holder.

Drive the truck carefully to the flat surface and put on the seatbelt.

Behaviour in unusual situations

If the vehicle is in danger of tipping, do not attempt to defect.
If you jump out of the forklift you increased risk of injury.

Setting the keypad left and right

- Loosen the knob on the right and left sides of the back and move the armrest up or down for the best location. Then tighten the knob on the right height.
- For length adjustment of the armrests and control panels loosen the stop screw under the armrest, adjust the length and pull the stop screw.

Making the forklift ready for operation

- Sit in the driver's seat and lower the left armrest with the left control panel.
- Insert the key (5) in the ignition switch.
- Switch on the main switch (4)
- Turn the ignition key to the operation mode and wait until the stop symbol no longer is visible on the display unit.
- Turn the ignition key to the start position and then release it back to the operating position.
- Move the toggle switch for the telescopic boom up and down and the control system is now activated. The wheels is not moving before the driver starts to turn the steering wheel.
- Make sure the parking brake is released and the mechanical brake works by pressing the pedal and then release it. A buzzer alarm comes on if you try to drive without releasing parking break.

(Normally the forklift is breaking by regenerating power back to the battery when the accelerator pedal is released. Faster braking can be obtained in an emergency situation, if the mechanical brake is used.)

 NOTE that the mechanical service brake is not controlled by the security system, therefore, caution should be used when braking with a load on the forks.

- The forklift is now ready for operation.

After the EMERGENCY STOP is deactivated and the ignition key is turned to the start position performs Maxtruck 2T a self-control (test of control and motors) for about 3-4 seconds. During the test is truck movements not possible. Any errors are presented on the display.

Load handling

Safety rules for driving

Duties of the vehicle for cargo handling indoors
Safety rules for driving

Transportation routes and work areas:
The forklift must only be run on permitted routes and areas.
Unauthorized personnel must stay away from work area.

Attitude when driving: The driver must adjust the speed to the local conditions. Drivers must e.g. drive slowly in curves, by and through narrow passages, when driving through the swing doors and at incalculable places. The driver must always keep a safe braking distance to the vehicle driving in front of and always have the vehicle under control. It is forbidden to suddenly stop (with the exception of danger) to rapidly turning, overtaking at dangerous places and places with poor visibility.
It is forbidden to lean out of the truck's canopy.

Visibility when driving: The driver had to look in the direction of travel and always have sufficient oversees transportation route. Transported cargo that encroaches on visibility, then the Maxtruck 2T can be driven sideways or turned up so that a clear view of the transport path is obtained.
Maxtruck 2T is unique in the sense that it can always drive the forklift with full view as the forklift can be driven in any direction.

Driving on inclines or slopes:
Driving on inclines or slopes is only permitted when they are sign posted traffic roads and clean, have enough friction and can according to the technical specifications of the vehicle safely be utilized. In doing so, the load should always be on the uphill side.
It is forbidden to turn, run diagonally, running laterally and to park the truck on inclines respectively slopes. On slopes, the forklift should only be operated at reduced speed and permanently braking readiness.

Driving in lifts or on loading docks:
In elevators or on loading docks, the forklift is only allowed, when they have sufficient carrying capacity, this because of their design appropriate and approved by the company.
It should be checked before driving. The forklift must be driven into the elevator with the load up and take a position that excludes the touch of walls. People who travel in the lift can´t go in until the forklift is sure, and they must leave the lift before the forklift.

Nature of the cargo to be transported:
The driver must ensure that the load is in the prescribed condition. It may only be transported cargoes are secured as Regulations.
Towing or to tow may only be made in exceptional cases on stable roads with a maximum slope of ± 1% and with a maximum speed of 5 km / h. Continuous trailer operation is not allowed. When pulling a trailer the forklift must always be run in the steering mode D2 corresponding normal truck steering with steering only on the rear wheels.
This is because no trailers can cope with Maxtruck's movements in Omni-directional mode D1.

The specified maximum load on trailers with or without breaks may not be exceeded.
Stated trailer load applies only to the factory-fitted trailer coupling.
If another connection is used, the coupling manufacturer applies but specified trailer loads with standard factory fitted must not to be exceeded even if the new clutch can handle higher values.

The driver must check that the trailer is safely switched on before starting the run.
When driving on the floor with a low coefficient of friction, it is the driver's responsibility not to exceed the forklift's operation, steering and braking ability. This is because these conditions can´t be monitored by the forklift's steering system.

Driving

Security Features
When driver not is in driver's seat prevented the driving function of the safety switch in the driver's seat.
The load of the driver's seat and activation of the drive function with the ignition key and the rocker for the telescopic boom that allows the controller to the drive motors start and the Maxtruck 2T can be driven.
Depending on load weights, telescopic extension, height of the load and the truck tilt customized truck's speed. Responsibility for the execution always falls on the driver, but the

safety system of the forklift support the driver in the decisions so the driver not in any position exceed safety levels on the Maxtruck 2T.

Drive only with closed, securely locked hoods and hatches.
Driving routs must be free from obstructions

- Lifting forks about 200 mm, so that they are free of the floor.

