



medemagroup



# Service Manual Mini Crosser X-Joy

Serial number: \_\_\_\_-\_\_\_\_-\_\_\_\_-\_\_\_\_

Delivery date: \_\_\_\_\_ Year 20 \_\_\_\_\_

**This vehicle was supplied by:**

**Date:**        /

**Dealer:**

For this product You can expect to find the following documentation:

- User manual
- Service manual
- Spare parts list
- Presell information.

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## Introduction

This manual contains servicing instructions for the Mini Crosser X-Joy Model mobility scooter.

The Service Manual is a supplement to our Spare Parts Catalogue and User Manual.

You are now the owner of an electric mobility wheelchair developed for use indoors as well as outdoors. It is what is called a Class C vehicle according to the European standard EN 12184.

The Mini Crosser X-Joy is designed for safe travel for at least 10 years, up to a max. of 5,000 hours, provided it is serviced and safety-checked every third year, corresponding to 1500 hours of operation. The service must be carried out either by Medema A/S or an authorised workshop.



**IMPORTANT!** For safety reasons it is of the utmost importance that the servicing and safety check intervals are complied with, as this minimises the risk of brake failure and short-circuits in the wiring, which could generate heat and cause a fire.

If help is required with troubleshooting, Medema A/S is always happy to provide telephone assistance. If the problem seems to be an electrical fault that prevents the scooter from working, please tell us the error code. This can be found on the battery indicator on the control panel. Read more about this in the section on [Troubleshooting](#).

Please also have the scooter's serial number handy when contacting Medema A/S.

If you have any questions that are not answered directly by this manual, you are always welcome to contact us at:

Medema A/S  
Tel: +45 7010 1755  
Email: [info@medema.com](mailto:info@medema.com)  
Internet: [www.medema.com](http://www.medema.com)

NB: Errors and omissions excepted. Specifications subject to change.

Medema Production A/S also reserves the right to update the service manual in line with any modifications or improvements to the product.

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## Intended occupant

The intended occupant of the wheelchair is a person with limited ability of walking themselves.

The wheelchair is equipped with a joystick control which makes it usable for an occupant who only has low functionality in the fingers. It can be driven with only one hand either left or right.

The occupant must be able to see in order to register traffic signals and other road users when driving in traffic. The occupant can be deaf and/or speechless.

The occupant must have a cognitive ability to understand the operation of the joystick and its buttons and icons.

The maximum occupant weight is 150 kg.

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## Help for the visually impaired

If you have difficulty reading small print in the user manual, we recommend that you visit our website, where you can read this manual in PDF format. You can enlarge the PDF manual on your PC monitor to suit your needs and preferences.

If you find it difficult to understand the manual and have general questions about the product, please feel free to contact us. You can find our contact info on page two in this user manual.

You can find manuals for all our products on our web page [www.medema.dk](http://www.medema.dk). Or contact Medema A/S, and we can send the manuals in a mail for you. Find the contact information on page two in this manual.

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## FSN (Field Safety Notice)

All information concerning safety can be found at [www.medema.com](http://www.medema.com), which is always updated with the latest safety information. In the event of important safety-related changes, we will notify our customers directly (FSN).

## Symbols



Used in the manual to indicate sections describing situations where extra care is required owing to the risk of personal injury.



Used to indicate sections on electromagnetic compatibility (EMC).

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## Warning!



For safety reasons the vehicle must not be lent to persons who are not completely familiar with it. The vehicle is designed for one person only.



The Mini Crosser X-Joy has been designed for users weighing max. 150 kg.

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## Joystick



The joystick control box must not be exposed to extremes of temperature or kept in a damp environment for extended periods.



The joystick control box must not be subjected to heavy knocks.



Do not switch off the control box while driving, except in an emergency, as this may damage the electronics.



For cleaning, use a damp cloth with slightly soapy water. Do NOT allow any water or moisture to enter the control box.

---

## Contagion!

A standard Mini Crosser is equipped with tyres that does not contage, but if another type of tyres are used, it can sometimes rub off on floor coverings, particularly linoleum. Medema A/S assumes no responsibility in case of contagion.

To prevent this, we recommend that you protect delicate floors with some sort of driving surface.

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## Storage

The Mini Crosser is a CLASS C product, designed for use in all types of weather. The scooter should, however, be stored and charged under cover at temperatures in excess of 0°C. The charger must also be kept dry.

If the scooter is not going to be used for a long time, it is advisable to protect the tyres by chocking the scooter up. It is also a good idea to cover the scooter to protect it from dirt, dust and sunlight.

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## Cleaning

The Mini Crosser should be cleaned with a damp cloth. A little washing-up liquid can be used if necessary. The plastic covers can be polished with an ordinary glass cleaner or car wax.

### **Note!**



Using a high-pressure cleaner or hose may damage the Mini Crosser's electronics.

## Safe servicing

- To avoid injuries to both the service engineer and the subsequent user of the scooter, it is important to get to know the product before servicing it.
- Be particularly aware of the following:
  - The Mini Crosser **MUST** be turned off at the main switch. If electrical components are being serviced, the positive terminal on the battery **MUST** also be disconnected.
  - If the voltage needs to be measured in the course of troubleshooting, take great care not to short-circuit anything.
  - Take great care not to short-circuit the battery terminals.
  - Be careful not to lift heavy parts such as the seat, battery and motor gear incorrectly or drop them.
  - Make sure to raise one rear wheel off the ground so that the scooter cannot drive off accidentally.
  - Use professionally maintained tools.
  - Where lock nuts are used, **NEW** ones **MUST** be fitted when the scooter is reassembled.
  - Take care to fit new cable strips in the same way as the old ones. Make sure that no cables can be trapped by moving parts or stick out in such a way as to catch on things.
- End every service by making sure that the product is roadworthy:
  - Check that all the connectors are plugged in correctly.
  - Check that all the mechanical parts are properly secured.
- Turn the scooter on and check
  - That the magnetic brake clicks when the accelerator is activated.
  - When the accelerator is released, it must not be possible to push the scooter.

## Tool list

The following tools are needed to service the scooter:

- Circlip pliers
- Allen keys
- Box spanners, 7-17 mm
- Open-ended spanners, 7-17 mm
- Phillips and torx screwdrivers, 10/15/20/25 slot
- Needle-nose pliers
- Side-cutting pliers
- Plastic hammer
- Set of punches
- Retractable knife
- Steel brush
- Water pump pliers
- Wire strippers
- Crimping tool
- Pliers for Molex 5556/5558 crimps
- Riveting pliers
- Small cable ties
- Multimeter
- Battery tester
- Tyre pressure gauge
- Tyre pump with Schrader valve
- Acid-free oil and grease
- Loctite EI-zink = 2400, A2 = 2700, Bearings = 6300
- Cable ties
- PC
- PC Programming package



## Safety check Joystick

### Daily safety check:

The electronic system has an integrated safety check which runs up to 100 times per minute. To supplement this check, you should carry out the following regular checks.

- Switch off the electronic system
- Check if the joystick is bent
- Check if the joystick is damaged in any other way
- Check that it returns to the central position when you release it

If the check reveals any problems, contact a competent service engineer before using the wheelchair again.

### Weekly safety check:

Parking brake: This test must be carried out on a flat surface with at least one metre of free space around the wheelchair.

- Start the wheelchair and slowly move the joystick forward. There is a clicking sound. (The wheelchair may start to move in this setting).
- Immediately release the joystick and listen for the clicking sound, which should occur within one second.

Repeat in all directions.

- Check that the rubber bellows around the joystick is intact. This is important, as the bellows prevent moisture getting into the electronic system.
- Check that the control box is properly secured.

If the check reveals any problems, contact a competent service engineer before using the wheelchair again.

### Monthly check

Check the tyre pressure at least once a month. See technical data for pressure.

## General care and maintenance

A Mini Crosser X-Joy does not require much maintenance. It should be kept in a generally good condition, however. The following should be checked regularly:

- Tyre pressure (if pneumatic tyres are fitted)
- Tyre wear
- Keep the control panel, the charging socket and the electronics box under the seat dry.
- Battery charging



Never wash the Mini Crosser with a high-pressure cleaner or direct water jet! This could damage the Mini Crosser's electronics.

To keep the Mini Crosser in good condition safety-wise, we recommend the following regular checks:

### Daily: (user)

Test the indicators and driving lights before using the Mini Crosser in the dark or poor visibility.

### Every three months:

Test the brakes and motor disengagement  
With the disengagement lever up, it must not be possible to push the Mini Crosser.

Test the brake disengagement function  
When the brake disengagement lever is down, the battery indicator should flash to show an error if the Mini Crosser is turned on. In this case the Mini Crosser must not be able to move when the accelerator is activated.

Test the hand brake.  
Apply the hand brake for a couple of seconds at low speed. This will ensure that the lever arm and brake shoes do not seize up.

Lubricate the lever arm on the brake hub with acid-free oil - left-hand rear wheel.

## Service intervals

The Mini Crosser X-Joy is designed to require a minimum of maintenance.

However, you are recommended to take it to your dealer for inspection every third year.



**IMPORTANT!** For safety reasons it is of the utmost importance that the servicing and safety check intervals are complied with, as this minimises the risk of brake failure and short-circuits in the wiring, which could generate heat and cause a fire.

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## Insurance

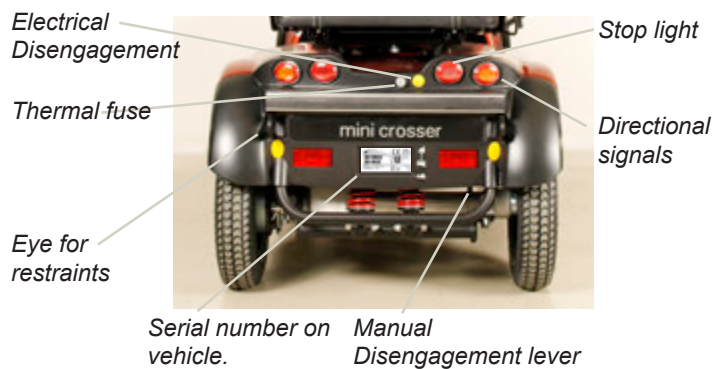
In the eyes of the law a Mini Crosser X-Joy with a maximum speed of 13 km/h is a cycle, so separate insurance is not required.

Most contents/home insurance policies include third-party liability insurance for cyclists and so also cover Mini Crosser X-Joy users.