Forward Driving D2 (Rear Wheel Controlled)

Ensure that the operating direction is freely
- Release the parking brake (3)
- Select steering mode selector switch control mode D2.
- Activate the forklift with the ignition key (5) and flip-flop for the telescopic boom (11).
- Press the accelerator pedal (7) to begin the drive.
- Adjust the speed using the accelerator.
- Direction of drive can be changed by forward-reverse switch (12)
- The forklift is controlled with the steering wheel as a conventional rear-wheel driven forklift.
- Breaking the forklift by gently releasing the accelerator pedal.
- If necessary breaking with the mechanical brake.
- When parking always activate the parking brake.

Forward Driving D1 (Omni-directional)

Ensure that the operating direction is freely
- Release the parking brake (3)
- Select steering mode selector switch control mode D1.
- Activate the forklift with the ignition key (5) and flip-flop for the telescopic boom (11).
-Turn the steering wheel so the knob is in the drive direction.
- Press the accelerator pedal (7) to begin the drive.
- Adjust the speed using the accelerator
- For direction of drive can be changed by forward-reverse switch (12)
- The rotation of the forklift press the right or left of the control pedal (8) while driving.
- Make sure before driving in the opposite direction to the driving range backward freely.
- Breaking the forklift by gently releasing the accelerator pedal.
- If necessary breaking with the mechanical brake.
- When parking always activate the parking brake.
- Steering wheel knob shows the driving direction before drive.

Rotating the steering wheel in D1 with the accelerator pedal completely unaffected involves direct coupling between direction and steering wheel knops mode. When starting to drive the steering gear ratio goes to five revolutions per wheel revolution twist when driving.
This change in steering wheel to wheel ratio gives a more accurate and stable control when running with high speed in D1 mode.

Driving in slopes

Maxtruck 2T is intended to be used on even floors without any large slopes or inclinations. However if driving must be done on inclinations always see to that you drive forward down inclinations and if possible backwards up inclinations so you have maximum breaking force. This due to the fact that the Maxtruck 2T only have breaking possibilities on the front wheels.

Never drive side wards in inclinations due to the high difference in weight on front and rear part of the forklift. The higher weight on the rear together with breaking capacity only on front wheels makes it difficult to stop if going side wards in inclinations.

Steering wheel ratio to wheels

The steering wheel ratio is different at stand still and when driving.
If the fork lift is completely stopped and the accelerator pedal is totally released the steering wheel turns is 1:1 with the wheels.
This means that when the forklift is stopped the number of turns on steering wheel is locked to same turning on the wheels for easier manoeuvre in tight spaces. But as soon as the driver starts to drive in D1 steering mode the control system changes to 5:1 and the steering wheel must be turned five turns for one turn on the wheels. This increase the stability when driving straight on higher speed and gives you a more stable ride.
As soon as you stop and release the accelerator pedal on the Maxtruck 2T the numbers of turns goes back to one turn on the steering wheel corresponding to one turn on the wheels.

Steering of Maxtruck 2T

The steering effort required at the steering wheel is due to the electrical control very low, turn therefore knob with fine attention.

Running right-hand bend with D1 control mode
- Press the right pedal control (8) in proportion to the desired steering radius clockwise.

Running in the left curve D1 control mode
- Press the left control pedal (8) in proportion to the desired steering radius counter clockwise.

Driving on the right curve with D2 control mode
- Turn the knob corresponding to the desired steering radius clockwise.

Running in the left curve with D2 control mode
- Turn the knob corresponding to the desired steering radius counter clockwise.

Breaking the forklift

The truck's braking behaviour depends significantly on floor surface and the current load on the forks.
The driver must take into account in their driving behaviour. Slow the truck carefully to prevent the load from sliding.
When towing a trailer load of the control mode D2 look out for the extended braking distance.
- Take your foot off accelerator (6) and possibly use the brake pedal softly (9)

There are three different brake systems on the forklift.
- Service brake (operated by regenerating power back to the battery)
- Foot brake
- Parking

BRAKE SYSTEM

- Parkering brake always to be used when parking
- Service brake via regenererering
- Foot brake as extra and emergency brake
- Security system is not supervised by the safety system

The service brake
This brake works so that when you release the accelerator pedal it breaks the truck by generating power back to the battery in a controlled manner. If additional braking force is needed so exploited the mechanical brake.

Foot brake
This brake is direct mechanical foot brake acting directly on each driveline via disc brakes independent of the power system can slow the truck to a stop.
When breaking through the mechanical service brake, it is up to the driver to determine how quickly he can slow down without endangering the stability of the truck with respect to the load's size and location.

Parking Brake
This is a manually actuated parking brake directly through the driveline disc brakes when parking. The parking brake is equipped with signal contact that prevents activation of the drive motors until the parking brake has been released. Alarmed by the acoustic signal.
If the parking brake not is activated when the operator leaves the seat an alarm is triggered within 2 seconds to call the driver that the parking brake is not engaged.

Operation of the lift functions

The Maxtruck 2T is designed with a right placed lifting telescopic boom. The lift functions are controlled by the right-hand panel of the forklift.
Most important lift functions are controlled via a single joystick (10) on the right-hand panel.

For automatic control of the forklift as a conventional truck rack switch (13) to be placed in auto mode.