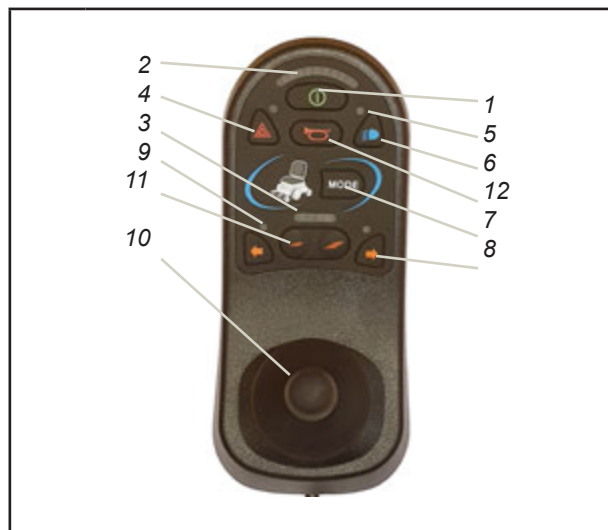
We recommend that you talk to your insurance company about this when the vehicle is delivered. If necessary, comprehensive insurance will have to be taken out separately.

## Designations

The following designations refers to the explanation later in the instruction book.

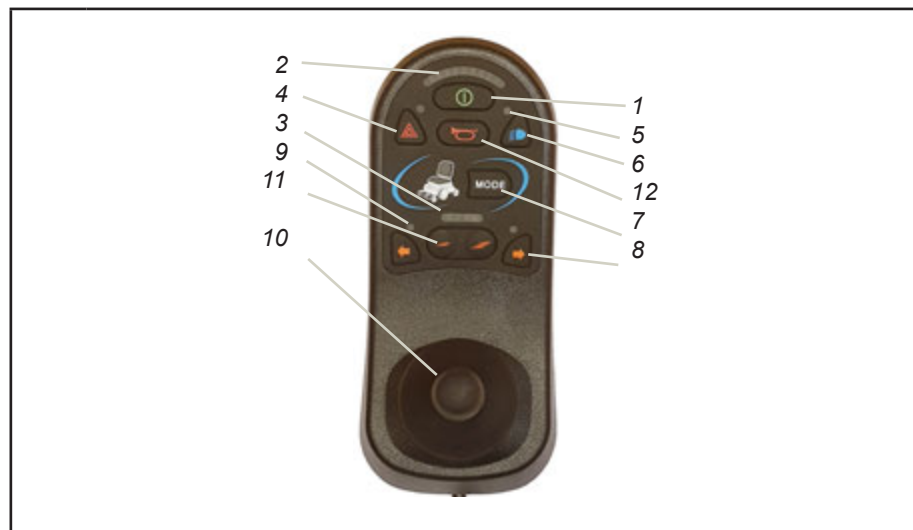


## Designations Joystick



P&G R-net	
1	Start/stop-button
2	Battery indicator
3	Driving profile
4	Warning blinkers
5	Mode LED
6	Light
7	Mode button (electric functions)
8	Blinkers left/right
9	Mode LED
10	Joystick
11	Speed increase / decrease
12	Horn

## Designations functions



P&G R-net	
1	Press the button 1 to start the Mini Crosser. Wait until the battery indicator is stabil (3-5 sec).
2	Battery indicator Show a more precis indication after approximately one minute of driving. When all the LED is lit, the batteries are fully loaded. When only a couple of yellow lights are visual - charge as soon as possible. If only the red LED are showing, or if they are blinking - charge right away.
3	Driving profile show what the maximum speed are set to. There are five LED. One LED refer to lowest speed and five LED refer to maximum speed.
4	Warning blinkers - all blinkers are activated. Even if the vehicle is turned of, it will not stop blinking. To turn of the warning blinkers, the vehicle must be turned on, and press the button for warning blinkers button (4) again.
5	Mode LED - lights up when the associated function is active
6	Light - turn the front- and backlight on. Turn it off again by pressing the light button (6) again.
7	Mode button - (electric functions). Scrolls through the available electric functions. Use joystick up/down to adjust.
8	Blinkers (right and left) start blinkers on the side the arrow shows.
9	Mode LED - lights up when the associated function is active
10	Joystick - controls the direction and speed of the vehicle.
11	Speed increase/decrease - increase or decrease the maximum speed.
12	Horn - powerful electric horn.

## Joystick lock / unlock

X-Joy can be locked, so unauthorized persons cant use it.

- Turn on the Joystick
- Push and hold the on/off button. After 1 sec, you will hear a short audio signal.
- Let go of the on/off button. Move the joystick forward until you hear a short audio signal.
- Move the joystick backward until you hear a long audio signal.
- X-Joy is locked.

It is now impossible to drive the X-Joy.

Unlock:

- Turn on the Joystick
- Move the joystick forward until you hear a short audio signal.
- Move the joystick backward until you hear a short audio signal.
- Let go of the joystick and you will hear a long audio signal.
- X-Joy is now unlocked.

## Preparations / Adjustments prior to use

### Adjusting the height of the seat

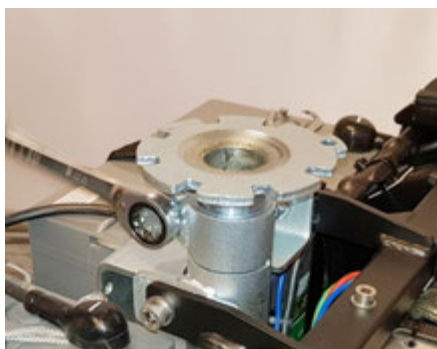
Lift both armrests up, and fold the seatback. Release the handle so the seat can turn. Turn a little and lift the seat off.

Make sure you keep your back straight when lifting the seat, which is very heavy.



*Lift the seat off the seat tube.*

### High adjustment seat post standard



*Loosen the counter nut.  
Use spanner, 17 mm.*



*Adjust the seat post to the desired position. The seat post is marked with a ring at each centimetre.*

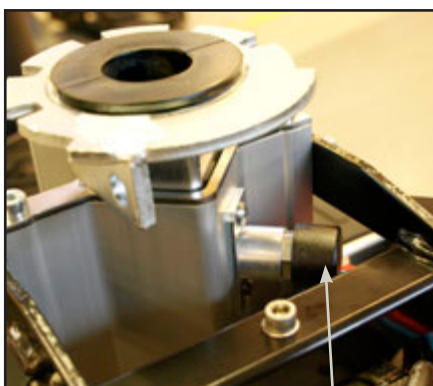


*Be aware that the black line is holding its position after movement, so the seat is straight in front of the steering.*

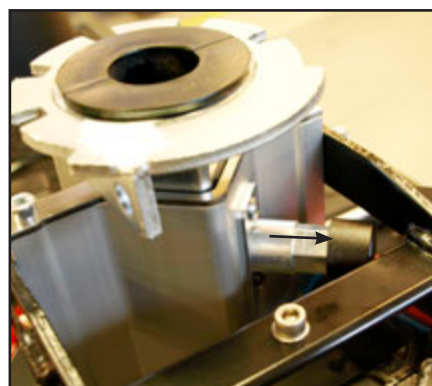


*Tighten the screw, here after the counter nut.  
Mount the seat. Adjust the lining if necessary.*

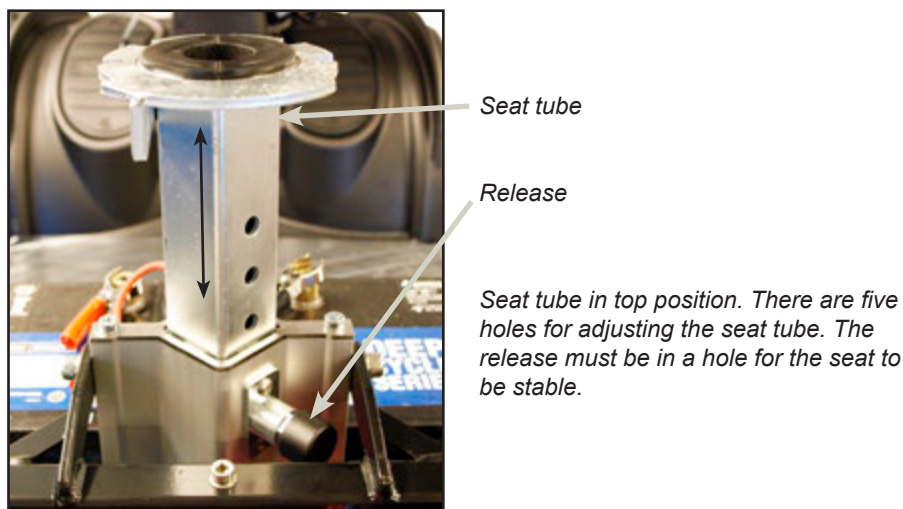
### High adjustment seat post with position bolt (option)





*The release button pressed in. Press the button out to release the seat tube.*

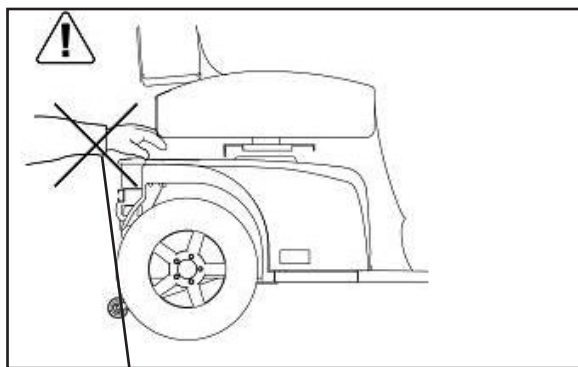


*Release button pressed out. Now the seat tube can be moved up/down to the height you wish. Press the release button again and make sure it is fitted in one of the 5 holes in the seat tube.*



 **IMPORTANT!** The Mini Crosser is most stable when the seat is in its lowest position. Always drive carefully when the seat is raised. Never use the seat adjustment when driving on an uneven surface or in hilly terrain.

 Take extra care when lowering the seat on a Mini Crosser using electric seat adjustment. Make sure that nothing is trapped in the space between the seat and the chassis.



*Avoid trapping anything when lowering the seat.*

## Seat rotation

Pull the release lever back. The seat can be rotated 90° to either side. When the lever is released, it engages with the seat and holds it in place at 45° intervals.

Other seats that can be supplied for the Mini Crosser work on similar principles. The release lever is normally mounted on the right, but can be put on the left if so wished.

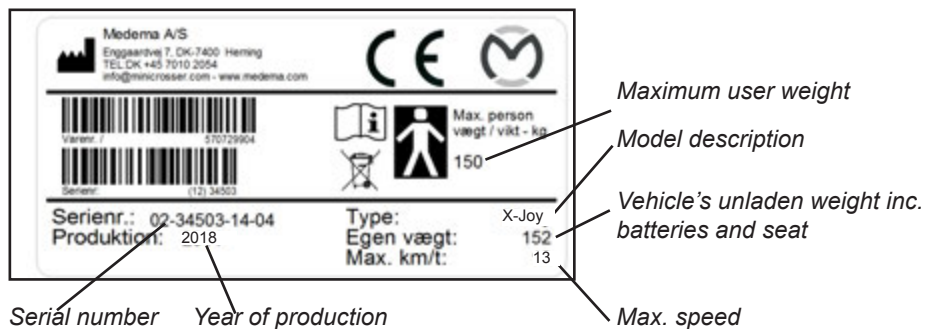


Release lever for seat rotation. Release lever for seat forward/back.

## Serial number

All vehicles have a serial number plate showing the year of production, and serial number. The same serial number can also be found on page two of the User Manual.

Please quote this number when making inquiries about servicing, spare parts, etc.



Position of serial number plate on vehicle.

## Driving the Mini Crosser X-Joy

### Getting on and off

It is important to learn a safe technique for getting on and off the Mini Crosser.

In general the following method should be followed:

- Make sure that the Mini Crosser X-Joy is turned off.
- Make sure that the brake is on. (Lever for disengaging motor in top position.)
- If necessary, turn the seat through 45° or 90° and make sure that it is locked in position (clicked into place).
- If necessary, raise the armrest.

For some users the assistance of an attendant can be recommended. The attendant should:

- Take care not to injure him/herself when lifting/lowering/supporting the user.
- Make sure that the Mini Crosser is stable and unable to move. Turn off the Mini Crosser and check that the brake is on and the seat has been rotated until it clicks into place at either 45° or 90°.
- Make sure that the seat the user is being moved to is stable.



*Turn the Mini Crosser off, rotate the seat and raise the armrest.*

## General safety advice

Make sure that the backrest is upright and the seat is as low as possible.

Positioning belts are recommended if the user is unable to maintain a good driving posture independently.

Adjust your driving to road conditions. Take light, traffic and weather into account. Be particularly careful when driving in the dark or in bad weather, such as rain or snow. Avoid driving on gradients with poor surfaces, such as: snow, ice, new-mown grass, wet grass and wet leaves.



Never drive when under the influence. This applies not only to alcohol, but also to drugs and medicines.

Reduce speed immediately if you feel you are losing control.

Always use the indicators when changing direction.

Check that lights and indicators are working before driving off. Use your lights when driving after lighting-up time.



**ALWAYS** switch the Mini Crosser off when it is not in use. I/O button.

## Driving

Even though the Mini Crosser is very stable, it can tip over. Avoid sudden changes of speed and direction when travelling at high speed, on poor surfaces and, not least, on slopes.

For short distances the Mini Crosser can drive up steeper inclines than it has been tested as dynamically stable for. The same applies to driving down such inclines. In such cases there is an increased risk of the Mini Crosser tilting and even tipping over. So be extra careful in following the driving tips given below.

Anti-tilt wheels are recommended for driving in very hilly terrain.

New users are urged to practise the following in an area where there is no other traffic:

- Set the Mini Crosser to low speed. Drive forwards and backwards. Gradually turn the speed selector up and feel the change in the speed of the Mini Crosser.
- Practise starting and braking. Get used to the Mini Crosser's response time.
- Practise driving in a narrow space, similar to inside a shop or through a door.
- Practise turning, and get a sense of how much space is required. Always drive slowly when turning. Practise reversing too.
- Practise cornering and driving over obstacles and on slopes. Always drive straight up/down kerbs and ramps. Never at an angle. See the illustrations on the following pages.
- Try braking at different speeds and notice the stopping distances.
- If possible, try driving on different surfaces (road, grass and gravel).
- Practise assessing how far you can drive on a single battery charge. Note how quickly the battery indicator changes from green to amber to red.

**Note!**



The driving distance of the Mini Crosser will be reduced when driving in hilly areas, into a head wind, in cold weather and with low tyre pressure.



The stopping distance is significantly increased when driving down inclines and hills.

## **Traffic regulations**

The traffic legislation for Mini Crossers varies from country to country. Before starting to use the vehicle outdoors, it is the user's responsibility to familiarise him/herself with the relevant legislation.

## Electromagnetic compatibility



If the Mini Crosser starts making involuntary movements or if the brakes are released, turn the Mini Crosser off as soon as it is safe to do so. In certain circumstances a Mini Crosser can set off shop alarms.

The Mini Crosser satisfies the requirements for the use of Mini Crossers in an environment with electromagnetic noise. There may, however, be rare situations in which electromagnetic noise can affect the Mini Crosser. Sources of such noise include radio and television stations and amateur radio transmitters.

## When driving in traffic

Be particularly aware of the following when driving in traffic:

- The Mini Crosser is a low vehicle and not always easy for other road users to see. Make quite sure that other road users have seen you before driving onto the highway.
- Keep an eye on traffic behind you. Keep well over to the side of the road when driving on busy roads.
- Turning right and left at crossroads. Be aware of cyclists and pedestrians. Follow the rules of the road for cyclists.
- How quickly things are happening. How long do the lights stay green? How quickly are cars approaching? etc.

## Specific driving situations

### Up kerbs

- Stop at right angles to the kerbstone about 5-10 cm away from it. Keep an eye on other road users.
- Lean forwards.
- Accelerate moderately so that your vehicle can overcome the obstacle. Do not stop halfway, but reduce speed once the vehicle is up.
- If the kerb is too high, do not try again, but find an alternative route.



### Down kerbs

- Lean back.
- If you are driving onto a road with traffic, keep an eye on other road users.
- Drive forwards and down the kerb at low speed. Make sure that your anti-tilt wheels (if fitted) do not catch on the edge.



## Up a ramp/hill

- There is a risk of tipping over backwards if the seat is pushed back when you start driving up a slope, e.g. a ramp.
- Pull the seat forward! Check that any ramp is stable.
- Lean forwards.
- Accelerate moderately so that your vehicle can overcome the obstacle. Do not stop halfway. Reduce speed once the vehicle is up. If you need to start on a hill, accelerate slowly so as not to tip over backwards.



## Down a ramp/hill

- Check that any ramp is stable.
- Lean back.
- Drive slowly down. Avoid stopping midway on short, steep slopes. On long hills, it is advisable to stop every now and again if you feel your speed is getting too high.



### **Across a slope**

- Lean into the slope.
- Avoid sudden and sharp movements. This is particularly relevant when reversing.
- Always drive at low speed.

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### **Anti-tilt wheels / stabilisers**

The Mini Crosser is a very stable vehicle. HOWEVER, in the case of incorrect weight distribution or careless driving there is a risk of tipping over.

We therefore recommend fitting anti-tilt wheels in such circumstances. (See picture below). Contact Medema for more info. Find contact information on page two in this manual.



*Anti-tilt wheels*

## Programming



The electronic system is programmable so that the driving characteristics can be optimised for individual users. Programming must only be carried out by people trained in the control systems. Changing parameters incorrectly can produce driving characteristics that are dangerous for the user.



**NOTE!** For safety reasons, modifications may only be made by trained personnel, such as Mini Crosser service engineers and consultants or authorised service personnel at mobility centres, etc.

The control systems have been tested and meet the requirements of ISO 7176/14 and EN 12184

## Service summary for Mini Crosser X-Joy model

Area	Component	Check and remedy
Suspension and wheels	Rear suspension	Check whether the rear of the scooter is drooping. The rear wheel must not rub on the mudguard with a load on the seat. Replace the shock absorbers/springs behind the batteries. See the Spare Parts Catalogue. Check the shock absorbers for oil leaks. Check that the swivel axle/transaxle is securely mounted. Retighten or fit bolts/nuts.
	Check that no cables can be trapped by moving parts.	Fit cable ties.
	Check the wheels	Check the fastenings and the condition of the rims.
	Check the tyre pressure and tread.	Recommended tyre pressure: 2.8 bar (50 psi) The minimum tread depth for good grip is approx. 1 mm. See the Spare Parts Catalogue for disassembly. NB! The rear and front wheels on the 4W MUST always be removed using the five bolts. NEVER undo the actual flange using the bolt in the centre. See the Spare Parts Catalogue. NB! ALWAYS let the air out of the inner tube before taking a wheel apart!
	Check that the hand-brake is working.	Lubricate the lever arm on the brake hub with acid-free oil. Adjust the cable length using the adjusting nipple. If parts are defective: See the Spare Parts Catalogue.
	4W: Front suspension.	Check that the front wheels do not hit the underside of the front mudguards. Check that the rubber dampers are secure. They should just touch the axle beam. See the Spare Parts Catalogue.
	Front wheel suspension.	Check that the guide rods and balls are in good condition and properly tightened. Check the ball bearings in the front wheels and guide spindles for play/wear. Front wheel tracking. See the sketch for correct tracking if uneven tyre wear shows that adjustment is necessary.

Area	Component	Check and remedy
Joystick / Control panel	Lights, indicators, hazard warning and horn	Check functioning and the condition of the switches. If an indicator is not working: Check the connectors and the fuse in the control panel. Or change the bulb.
	Seals	Check that the rubber switch covers are intact and in good condition. Check that all the holes have plugs. Fit new ones if necessary. Check that the sign on the control panel is straight.
	Control panel w/joystick	Check that the control panel is mounted securely. Function test: Test the parking brake on a level surface with minimum 1 metre free space around the chair. Turn on the chair and push the joystick slowly forward until it click. (The chair can start to move in this position). Let go of the joystick at once, and listen for the click sound that should appear within one second. Repeat this procedure in all the driving directions!
	Battery indicator	Check that all the lamps come on when the batteries are fully charged. If there is no indication at all, try another joystick, as the signal comes from there. If not, the card will have to be replaced. If a single lamp is not working, a diode is defective.
Motor / gear / brake (Transaxle)	Wear	Check: That the motor runs smoothly and evenly. If not, the carbon brushes in the motor usually need to be replaced. The minimum length of the brushes is 1-1.5 cm. See the Spare Parts Catalogue for replacement. Check: The gear wheel in the transaxle for wear. Lift one rear wheel and measure the play around the periphery of the tyre. On a new machine the play is 16-18 mm. If the play is much bigger, replace the whole unit. See the Spare Parts Catalogue for replacement. Check: The rear wheel bearings in the gear for wear. Lift the rear of the scooter. Get hold of one wheel at a time. Lift it up and down to see if there is any play in the bearings in the transaxle. If there is, the whole unit should be replaced.