When the joystick (10) is drawn straight backward, the forks is moved upwards as on a conventional counterbalance truck. The forks are always controlled to keep the same angle throughout the lift cycle regardless of boom angle to the floor plan.
The extension of the boom are automatically controlled so that the forks performs a vertical movement up to the maximum height

Tilting the forks in auto mode is limited to $\pm$3.5 degrees. If the forks are more negative or positive than this angle, the forks just moved into this angular range and then limited to $\pm$3.5 degrees. Fork Tilt is done by joystick (10) right for up tilting and left down tilting.

In automatic mode, the forks can be moved horizontal in and out from the forklift with the flip-flop (11) for telescopic boom.

For manual more flexible movement of the fork position turn the selector switch (13) in the manual position.

In manual mode, the positions of the forks move freely throughout the travel range.
Tilting can be done throughout the maximum permissible angle without restrictions.

In manual mode, the responsibility is entirely on the driver to secure load retention is guaranteed in all lifting sequences.

Fork spread (optional equipment)

Fork spread is handled with a particular toggle switch (2) on the right keypad plus by a selection switch (4) that switches between spread and side shift of the forks.
Then the choice is fork spread, fork distance increased by toggle switch (2) is pushed to the right, and the distance can be reduced by the switch is pushed to the left.

Fork side shift (optional equipment)

This function is to collect and deliver cargo to stand against a wall for example.
The movement is controlled by toggle switch (2) when the selector switch (4) is set to side shift.
When pressing toggle switch (2) to the right moves the forks to the right and when you press the left moved the forks to the left.

Tool Changing Unlocking/locking

The truck is designed with the ability to change tools for different tasks so there is a function to lock the tool from the driver's seat. To unlock the tool pressed push button tool lock on the right control panel after which the joystick is moved over to the right as for down tilting. The tools lock opens and a display image with open padlock is displayed while the buzzer sounds for the duration of tool lock is unlocked.
Before changing tool on Maxtruck 2T the hydraulic system pressure in the tool must be neutralised before the hydraulic quick connectors can be opened. This is made when the Maxtruck is in operation and activated and the tool lock is open. Press the Tool unlock button on right panel for two seconds to even out the pressure in the tool hydraulic circuit.
Then open the two hydraulic quick connectors under the boom head on right side.

After unlocking the tool as above, place the tool on the floor. Tilt down the tool holder so it leaves the tool holder on the forks and reverse Maxtruck 2T from the tool.

It is easier to change the tool if the telescopic boom is extended about one meter.

Then connect the new tool to be used.

Before connecting the hydraulic quick connectors and with unlocked tool press the lock button on right control panel for two seconds to even out pressure in the system and then connect the quick connector before any other movement of the tool.

To lock the tool again pressed button on the right control panel after which the joystick is moved over to the left (and kept in that position for about 3 seconds) same as for up tilting.
Tools lock goes into locked mode and the displayed image of a padlock is removed and the

buzzer stops sounding. A yellow LED is also lighting on the inductive sensor for the interlock of the tool function. This can be seen from the driver seat.

NOTE Always hydraulic control in the "Manual" position to obtain full tilt angle which facilitates changing the tool.

Taking up, transporting lowering of load

Before a load is taken up, the driver must verify that it is securely packaged and it does not exceed the truck's allowable load capacity.

Check the load chart fitted on the window or in this manual.

Setting the fork

The fork should be adjusted so that both forks are at the same distance from the fork holder outer edge and the load centre is in the centre between the two forks.

- Set selector switch (4) on the right control panel in position spread to adjust spread.
- Press the toggle switch (2) right or left to adjust the distance between the forks
- Set selector switch (4) on the right control panel in position side shift to adjust position.
- Press the toggle switch (2) right or left to adjust the fork position.

Taking up the load

- Drive carefully close to the load to be addressed.
- Raise the forks to the correct height for the load.
- Drive the truck with the forks as far as possible under the load.
- At least two thirds of fork length must reach in under the load.
- Tilt the forks up gently and then lift the load.
- Switch drive direction switch (4) on left panel to reverse.
- Make sure the area behind is clear.
- Drive carefully and slowly backwards until the load is outside the storage area.

It is forbidden to reside under a suspended load!

- Lower the load as far as is strictly essential for the transport
  (about 150 to 200 mm above the floor).

Before transportation the load should be placed as close to the truck chassis as possible.

Transport of load

If the load is stacked so high that forward visibility is hindered, drive instead sideways or backwards with the forklift.

- Accelerate and decelerate the forklift with the accelerator (7) delicate and slow down if necessary gently with a service brake pedal (9).
- Adjust speed to drive path surface and the load to be transported.
- Keep an eye on the people around the forklift and along the forklift route.

In gradients you must always transport cargo in the direction up, never drive across or turning on a slope.

Lowering the load

Drive the forklift carefully close to the reduction site.
- Raise the forks to the correct height in relation to the unloading site.
- Drive carefully in the unloading site.
- Lower the load slowly until the forks are free.

To prevent damage to the load and reduction spot avoid putting down load too hard.

Secured parking of the truck

Left forklift must be parked secured.
This is also necessary when it is left only for a short while.
- Drive the forklift to a flat surface.
- Apply parking brake (3).
- Lower the forks fully to the position closest to the forklift.