Area	Component	Check and remedy
	Power consumption	<p>Power consumption on a level road with a tyre pressure of 2.8 bar and 75-100 kg on the seat:</p> <p>10 km/t = 20 - 25 A 13 km/t = 22 - 27 A</p> <p>Measure on one of the battery cables using a clip-on ammeter.</p>
	Brakes and disengagement Check function	<p>When the disengagement lever is up: It must not be possible to push the scooter. It must be possible to drive normally when the scooter is turned on.</p> <p>When the disengagement lever is down: It must be possible to push the scooter. The scooter must not be able to go. Error 9 should appear when the accelerator is activated.</p> <p>The brake must be able to hold the scooter on a 15° (26%) slope with 75 - 100 kg on the seat. If not, it must be adjusted or replaced, depending on how much wear there is.</p>
	Braking distance	<p>10 km/h- 2.0 m (9) 13 km/h - 2.2 m (9)</p> <p>The figures in brackets indicate the normal braking parameter when the scooter leaves the factory. It can be changed with the programming unit (forward deceleration). See below for more information. Please note that the braking distance must not be longer than specified in order to comply with official requirements.</p>
Chassis / seat / covers	Footplate	Check the plastic rivets securing the mat. Fit new ones if necessary.
	Seat post	Check that it is properly secured and in good condition.
	Seat	<p>Check that:</p> <p>The release lever locks the seat properly. The seat is firmly secured on the seat frame/plate. The seat tube is in good condition. If necessary, lubricate the tube with a little acid-free grease.</p> <p>The armrests are in good condition.</p>

Area	Component	Check and remedy
	Covers	Check that the plastic covers are in good conditions. Parts with sharp or projecting edges should be replaced. The same applies to covers with an operational function, e.g. the splash guard and battery cover. (water in the controller) Cleaning: See the section on Cleaning.
	Other mechanical components	Check that the other components work properly.
Electrical components	Control card	Check that it is dry and in a good condition. Check that all the connectors are firmly in place.
	Cables/plugs	Check that the cables are firmly in place and not sticking out in such a way as to catch on something or get trapped. Check that the plugs are firmly in place.
	Battery straps	Check that they are properly secured.
Batteries/charger (see also the section on Batteries)	Batteries	Check that there are no cracks in the batteries, that batteries look good and that the battery connections are firmly in place.
	Battery capacity	Check this with a battery tester. If it indicates that new batteries need to be fitted, take care to pair them with an accuracy of 0.1 V. Apply a little acid-free vaseline to the battery terminals before connecting them.
	Battery charger	Check that the indicator lamp on the battery charger changes to CHARGING when the scooter is connected. If necessary, measure the charging voltage during charging. It should be approx. 28.8 V. Leave the scooter to charge overnight. Disconnect the charger and measure the battery voltage after about 15 minutes. It should be approx. 27.6 V for fresh batteries. Check that the scooter cannot go while the battery charger is connected.

## Troubleshooting

The following is a list of various problems that, in our experience, may occur. The list gives possible causes and remedies.

<b>Problem</b>	<b>Possible causes</b>	<b>Solution</b>
The Mini Crosser will not go.  The battery indicator is not lit.	The joystick has not been turned on (I/O).  The batteries are completely flat. The control fuse has blown. The main fuse have blown.	Turn on the joystick (I/O) and wait 5 sec. before activating the accelerator. Charge the batteries.  Change the fuse. Contact supplier.
The Mini Crosser will not go, but the battery indicator is lit.	The Mini Crosser has been overloaded.  The hand brake is on. There is a fault in the electronics. The batteries are flat. The charging plug has not been removed.	Wait approx. 1 min. before trying again. The vehicle must be turned off (see section on Fuses). Release the hand brake. Contact supplier.  Contact supplier. Remove the charging plug.
The driving speed is too low.	The speed selector is on slow. The electronics are overloaded. There is too little air in the tyres.	Change to a faster speed.  Stop and wait a few seconds before starting. Pump the tyres up to the right pressure.
The driving distance per charge is too short.	There is a problem with the batteries. Low temperature.  There is a problem with the charger. There is too little air in the tyres. The charging method is wrong.	Charge the batteries and check that the green lamp on the charger lights up before driving off. Contact supplier.  Pump the tyres up to the right pressure. Read the section on Charging in the User Manual.
The charging lamp on the charger does not light up when the charger is connected to the mains and the Mini Crosser.	No power to the switch. Fault in cable. Fault in charger.	Turn the switch on. Contact supplier. Read the operating instructions for the charger. Contact supplier.

Problem	Possible causes	Solution
The "ready" lamp on the charger does not light up even though the charger has been on for 10-12 hours.	There has been a power cut. The charger is doing a top-up charge. There is a problem with the batteries. There is a fault in the charging plug for the Mini Crosser X-Joy.	Reconnect the charger and repeat the charging process. Check again half an hour later. Contact supplier.  Push the charging plug all the way in and repeat the charging process. Read the operating instructions for the charger.
The "ready" lamp on the charger lights up even when partly discharged batteries are connected.	The fuse in the charger has blown. The switch in the charging plug is malfunctioning.	Contact supplier.  Contact suppliers - read the operating instructions for the charger.
The charger lamp is showing an error.	The charging plug has not been inserted or there is a mains fault. The battery voltage is too low for charging to start.	Push the charger plug in or contact the supplier.  Read the operating instructions for the charger - or contact the supplier.

## Programming



The electronic system is programmable so that the driving characteristics can be optimised for individual users. Programming must only be carried out by people trained in the control systems. Changing parameters incorrectly can produce driving characteristics that are dangerous for the user.



**NOTE!** For safety reasons, modifications may only be made by trained personnel, such as Mini Crosser service engineers and consultants or authorised service personnel at mobility centres, etc.

The control systems have been tested and meet the requirements of ISO 7176/14 and EN 12184

## LED

When experiencing an electronic fault a number of LED in the battery indicator will light up. Below you can see the possible cause, and suggested action that you can try before calling the authorised service agent.

LED	Possible cause
1 LED	The batteries needs charging. Or there is a bad connection to one of the batteries. Check battery connections. If they are ok, try charging the batteries.
2 LED	Bad connection to the left motor. Check the connection. If it seems to be ok, contact authorised service technician.
3 LED	There is short circuit between the left motor and battery. Contact authorised service technician.
4 LED	Bad connection to the right motor. Check the connection. If it seems to be ok, contact authorised service technician.
5 LED	There is short circuit between the right motor and battery. Contact authorised service technician.
6 LED	The vehicle is inhibited from driving by an external signal. The cause is depending on the type of the vehicle. Contact authorised service technician.
7 LED	Joystick fault. Check that the joystick is centred and not moved during start up. Turn of the vehicle and then turn it on again.
8 LED	A possible system error is indicated. Check connections. Contact authorised service technician.
9 LED	There is a bad connection to the parking brake. Check the connection between motor and parking brake.
10 LED	Excessive voltage has been sent to the system. This is often due to a poor connection to the batteries. Check battery connections.
7 LED+ S	A communication error is indicated. Make sure that the joystick cable is properly connected and in no way damaged.

## Batteries

The battery indicator shows how much power is available to the scooter.

- Red, amber and green indicate that the batteries are fully charged.
- Red and amber indicate that the batteries will soon need recharging.
- Red indicates that the batteries need to be recharged as soon as possible, otherwise the scooter will cut out.

The Mini Crosser uses sealed, maintenance-free GEL batteries or AGM. They do not normally generate gas and do not have to be topped up with water.

Only ever use a charger designed for charging dry maintenance-free batteries.

Max. charging current 12 A.

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## Battery disposal

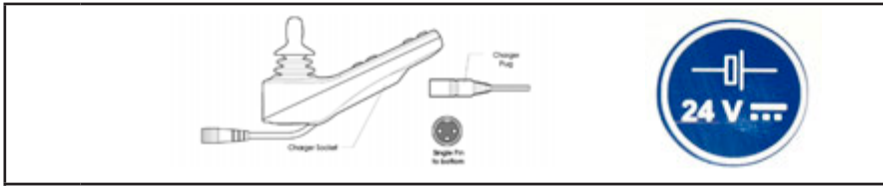
Used batteries must be disposed of through your supplier or at a recycling centre.

Take care when handling any leaky batteries, as they contain corrosive acid.

**INFO!**

New batteries can be purchased from Medema Danmark A/S.

## Charging



Charging	
1	Plug the cable into the control box on the wheelchair.
2	Plug the charger into the outlet or switch it on.
3	Use the indicator lights on the charger to check that charging has started.
4	When charging has finished, switch off or unplug the charger, and then remove the charger cable from the control box.

The battery manufacturer recommends charging the batteries at temperatures between +10° and +30°C in order to achieve the charging times specified in “Technical data”.

Charging takes around 60% longer at +5°C than at +20°C. This is because the battery finds it more difficult chemically to absorb the current.

It is advisable to charge the Mini Crosser in a heated room. If this is not possible every day, it should at least be done once a week.

Please note that the capacity of the batteries will reduce over time and at low temperatures. Battery capacity at -10°C is half that at +20°C.

New batteries do not reach full capacity until they have been charged and discharged about 20 times.

If the Mini Crosser is not going to be used for an extended period, charging once a month will suffice. The batteries must ALWAYS be fully charged when put into storage, as they cannot tolerate being left in a discharged state for lengthy periods.

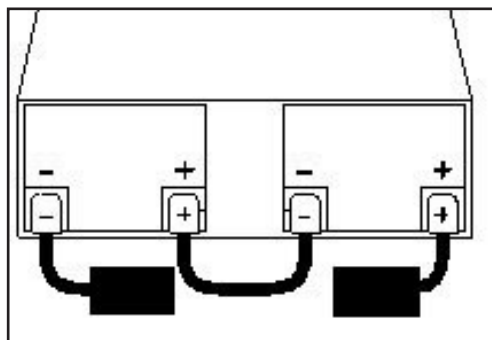
### Note!

The charger must NOT be placed on the seat during charging.

The Mini Crosser should be charged while not in use. The charger supplied from the factory is of the automatic type and

switches to trickle charging (very low power consumption) once the batteries are fully charged. The charger will flash until charging is complete. Then it will show a steady light.

The charger **CANNOT** overcharge the batteries! You can therefore leave the charger connected until the Mini Crosser is next used.



It is important to fit the batteries correctly. The battery terminals and snap locks are marked +/- . They must be fitted as shown in the sketch below. Make sure that the snap locks are properly closed. For the same reason there must

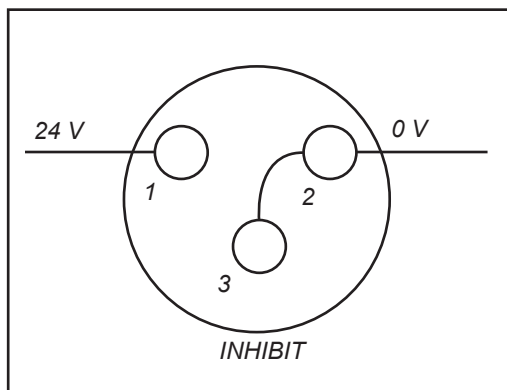
not be any burrs on the terminals.

Please note that the Mini Crosser can be equipped with several types of charger (ask your dealer for information on the various types).

Never use charging devices other than those supplied from the factory without first contacting the dealer.

**NEVER** use chargers that are not designed for charging dry maintenance-free batteries.

### Polarity of charging plug



*NEUTRIK NC3MX charging plug seen from pin side.*

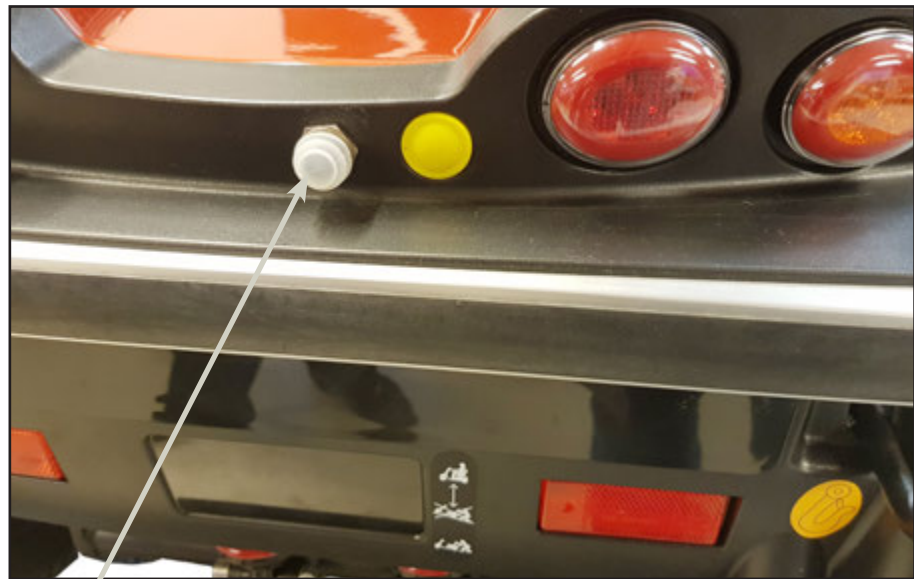
## Fuses

### The Mini Crosser has the following protection systems:

Thermal, which disconnects the power to the motor when overloaded. This thermal fuse is placed on the back of the Mini Crosser. The fuse protects against overloading of both steering and engine. When overloaded, it will switch off the engine - full speed and traction can be resumed after the motor has cooled down for 2-5 minutes.

The fuse can also be pulled to disconnect the power. Be aware, that you must pull it quite hard.

Mini Crosser X-Joy also features a built-in fuse in the steering box. This will turn off, for example, hard driving in wet grass or very soft ground - wait 5 sec. Before you turn on the Mini Crosser again. This fuse will be activated before the thermal jump.



*Thermal fuse placement*

## Brakes

There are three braking systems on the Mini Crosser:

Motor brake - adjusts vehicle speed also when going downhill.

- Magnetic brake - the magnetic brake is automatic and engages when the Mini Crosser stops. In an emergency, the Mini Crosser can be stopped instantaneously by turning of the joystick. Please note that this will cause very hard braking. The rear wheels will lock.



Must NOT be used in the normal course of driving.

The brake must never be disengaged mechanically using the disengagement lever on a slope. This function is only designed for use when pushing the Mini Crosser on a flat road.

Hand brake - intended as an emergency brake and parking brake. It must be operated with caution when driving in slippery conditions and downhill.



*When using the hand brake as a parking brake, lock it in braking position by pressing the button in while applying the brake.*

*To release the brake, press the button again.*

*Hand brake lock*

## Disengagement

### Manual

The manual disengagement lever is placed underneath the battery cover. Before disengagement - do the following:

- Turn off the vehicle.
- Push the disengagement lever at the back down.  
The motor brake is now disengaged and the vehicle can be pushed or towed, but not driven.

### Electronic disengagement

The yellow disengagement button is placed on the back of the vehicle. It works only when the vehicle is turned on.



### NOTE!

**The motor brake must never be disengaged on sloping terrain.**

If the brake is somehow disengaged on a slope/hill, the Mini Crosser will brake automatically when it reaches a certain speed. There is an electric safety feature in the control system, which works even if the battery is disconnected. This is also the reason why the Mini Crosser cannot be towed at more than 5 km/h. See the section about towing.

**Once the motor brake has been disengaged, the Mini Crosser can only be stopped with the hand brake.**



*Push the disengagement lever down to disengage (only hand brake works) and push up to reactivate the motor (normal driving now possible).*



*Disengagement lever*



*Electronic disengagement. Works only when the vehicle is turned on.*

*Disengagement button.*

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## Transporting by motor vehicle

The Mini Crosser must always be restrained and the hand brake locked during transport in a motor vehicle or trailer.

Avoid lifting by the seat, covers, handlebars and armrests

If you just need to lift the Mini Crosser slightly, take hold of it between the rear lights and by the front bumper.

During transport, it may be preferable to remove the seat, for the sake of space.

### IMPORTANT!



If the Mini Crosser is dropped from a height of 0.5 m or higher, it may cause the gears in the gearbox to break.

Secure it in the vehicle with belts attached to the two "eyes" at the front and two at the back. All the "eyes" are marked in yellow. See the section entitled "Securing to vehicle floor with belts".

## Securing to vehicle floor with belts

Q'Straint belt set for securing in motor vehicles.

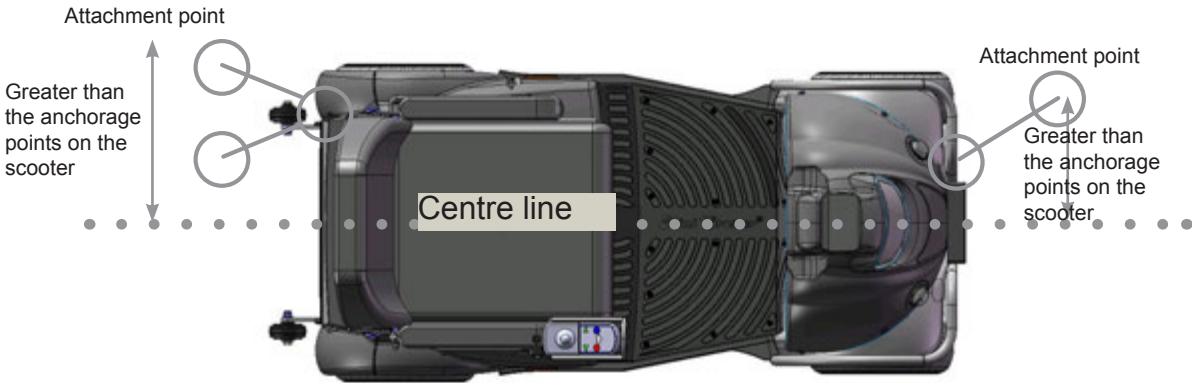
Dahl Engineering belt set for securing in motor vehicles.

ALWAYS use four belts at the back and two at the front.

The belts must always be attached to approved fittings in the vehicle and the four eyes welded to the scooter.

The belts MUST be attached within the angles shown in the picture for optimum security.







For transport in an estate car, the Mini Crosster must be secured with belts to the floor of the car

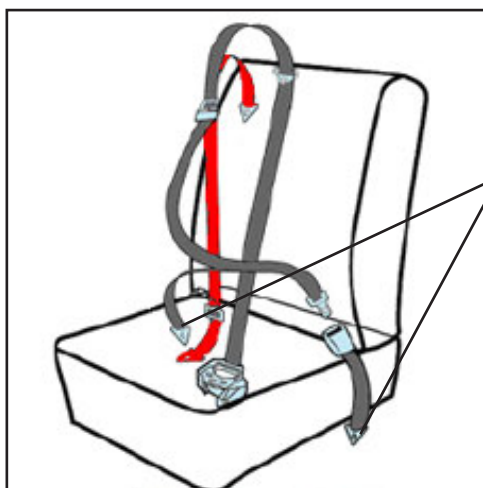
*Eye for restraints*

The Mini Crosster can be used as a seat during transport in a van or bus, provided it is securely anchored to the vehicle with approved four-point belts attached to the restraint points provided on the Mini Crosster.

The Mini Crosster's restraint points have been tested and approved in accordance with ISO 7176-19.

The user must also always be independently restrained in the actual motor vehicle in accordance with traffic legislation rules.

### Example



**Restraining the passenger with a static 3-point seat belt:**

Secure to the rearmost retractors.

The shoulder belt must rest against the collar bone and fall diagonally to the hip, where it is secured.

Tighten the belt by pulling on the loose strap. Undo it again by lifting the buckle. This is the same as on an aircraft.



Retractor with belt



Male and female parts of belt done up



Remember to turn the Mini Crosster off during transport. Turn the key to 0.

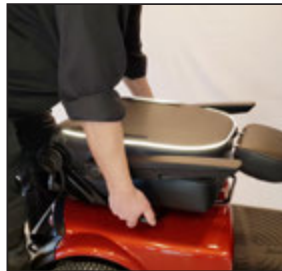
However, if at all possible, we recommend that the user occupies one of the seats in the motor vehicle. All other things being equal, this is safer.

## Transporting by plane

If the Mini Crosser is to be transported by plane, the airlines require:

- the batteries to be flight-approved
- the air to be let out of the tyres
- the battery leads to be disconnected (not always, but frequently)

The seat and cover have to be removed to disconnect the battery leads.



*Lift the armrests up, and fold the seat completely. Release the seat turn - turn the seat a little and lift it of.*



*Remove the thumbscrew and remove the battery cover.*



*Disconnect the (+) pole.*

A battery declaration for air travel can be requisitioned from Medema A/S.home page.

<https://www.medema.dk/tjenester/service-reparation/flycertifikat/>

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## Towing

If you should be unfortunate enough to break down, the Mini Crosser can be towed or pushed. The Mini Crosser must always be turned off and the motor brake disengaged during towing. See the section on Brakes.



If the Mini Crosser is to be towed, secure a rope to the tow fitting on the front - marked with a yellow "hook mark". Do not tow faster than 5 km/h. The Mini Crosser will generate electricity when it is towed, with the motor acting as a dynamo. If it is towed at more than 5 km/h, there is a risk of the motor generating enough electricity to damage the Mini Crosser and, in the worst case, cause a fire.

The Mini Crosser will try to brake if it is towed at more than 5 km/h.

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## Changing the wheels

If you get a puncture in one of the pneumatic tyres or if a tyre is so badly worn that it needs to be replaced, follow the instructions below.

Tyres and inner tubes can be purchased from the authorised dealer who supplied the Mini Crosser.

The Mini Crosser must be TURNED OFF before you start.



### Changing the wheels on the 4W model

Remove the hubcap.

5 mm Allen key

- Undo the five bolts.
- Take the wheel off.
- When the wheel is put back on, the spring washers must be refitted between the wheel rim and bolts.

The bolts must be done up tightly.



Remove the valve cap and use a screwdriver or similar to open the valve so that the air can be released.