Never set up the forklift and leave it with uplifted load.
- Set the ignition key (5) to "Off"
- Remove the key from the ignition (5).
- Turn off the main battery switch (4) (Does not need to be made at short stop)

Avoid using and never store the forklift for long time when the temperature is below -10 C because the hydraulic fluids can get very heavy liquid giving unnecessary loss of battery capacity.

Do not run the pumps cold at full speed. Heat the oil by tilting and / or lift slowly several times.

During stand still, arrange so the telescopic boom always are fully retracted to minimize the need for service on the sliding surfaces due dust on greasy surfaces.

Trouble shooting

References in this chapter help the user to locate and remedy simple disruption or consequences of incorrect operation. Search and rectify faults should be performed in the sequence in the table indicate.

Disorder	Possible cause	Measure	
The forklift will not start	Battery not connected - Main switch off - The driver is not on the chair - Left arm not lowered - To low-battery capacity - Flip-flop for telescope not activated	Check all connectors Turn on the main switch Put yourself in the driver's seat Fold down armrest Charge the battery After the ignition key to start moving the rocker on the left side of the joystick first up, then down.	
The load can´t be raised	The forklift is not ready for operation Low hydraulic oil level The load is too heavy Blown fuse To low battery capacity	Makes the forklift ready for operation, see Handbook Fill the hydraulic oil Reduce load Check and replace Charge the battery	
The forklift can´t be driven	The parking brake is not released To low battery capacity Failure in the control system	Release the parking brake Charge the battery Fault Check	
Fault indication on display	The forklift is not ready Sensor fault Overload Battery voltage too low	Makes the forklift ready for operation by reading the manual Fix faulty sensor Lifting less heavy load or moving the weight closer to the forklift Charge the battery	

E. MAINTENANCE OF FORKLIFT

Operational safety and environmental protection
The tests and maintenance procedures described in this chapter shall be performed at intervals specified in the service checklist.
No changes may be made to the vehicle - especially on safety equipment.
Only original spare parts with high quality must be used. Original Manufacturer parts ensure higher security and reliability. Old parts and replacement hydraulic oil must be disposed of in an environmentally friendly manner.

Upon completion of testing and servicing must be the measures described in section "Restart" (see Chapter F).

Safety precautions for maintenance

Staff Maintenance:
Service and maintenance of vehicle handling to be performed by the manufacturer's specialist skilled personnel or by personnel trained by the manufacturer. Manufacturer service organization has service technicians who are trained specifically for this purposes. We therefore recommend signing a service contract with the manufacturers
Service Centre.

Lifting and jacking:
For lifting the vehicle, the lifting gear only be attached for this purpose places. When jacking use of adequate equipment (wedges, wooden blocks) that eliminates the truck slides down or tipping over. Work under a raised load fork may only be performed if this is secured with strong enough bend or other secured prop.

Lifting points see Chapter C.

When working under a raised fork or jacked up forklift, they should be secured against lowering, tipping or rolling. When lifting the truck, additional regulations must be observed listed in chapter C "Transport and initial operation."
When working on the parking brake, the vehicle should be secured so that it does not roll away.
Cleaning operations:
The vehicle must not be cleaned with flammable liquids. Before you begin cleaning, all precautions are taken to eliminate sparking (e.g. by short circuit). For battery-powered vehicles, the battery has to be disconnected. Electric and electronic components should be cleaned with weak suction or compressed air.
If the vehicle is cleaned with water jet or high-pressure pump, all electrical and electronic components covered over carefully because moisture can cause malfunctions. The Maxtruck 2T must not be washed with steam.
After cleaning, take the measures described in "Restarting".

Actions on the electrical system:
Only trained electrical engineering staff should carry out work on the electrical system. Before beginning work all the measures necessary to eliminate electrical hazards. Battery must be unplugged to give visibly breaking. This is accomplished with Maxtruck 2T by lower battery pulled out 100 mm so that the battery connector goes apart. To pull out the battery, the battery cover is opened and the latch released with appropriate tool.

Welding:
To avoid damage to electrical and electronic components these must be electrically disconnected before welding on the vehicle.
Welding on the truck is not permitted without written consent.

Settings:
When repairing or replacing hydraulic, electric and electronic components should be taken into account forklift-related setting values. When replacing the sensor for hydraulic or control may require a calibration of the new sensor.
A trained service engineer on site or via remote Internet connection must perform these works.

Wheels:
Maxtruck 2T is equipped with special Polyurethane covered wheel hub.
These wheels must be replaced with original spare wheel from the manufacturer.
If the wheel surface must be replaced due to wear it must be carried out as directed by the manufacturer. Spare wheels can be ordered from the manufacturer.

Hydraulic hoses:
After six years of operation, the hydraulic hoses should be replaced.
If hydraulic components are replaced, also hoses that belong to this hydraulic system should be replaced.

Maintenance and Inspection

A careful and expert maintenance is one of the most important prerequisites for the high availability of the vehicle for cargo handling indoors.
A neglected maintenance can result in downtime for vehicle handling and simultaneously create a safety hazard for personnel and equipment.
The trucks use conditions have significant impact on maintenance component wear.
We recommend that a Max Truck AB customer advisors on site analyse the usage conditions based on which maintenance is adjusted to prevent wear damage.
The service checklist that follows, states the measures, which should be taken. Service intervals are defined as follows:
A = after 50 hours
B = after 500 hours of operation
C = after 1000 operating hours, but at least once per year
D = after 2000 operating hours, but at least once per year
The operator shall perform maintenance intervals A.
During the run-in period after about 100 hours of operation or after repair, operator verifies that the wheel bolts are secure and if necessary tighten them.