### Important!

There is a risk of explosion of the wheel, if the two rims are being taken apart with air in the tire.



### REMEMBER!

- to let all the air out before taking the wheel apart to repair a puncture
- to secure the bolts with spring washers



Remove the flange with the 5 screws (5 mm Allen key).



Replace or patch the tube. Ensure that there are no foreign objects in the tyre before the tube is replaced. Pump air into the tube so that it is positioned correctly in the tyre, but do not fill it up completely yet.



In this way the tube will not get jammed, when the flange is mounted again.

Put the flange back on.

Pump up the tyre to the correct pressure. (See technical data)



Put the wheel onto the Mini Crosser again.

**REMEMBER!**  
The spring washers between the screws and the wheel rim.

## Replace headlights



*If the headlight stops working, replace the entire headlight.*



*The headlight is attached with a fitting on the back of the screen. A single finger screw holds it firmly in place. Remove the screw.*



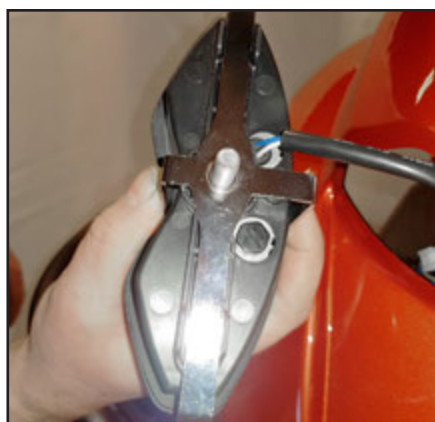
*Remove the headlight. Detach the plug, and it is free to change.*



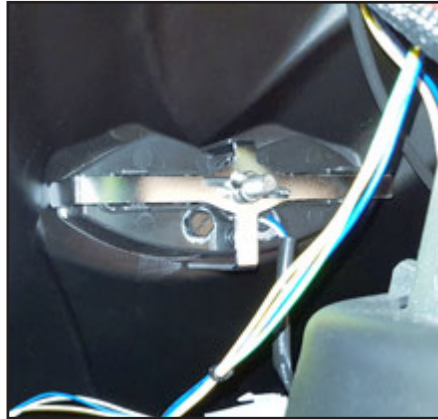
*New headlight set.*



*Mount the plug.*



*Note that the bracket is facing the short side up when the lamp is mounted again. Place the bracket on the inside of the cover.*



*Mount the finger screw again.*



*The headlight can be adjusted up/down by turning this screw.*

*Adjust the headlight so it isn't blinding, but lights up well.*

## Replace the front springs



*It is not necessary to remove any covers to replace the front springs.*



*Remove the screws at the top.*



*And on the bottom. Now the spring can be replaced. Don't remove both front springs at the same time. It will cause the vehicle to collapse.*

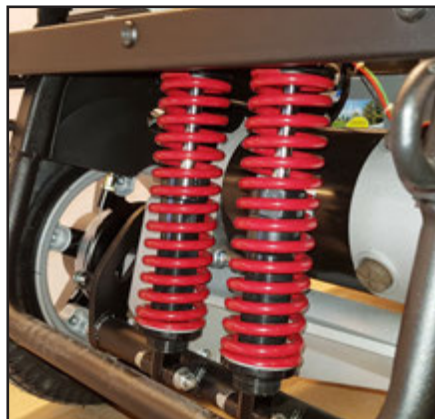


*Mount a new spring in reverse order.*

## Replace rear spring



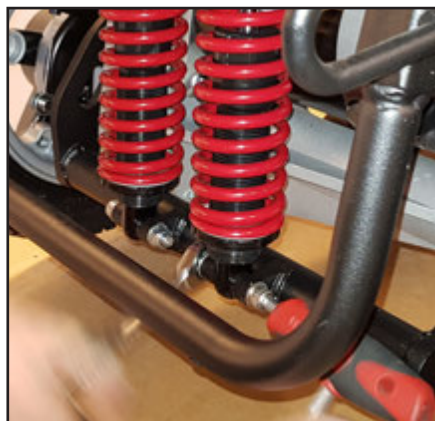
*Remove the rear cover. Remove the stopper, and slide of the rubber. Unscrew the three screws. Unplug all electric connectors and the cover is free.*



*Avoid removing both springs at once. It will cause the vehicle to collapse.*



*Remove the screws in the top.*



*And then in the bottom.*



*The spring can now be removed and replaced with a new.*



*Mount the new spring in reverse order.*

## Replace tail light



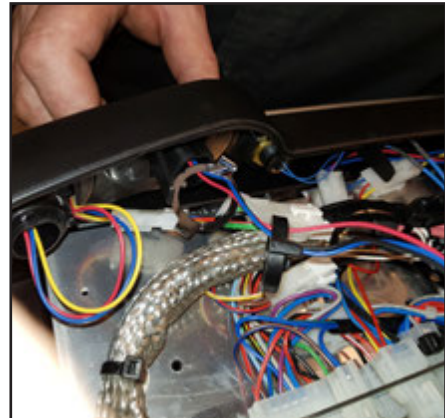
*Lift the armrests up, and fold the seat completely. Release the seat turn - turn the seat a little and lift it of.*



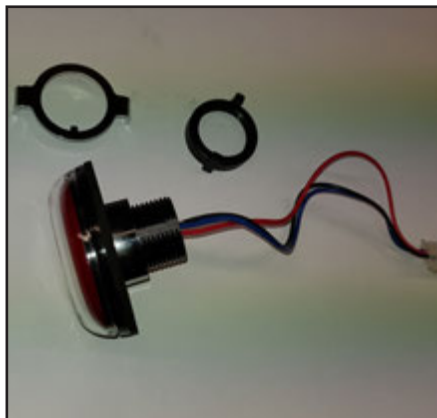
*Remove the thumbscrew and remove the battery cover.*



*Turn the nut until the tail light is loose.*



*Remove the plug and pull the cables through the hole.*



*Mount the new light in reverse order.*



*Connect the plug again.*

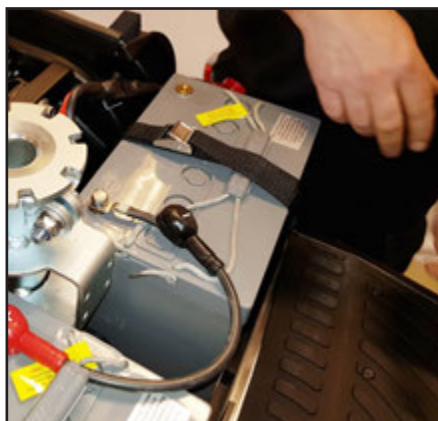
## Replace batteries



*Lift the armrests up, and fold the seat completely. Release the seat turn - turn the seat a little and lift it of.*



*Remove the thumbscrew and remove the battery cover.*



*Disconnect the poles.*



*Remove the battery straps.*



*Tilt the spacer, and pull the strap trough.*



*The batteries are now free to be replaced with new ones. Mount in reverse order.*

## Replace transaxle



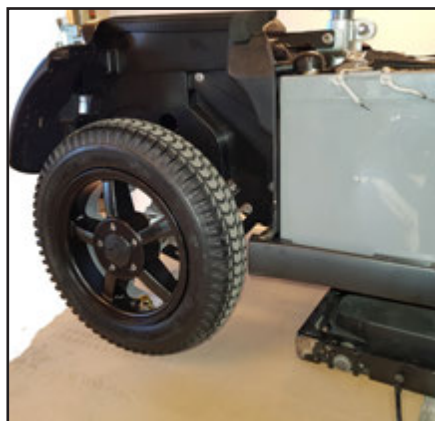
*Lift the armrests up, and fold the seat completely. Release the seat turn - turn the seat a little and lift it of.*



*Remove the thumbscrew and remove the battery cover.*



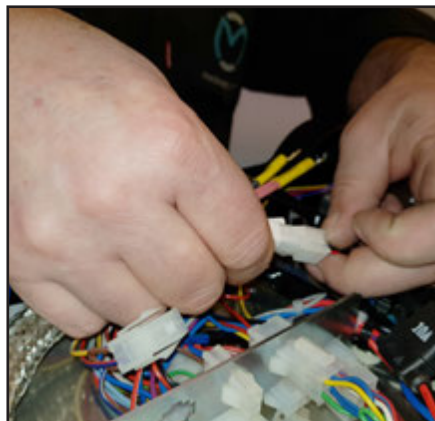
*For safety reasons - disconnect one of the poles.*



*Raise the rear end so the wheels are lifted of the ground.*



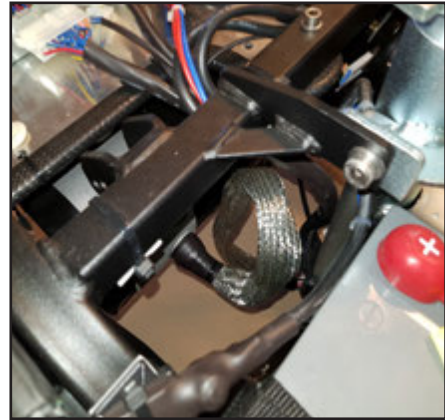
*Disconnect M- and M+.*



*Disconnect the main cable plugs.*



*Cut the cable ties that keep the cable in place. Remember new cable ties when mounting again.*



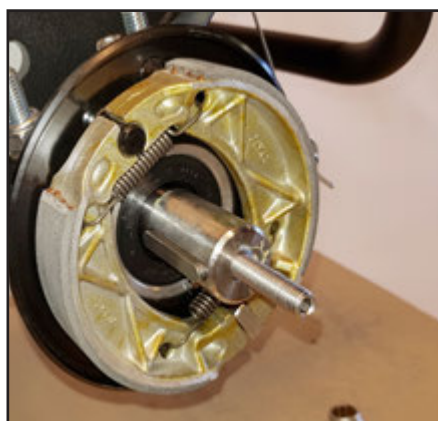
*The cable is free.*



*Remove both rear wheels.*



*Remove the cover (key 17)*



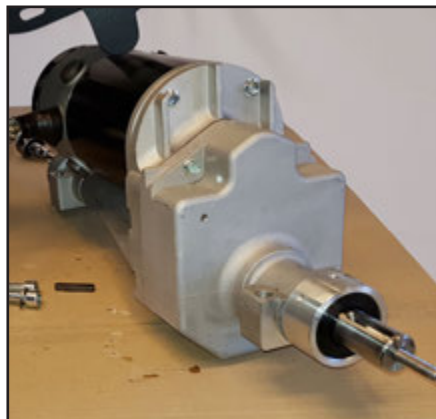
*Remove the three screws that hold the brake disc.*



*Use a long cable tie, to keep the brake dick away from the working area.*



*In one side the transaxle is laying on top of the rear suspension. In the other side it is fixed from beneath. Remove the screws from this side first.*