			Service intervals			
			Standard = ●	A	B	C	D
Chassis	1.1	Check all structural elements for damage.				●	
	1.2	Check screw connections.				●	
	1.3	Check screw connections. Check trailer drawbar if such is installed.				●	
	1.4	Check protective roof for damage and attachment.				●	

	1.5	Verify the seatbelt fastening and function.	●			
	1.6	Check that the ASE is in operation and not giving alarm.	●			
Traction	2.1	Check the traction motor function			●	
	2.2	Check the accelerator pedal function	●			
	2.3	Check for any unusual noise from gearboxes		●		
Steering	3.1	Check the steering function on all four wheels		●		
	3.2	Check the steering wheel function	●			
	3.3	Check the change between steering mode D1 and D2	●			
	3.4	Check for any unusual noise from the steering gear.		●		
	3.5	Grease the steering wheel gear box			●	
Wheels	4.1	Check the tires for wear and damage.	●			
	4.2	Check that all the wheel bolts are tight.		●		
	4.3	Check that no grease leakage is present from the wheels.	●			
Brake system	5.1	Check that braking regeneration works.	●			
	5.2	Check mechanical foot brake function.	●			
	5.3	Check brake mechanics and adjust and lubricate if necessary.		●		
	5.4	Check the parking brake and signal contact.	●			
Hydraulic system	6.1	Check for leaks.	●		●	
	6.2	Check the pressure in the tank behind the driver's seat.		●		
	6.3	Check the oil level in the tank.		●		
	6.4	Check cylinders for leaks and damage.			●	
	6.5	Replace the filter cartridges in the main pumps.			●	
	6.6	Change the hydraulic oil in the system.				●
	6.7	Check the function of the tool lock.	●			

			Service intervals			
			Standard = ●	A	B	C	D
Electric system	7.1	Check the display means for functions.		●			
	7.2	Check the controls with regard to function.		●			
	7.3	Check wiring for damage.				●	
	7.4	Check lights, warning lights and alarm horns function.			●		
	7.5	Check and possibly extinguishing fault memories.			●		
	7.6	Make sure the electrical system is clean and dry.				●	
Motors	8.1	Check the drive motors fixing.				●	
	8.2	Check ventilation paths for the engines.				●	
	8.3	Perhaps clean the engine cooling fins.				●	
Battery	9.1	Check the battery cables for damage possibly change.		●			
	9.2	Check acid density, acid level and cell voltage.		●			
	9.3	Check the battery terminals.			●		
	9.4	Check operation of water level alarms.		●			
	9.5	Clean all battery connections				●	
Telescopic boom	10.1	Check and adjust the slide blocks.				●	
	10.2	Check and lubricate the slide rails.			●		
	10.3	Check the telescope cylinder function.		●			
	10.4	Lubricate the lower telescopic bearing			●		
	10.5	Lubricate the boom sliding surfaces and friction pads (Omega 22)			●		
Boom head with tool holder	11.1	Check that the forks can be tilted fully up and down.		●			
	11.2	Check the fork spread and fork side shift.			●		
	11.3	Check and bleeding the hydraulic system.				●	
	11.4	Make sure the tool lock is functioning properly.		●			
General measurements and functions	12.1	Check electrical system with respect to earth fault VDE2511					●
	12.2	Check the speed and braking distance.				●	
	12.3	Check lifting and lowering speed				●	
Test	13.1	Test drive with rated load.				●	
Hand over	13.2	Hand over the truck to the responsible person.				●	

Lubrication Schedule

Maxtruck 2T is built to be easy to maintain, why all transmissions is permanently lubricated and maintenance free.

The lifting mechanisms are however a number of bushings and plain bearings to be lubricated regularly.

The table below indicates the lubrication point the location and lubrication intervals that apply to telescopic boom, boom head, fork head and swing axle.

Function	Greasing point	Description	Greasing intervals hours	Grease type
Telescopic boom	Boom no 1 (first)	8 pieces inside + 8 pcs external grease fittings	200	Omega 22
	Boom no 2	8 x external + 8 pcs external grease fittings	200	Omega 22
	Sliding bars on boom sections	Exterior Stainless steel slide rails	50	Omega 22 Spray
Lifting cylinder	Upper eye	One grease nipple	200	White Guard PAO
	Lower fixing point	Two grease nipples	200	White Guard PAO
Boom head	Tilt cylinder lower point	One grease nipple	200	White Guard PAO
	Tilt cylinder upper point	One grease nipple	200	White Guard PAO
	Tilt shaft	Two grease nipples	200	White Guard PAO
Pendulum shaft	Steering shaft left	One grease nipple	500	White Guard PAO
	Steering shaft right	One grease nipple	500	White Guard PAO
Steering gearbox front wheels	Steering gearbox	Greasing nipple from underside wheelhouse	1000	White Guard PAO
Steering gearbox rear wheels	Steering gearbox	Greasing nipple under rear battery in pendulum box	1000	White Guard PAO

Lubricate regularly and make sure not to excess grease is forced out at lubrication.