*When all four screws are removed, the transaxle can be removed and replaced with a new one. Mount in reverse order.*



*On a new transaxle, the note is taped in place.*



*Remove the tape and coat it with bearing grease.*



*Remount the brake disc. The three screws should be tightened with 4 Nm.*



*The plugs should be tightened with 5 Nm. Remember to mount new cable ties.*

## Replace the magnetic brake



*Raise the rear end so the wheels are lifted of the ground.*



*Remove the cover - three screws.*



*Now there is access to the magnetic brake.*



*Remove the three screws to dismantle the magnetic brake. They were all greased with locktite when they were mounted.*



*Check the distance to the magnet. If the measure is more than 0,35 mm, it is worn, and has to be replaced. The distance on a new magnetic brake is 0,15 mm.*



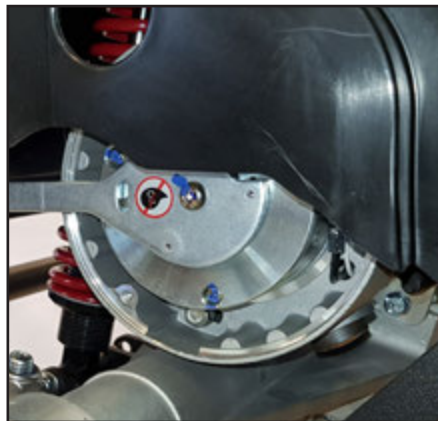
*Disconnect the four plugs, and the magnetic is free to be removed.*



*When the new magnetic brake is mounted, be aware to tuck the cable away before mounting the screws.*



*Use locktite on the screws. Tighten the screws with 4 Nm. Locktite No 2400.*



*Mark the screws with blue paint.*

## Replace fuses



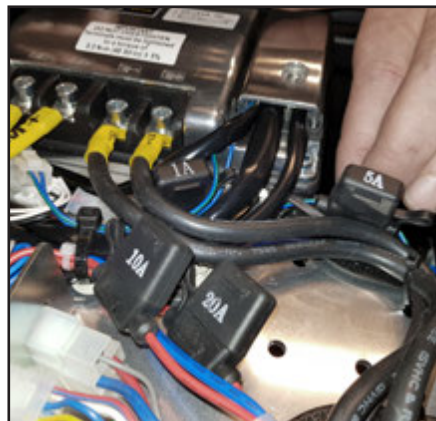
*Lift the armrests up, and fold the seat completely. Release the seat turn - turn the seat a little and lift it of.*



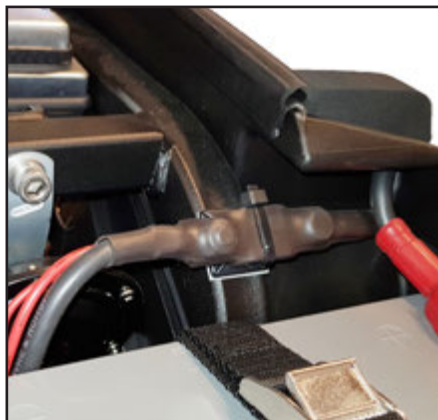
*Remove the thumbscrew and remove the battery cover.*



*For safety reasons - disconnect one of the poles.*



*Fuses 1A (hour meter), 5A (Horn), 10A (light), og 20A (charging) are placed on the electric plate.*



*In both sides is a main fuse, fixed with cable ties. When replaced a new protection is heated in place .*

Sikring str.	Sikring for
1A	Hour meter
5A	Horn
10A	Light
20A	Charging

## Replace coal



*Lift the armrests up, and fold the seat completely. Release the seat turn - turn the seat a little and lift it of.*



*Remove the thumbscrew and remove the battery cover.*



*For safety reasons - disconnect one of the poles.*



*Remove the rear cover. Remove the stopper, and slide of the rubber. Unscrew the three screws. Unplug all electric connectors and the cover is free.*



*There are four coals. Turn of the lit.*



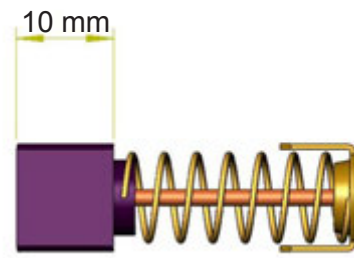
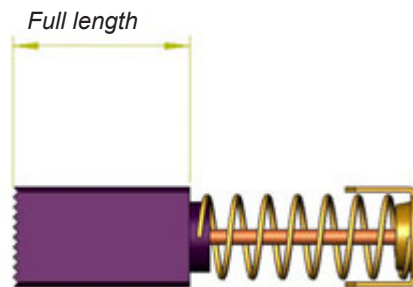
*Blow the hole clean before a new coal is fitted. The coal should move effortlessly forth and back. If needed the coal can be slightly grinded on the side until it fits perfectly.*



*Ready to mount the lit again.*

*Check the coal length to see if it needs replacing.*

*No matter if it is a Schmid or Mini Crosser transaxle, the rule is, that a coal should be replaced if worn down to 10 mm.*



*Turn the lit on again.*

## Introduction to the Ergo2 seat

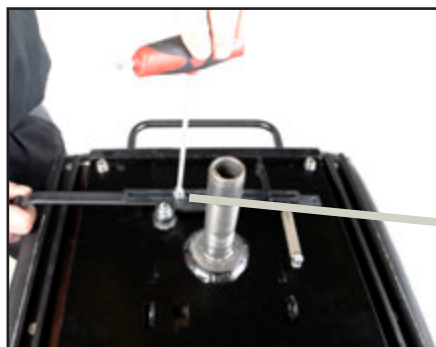
The Ergo2 seat is designed to stay safe to use for at least 10 years.



### Lever for rotating the seat

The lever must be pulled back to rotate the seat. The seat can then be rotated to each side, locking at each 45°.

The lever is spring-loaded, and the seat is locked automatically when the lever is released. This lever is located on the right side as standard, but can also be positioned on the left side. When the lever is located on the left-hand side, it must be pushed forward in order to rotate the seat instead of pulling back.



Out / in adjustment of the lever for rotating the seat

Lift the seat off the vehicle.

Loosen the two Allen screws and the lever can now be adjusted out and in to the desired position.



Placement of lever for rotating the seat on the left-hand side

Remove the two Allen keys and pull the lever out. Insert the lever from the left-hand side and tighten the Allen screws.

When installing the lever on the left-hand side, the lever must be pushed forward to rotate the seat..



### Mount the seat again

In order to ensure that the seat returns to the correct position, the lever for rotating the seat must be released in order to place the seat.



### Lever for fwd/bw adjustment of the seat.

Pull the lever up to release the seat on the slide rail.

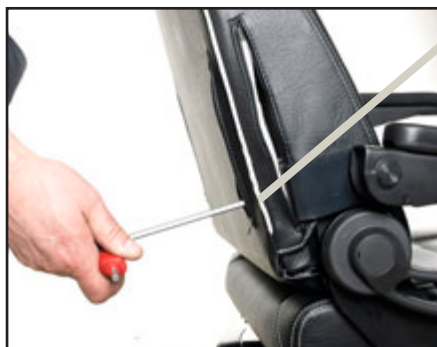
Then the seat can be moved forward or backward as desired with 200 mm of travel.

When the lever is released, the seat will automatically lock into place in the closest position.



### Height adjustment of armrest

Unzip the zipper on the side of the backrest and the backrest itself.



Unscrew the Allen screw and the armrest can be pushed up or down as needed. It can be adjusted 140 mm.



### Width adjustment of armrest

Each armrest can be adjusted 25 mm on each side. Loosen the Allen screw and the armrest can be adjusted longitudinally.



### Adjusting the angle of the armrests

The adjustment screw makes it possible for the armrest to be adjusted 60°.

The armrest can be tilted up to facilitate entry and exit.



### Adjusting the angle of the backrest.

The angle of the backrest can be adjusted 45° backward and 90° forward. This is done by pulling the lever on the right-hand side of the seat.



Backrest tilted 45° backward.



Backrest tilted 90° forward.

This is why the seat does not necessarily need to be removed during transport, e.g. in a car.



**Backrest forward / back.**

Loosen the specified screws on both sides.



The depth of the seat can now be adjusted by sliding the seatback forward and back.

Shown here with 320 mm seat depth.

The seatback can then be moved backward to the edge of the rail and forward to the desired position. Tighten the screws after adjusting.



Shown here with 550 mm seat depth



**Height adjustment of headrest.**

Press the button and the headrest can be raised and lowered as needed.



**Adjustment of the headrest forward and backward.**

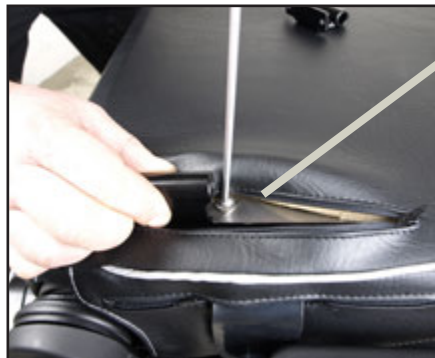
The headrest can be tilted forward and backward as needed.

## Basket on seatback



### Mounting of basket on the seat. (Optional accessory)

Complete mounting kit for basket.  
Two brackets and four Allen screws.



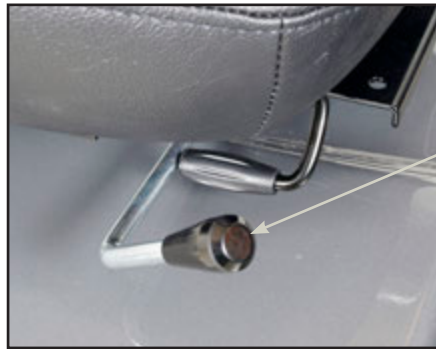
Unzip the zipper and position the brackets in front of the two predrilled holes.



Mount the basket on the brackets and now it is ready for use.  
Remember to insert a locking split after mounting.

Baskets are part of a wide range of accessories. Contact your local dealer or Medema A/S. See contact information on page two in this manual.

## Introduction to the Eblo seat



### The lever for turning the seat.

Pull the lever up to release the seat. The seat can then be rotated 90° to each side, locking at each 45°.

The lever is spring-loaded, and the seat is locked automatically when the lever is released.

This lever is located on the right side as standard, but can also be positioned on the left side.