Excess lubricant should be wiped up with a suitable cloth.

Description of service and maintenance works

Preparing the truck for service and maintenance works

To avoid accidents during maintenance and repair work, all necessary precautions are taken.
Create the following conditions:

- Disconnect the battery

Check wheel attachment

- Set up the forklift secured
- Tighten the wheel nuts (1) crosswise with a torque wrench.

Tightening torque 70 Nm
Maxtruck 2T is having an 6 holes rim

Control the hydraulic oil

A telescopic boom must be retracted and fully lowered.
- Prepare the truck for service and maintenance work by disconnecting the battery
- Check the hydraulic oil with the dip stick on the tank behind the driver's seat

Filling the hydraulic oil

- Top up the hydraulic oil to the prescribed level in the following way.

-Open the RED plug with the dip stick and fill to right level shown by the dip stick.
Tank capacity is 9 litres.

Drained hydraulic oil must be handled with care and in accordance with regulations for environmental protection.

Hydraulic oil to be used in Maxtruck 2T

Omricon 412 ISO VG 46 (ISO 6743-4 cat HR and HV)

Oil volume when changing is about 10-12 litres

Oil volume in the whole system is about 20 litres.

Change hydraulic oil filter

Hydraulic oil filter is mounted with one common filter for both circuits.
To change the filter removed the hatch cover on right side of the forklift with four screws.
- Open the drain plug on the hose from return connection of respective hydraulic pump under the telescope lift cylinder and drain the oil into a suitable container. Oil capacity is about 10-12 litres that flow out.
- Unscrew the oil filter. Add some type of cloth under it to take the waste.
- Fill the hydraulic oil in the new filter.
Lubricate the O-ring lightly before reassemble.
- Fill in as much hydraulic oil in the tank dropped out including filter volumes.
- Vent the system by driving the boom up and down and in and out with the tank open.
- Check the hydraulic level in hydraulic tank with dip stick when boom is in lower position and fully retracted.
Drained hydraulic oil must be handled with care and in accordance with regulations for environmental protection.

Maintenance of seatbelt

It is the operator's task to daily before using Maxtruck 2T, check the seat belt for secured operation. Only regular inspections can reveal functional errors in time.
- Pull the belt out completely and check for wear and damage
- Check locking device function and that the withdrawal of the belt in the retractor works.

Checking the seatbelt blocking automatics:

- Set up the truck horizontally
- Pull the belt with a jerk
The automatic system must block belt extraction.

The forklift may not be used with a defective seatbelt.
Immediately replace a defective seatbelt.

Control of electricity fuses

- Prepare the Maxtruck 2T for service and maintenance work
- Open the plastic panel in front of the electrical panel to the right of the operator
- Check the fuses according to the table for the correct value and condition.
To avoid damage to the electrical system should only fuses with the specified values should be initiated. Only use fuses rated for 50 Volt.

Pos.	Named	Function and place or description	A	Position
1	F1	Main fuse 48 V under floor	500	Motor controller plate
2	F2	48 V DC to boom head	100	Motor controller plate
3	F3	48 V DC for control system	30	Motor controller plate
4	3F1-6F1	48 V DC for steering	25	Motor controller plate
5	3F2-6F2	24 V DC for steering	2	Motor controller plate
6	3F3-6F3	48 V DC for motor controllers	7,5	Motor controller plate
7	F101	24 V DC to boom head	1	CB1 connection board
8	F102	24 V DC for control system N2	2	CB1 connection board
9	F103	24 V DC for computer N1	7,5	CB1 connection board
10	F104	24 V DC to boom head	7,5	CB1 connection board
11	F105	24 V DC to service platform	7,5	CB1 connection board
12	F106	24 V DC to motor controller plate	7,5	CB1 connection board
13	F107	24 V DC to power outlet X3	10	CB1 connection board
14	F108	48 V DC Outlet X10:1 – X10:4	10	CB1 connection board
15	F109	48 V DC Parking break solenoid	20	CB1 connection board

Restart after cleaning and maintenance work

Before the forklift is started again after cleaning or maintenance work the measures must be taken as described below:

- Check horn function.
- Check the main switch's function.
- Check the brake function.
- The vehicle must be lubricated according to the lubrication chart.

Decommissioning of the Maxtruck 2T

If the forklift for internal reasons is taken out of service for more than 2 months, it should be installed in a frost-free and dry location. The measures to be taken before, during and after the outage described below.

If the forklift is out of service for more than 6 months, additional measures should be agreed with the manufacturer's service centre.

Actions before arrest

- Clean the forklift carefully.
- Check the brakes.
- Check the hydraulic oil level and top up if necessary.
- Apply a thin oil or grease layer on all non-coated mechanical components.
- Lubricate the forklift according to the lubrication schedule.
- Recharge the battery.
- Disconnect the battery and clean and lubricate them with terminal grease.

In addition, follow all instructions of the battery manufacturer left.

- Spray all exposed electrical contacts with a suitable contact spray.

Actions under rest

Monthly: Recharge the battery. The Battery should be regularly recharged when its self-discharge lowers the capacity to a level when start sulphating which in turn causes battery to be destroyed.

Restart after rest

- Clean forklift carefully
- Clean the battery terminals and lubricate with grease and connect the battery.
- Recharge the battery.
- Check the hydraulic oil does not contain condensed, change oil if necessary.
- Take the forklift in operation according to instructions.

If switching disturbances occur in the electrical system of visible contacts contact spray applied and any oxide layer on the actuators contacts removed by repeated actuation.

Perform several test brakes applied immediately after commissioning.

At the wrong contact the provider or the provider's authorized service centre.

Alarm codes presented on display

These alarm codes will be presented on the display if an error occurs in Maxtruck 2T.

Write down the code so you can inform the service engineer if you need some help.

Code	Description
A1	Chair switch
A2	Joystick Tilt
A3	Joystick Hoist
A4	Joystick Telescope
A5	Accelerator pedal
A6	Angel sensor lifting boom
A7	Pressure sensor for weight sensing
A8	Pressure sensor Hoist
A10	Pressure sensor Telescope
A12	Right traction motor controller
A13	Left traction motor controller
A14	Hoist motor controller
A15	Telescope motor controller
A16	Boom Head motor controller
A17	Short circuit sensor voltage 5V
A18	Angel sensor boom head
A19	Pressure sensor 1 boom head
A20	Pressure sensor 2 boom head
A22	Com. Fault CR0032
A23	Com. Fault CR7021 (boom head)

A27	**Com. Fault, security message SRDO1 from CR7021 (boom head)**
A28	**Com. Fault, security message SRDO2 from CR7021 (boom head)**
A29	**Stop due to max inclination with work platform mounted**
A30	**Stop due to maximum weight limitation with work platform**
B1	**Tool interlock sensor**
B2	**Inclination sensor com. fault**
B3	**Switch forward reverse faulty**
B4	**Switch steering mode D1-D2 faulty**
B5	**Switch Man-Auto faulty**
B7	**Joystick Tilt, outside dead band at start up**
B8	**Joystick Hoist, outside dead band at start up**
B9	**Joystick Telescope, outside dead band at start up**
B10	**Wheel position encoder left front, CAN bus-fault**
B11	**Wheel position encoder right front, CAN bus-fault**
B12	**Wheel position encoder left rear, CAN bus-fault**
B13	**Superposition pedal left**
B14	**Superposition pedal right**
B15	**Length sensor in telescope**
B16	**Wheel position encoder right rear, CAN bus-fault**
B17	**Steering motor controller right front**
B18	**Steering motor controller left front**
B19	**Steering motor controller right rear**
B20	**Steering motor controller left rear**
B21	**Forced operation**

For fault codes from motors you can also press the right lower corner pushbutton on the display to receive the fault code number reported from the motor controller.

Dimensions on Maxtruck 2T

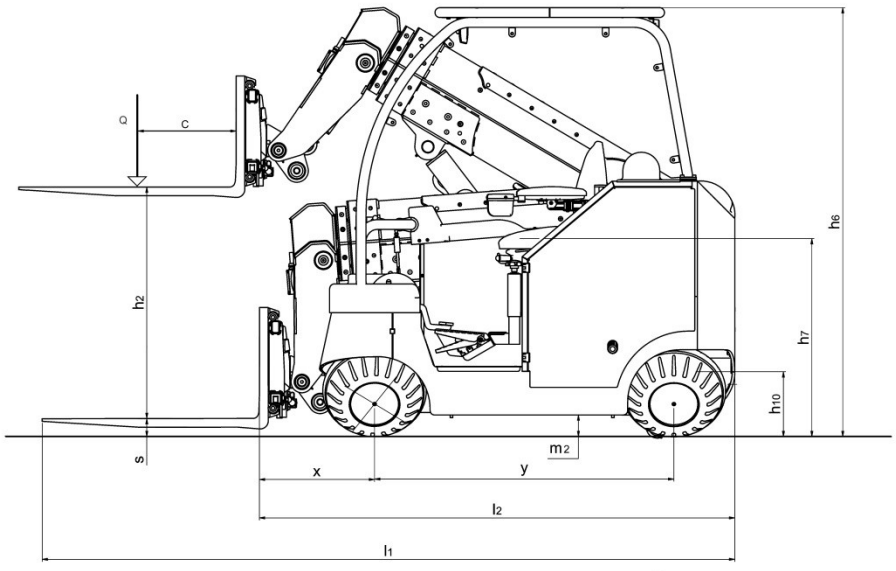
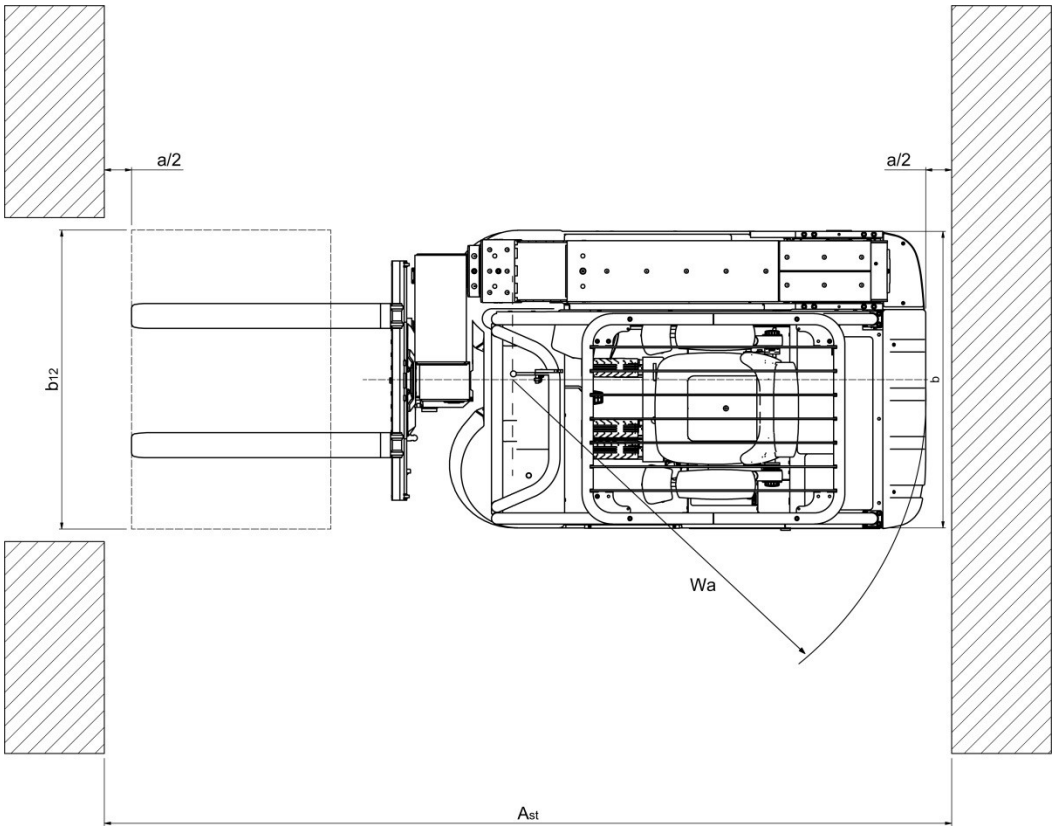


Fig 1.



Technical data

Technical data in line with VDI 2198

Identification	1.1	Manufacturer			Max Truck AB
	1.2	Manufacturer designation			Maxtruck 2T
	1.3	Drive			Electric
	1.4	Operator type			Seat
	1.5	Load capacity/rated load	Q(t)		2.0
	1.6	Load centre distance	C(mm)		500
	1.8	Load distance centre of drive axle to fork	X(mm)		534
	1.9	Wheelbase	Y(mm)		1378
Weights	2.1	Service weight incl. Battery	kg		3600
	2.2	Axle loading, laden front/rear	kg		4850/750
	2.3	Axle loading, unladen front/rear	kg		1350/2250
Wheels, Chassis	3.1	Tyres			Maxwheel
	3.2	Tyre size, front			450
	3.3	Tyre size, rear			450
	3.5	Number of wheels front/rear(x=drive)			2X/2
	3.6	Tread, front	b10(mm)		770 or 1000
	3.7	Tread, rear	b11(mm)		750 or 980
Basic Dimensions	4.1	Tilt of forks in auto	α/β(°)		+7 / -7
	4.3	Free lift	h2(mm)		1110
	4.4	Lift height	h3(mm)		4200
	4.5	Boom height at max height forks	h4(mm)		4400
	4.7	Height of overhead guard (Cabin)	h6(mm)		1975
	4.8	Seat height	h7(mm)		910
	4.12	Coupling height	h10(mm)		530
	4.19	Overall length	l1(mm)		3290
	4.20	Length to face of forks	l2(mm)		2290
	4.21	Overall width	b1(mm)		1190
	4.22	Fork dimensions	s/e/l(mm)		40/100/1000
	4.23	Fork carriage class			2
	4.32	Ground clearance under chassis	m2(mm)		90
	4.33	Aisle width for pallets 1000x1200 crossway	Ast(mm)		3400
	4.34	Aisle width for pallets 800x1200 lengthway	Ast(mm)		3500
	4.35	Turning radius D1/D2 drive mode	Wa(mm)		1656
Performance data	5.1	Travel speed laden/unladen	km/h		16/16
	5.2	Lift speed, laden/unladen	m/s		0.40/0.60
	5.3	Lowering speed, laden/unladen	m/s		0.40/0.60
	5.7	Gradeability, laden/unladen	%		5/7
	5.9	Acceleration time, laden/unladen	S		4
	5.10	Service break			electric/mech.
Motors	6.1	Drive motor rating S_2 60 min.	kW		2 x 6
	6.2	Lift motor rating S_2 15 % rating	kW		2 x 6
	6.3	Battery acc. to DIN 43531/35/36 A,B,C, no			DIN 43531A
	6.4	Battery voltage, nominal capacity	V/Ah		48/385
	6.5	Battery weight	kg		2 x 300
		Max battery capacity option	Ah		440
	6.6	Energy consumption aa.to VDI cycle	kWh		
Others	8.1	Type of drive control			AC synchronous
	8.2	Operating pressure for attachments	Bar		200
	8.3	Oil volume for attachments	l/min		10-40
	8.4	Average noise level at operators ear	dB(A)		65
	8.5	Towing coupling type			Option

Service and maintenance records

Date	Measure	Sign	Others

Service and maintenance records

Date	Measure	Sign	Others