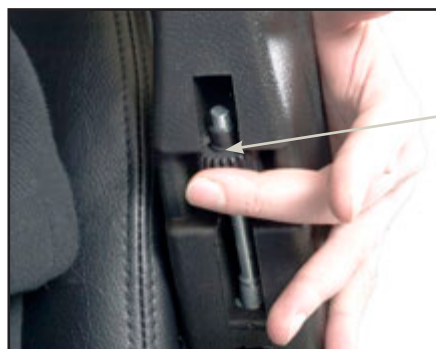


### Lever for fore/aft adjustment of the seat.

Pull the lever up to release the seat on the slide rail. Then the seat can be moved forward or backward as you wish. When the lever is released, the seat will automatically lock into place

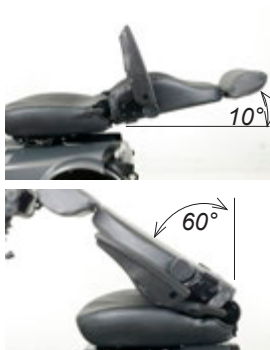
in the closest position.

There is a stop on the front and the back of the slide rail.



### Adjusting the angle of the armrests

The angle of the armrests can be adjusted by turning this screw.



### Adjusting the angle of the backrest

The angle of the backrest can be adjusted approximately 140°. This is done by lifting this lever.



### Adjusting the lumbar support:

The lumbar support can be adjusted by turning the handle counter-clockwise.



### Headrest:

The headrest can be adjusted up/down in steps.

## Flame resistance

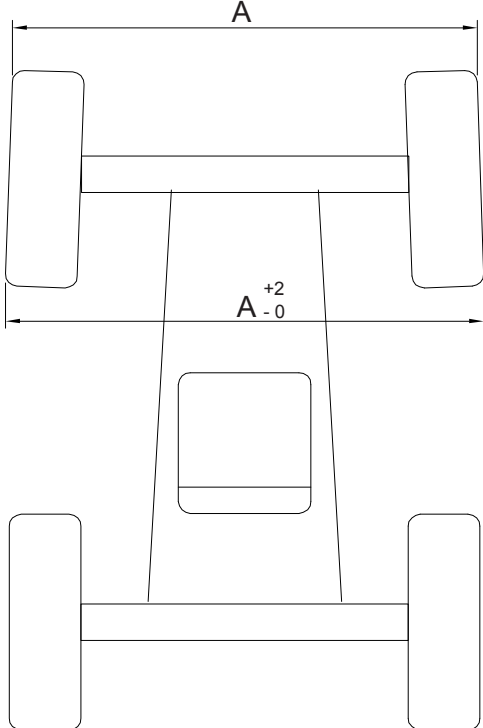
The Mini Crosser seat's flame resistance has been tested in accordance with DS/EN 1021-2:2014 Furniture - Assessment of the ignitability of upholstered furniture - Part 2: Ignition source match flame equivalent.

### Warning!



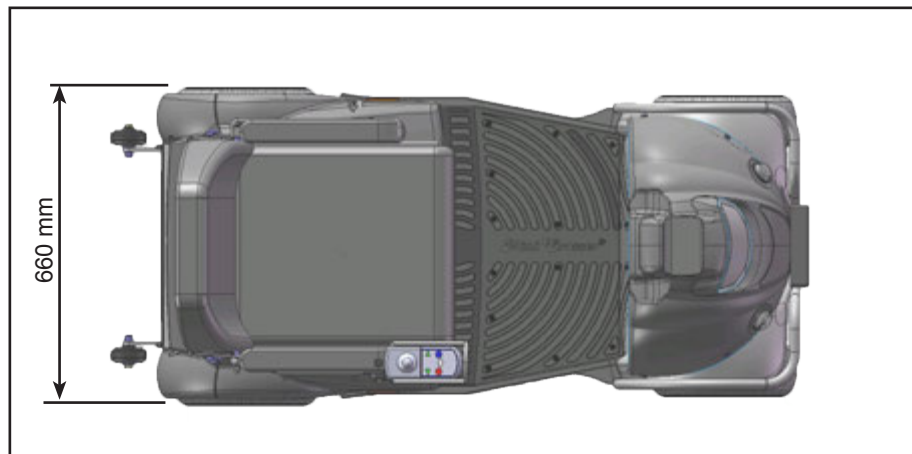
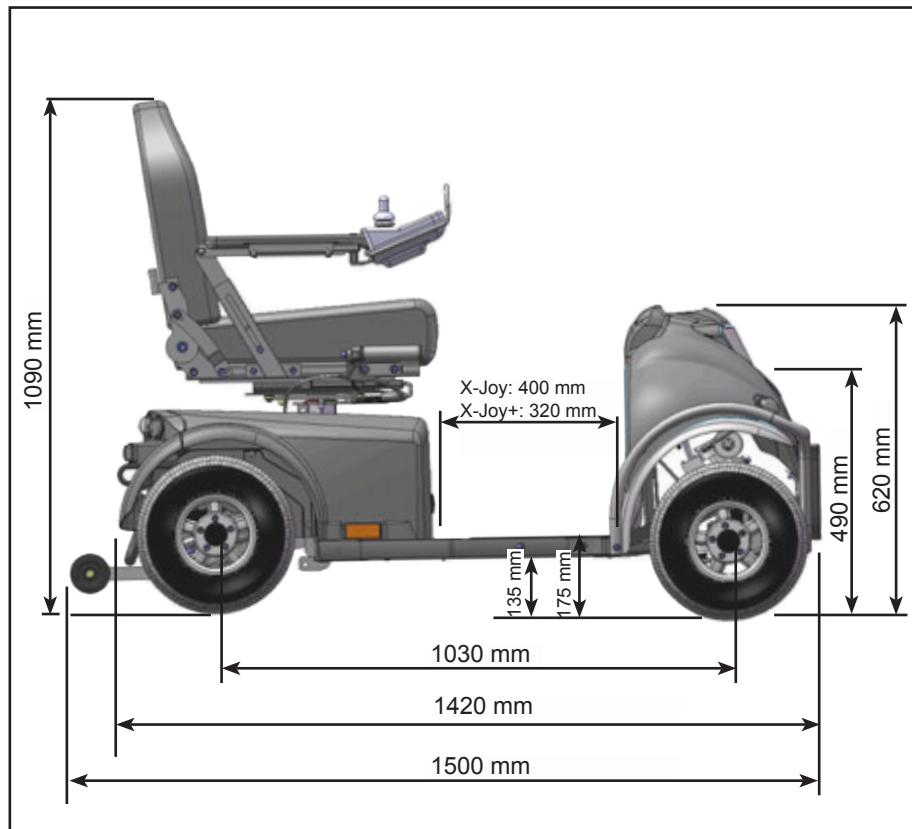
The seat may become very hot if exposed to direct sunlight. Similarly, the seat will become very cold if it is exposed to cold temperatures, e.g., frost.

### Front wheel alignment, 4W









*Front wheel alignment (toe-in), 4W*

## Dimensioned drawing, Mini Crosser X-Joy



## Technical data

	X-Joy
<b>General information</b>	
Height Mini Crosser, w/seat. Transport height without seat	109 cm 61 cm
Total length: Total length incl. anti-tilt wheel: Total width:	142 cm 150 cm 66 cm
Total weight incl. batteries and Ergo2 Std seat. (45 cm)	158 kg
Weight without seat (Ergo Standard 45 cm).	131 kg
Heaviest part - Ergo2 seat 45 cm	27 kg
Static stability in all directions. Dynamic stability in all directions.	15° 12°
Kerb climbing	11 cm
Max. speed.	13 km/h
Braking distance 13 km/h	2,8 meters
Controller	P&G
KW transaxle	0,7 kW
Turning Circle / radius	330 cm / 165 cm
3-point Turning Circle / radius	190 cm / 95 m
Max user weight - standard	150 kg
Classification, IP Mini Crosser Controller JK Medico charger	IPx4 IPx5 IP54
<b>Wheels</b>	
1503-1003 Wheel, model-X, 2,50-3,30-8".complete with rim and tyre.	2,8 bar 
1503-1114 13x5.00-6" ext. Ø325 mm Wheel Norway black - T, E, Nordic, MaxX, MaxX HD, M and X	59 pasi / 4,1 bar 
1503-1115 13x5.00-6" ext. Ø325 mm Wheel Norway black w/spikes - T, E, Nordic, MaxX, MaxX HD, M and X	59 psi / 4,1 bar 

	<b>X-Joy</b>
1503-1336 13x3.00-8" ext. Ø340 mm Wheel black - T, M and X	51 psi / 3,5 bar 
1503-1273 13x3.00-8" ext. Ø340 mm Wheel black puncture free - T, M and X	PUR 
1503-1012 3,50-8" ext. Ø370 mm Wheel, model X Used only as rear wheels and never with 15 km transaxle	36 psi / 2,5 bar 
Classification, ISO	Class C
<b>Seats:</b>	
Effective seat width Ergo2 child Ergo2 standard Ergo2 HD Eblo	35 cm 40, 45, 50 cm 60, 70 cm 50 cm
Effective seat depth Ergo2 child Ergo2 standard + HD Eblo	20-43 cm 32-55 cm 43 cm
Seat plane angle	3°
Backrest height Ergo2 child Ergo2 standard + HD Eblo	44 cm 54 cm 52 cm
Seat surface height from ground to front edge Ergo2 (child, standard + HD) Eblo	59 - 69 cm 61 - 71 cm
Seat surface height from footrest to front edge Ergo2 (child, standard + HD) Eblo	42 - 52 cm 44 - 54 cm
Backrest angle Ergo2 (child, standard + HD) Eblo	-90° til +48° -54° til +80°
<b>Batteries:</b>	
56 Ah Batteries.	35 km (*)
85 Ah Batteries.	45 km (*)
Battery type: Standard: Option:	2 x 12V / 56 Ah 2 x 12V / 85 Ah

	<b>X-Joy</b>
Max battery measure i cm. 56 Ah 85 Ah	26,5 x 17 x 23 26 x 17,1 x 21,5
Battery weight pr. stk. 56 Ah 85 Ah	42 kg 54 kg
Energy consumption in kWh, when charging from "empty". 56 Ah 85 Ah	Ca. 1,5 Ca. 1,5
Charger, 24 V DC 56 Ah 85 Ah	6 - 10 A 6 - 10 A
Approx charging time at 20 ° C	8 hours
<b>Lighting:</b>	
Headlight	LED
Rear light	LED
Blinkers	LED
Standard colours Option 1 Option 2	Orange - metallic Black - metallic
<b>Noise:</b>	
Noice level	60db
<b>The Mini Crosseren X-Joy complies with the following standards:</b>	EN 12184
<b>Complies with the following standards:</b>	
The Mini Crosser has been tested for the requirements described in:	EN 12184:2014
<b>Various information</b>	
Front basket - maximum load capacity	8 kg
Rear basket - maximum load capacity	15 kg
Wheel bolt must be tighten with max. Dry: Greased	12 Nm 6 Nm

*(\*) Driving distance is depending on: temperature, wind, terrain, tyre pressure and user weight.*

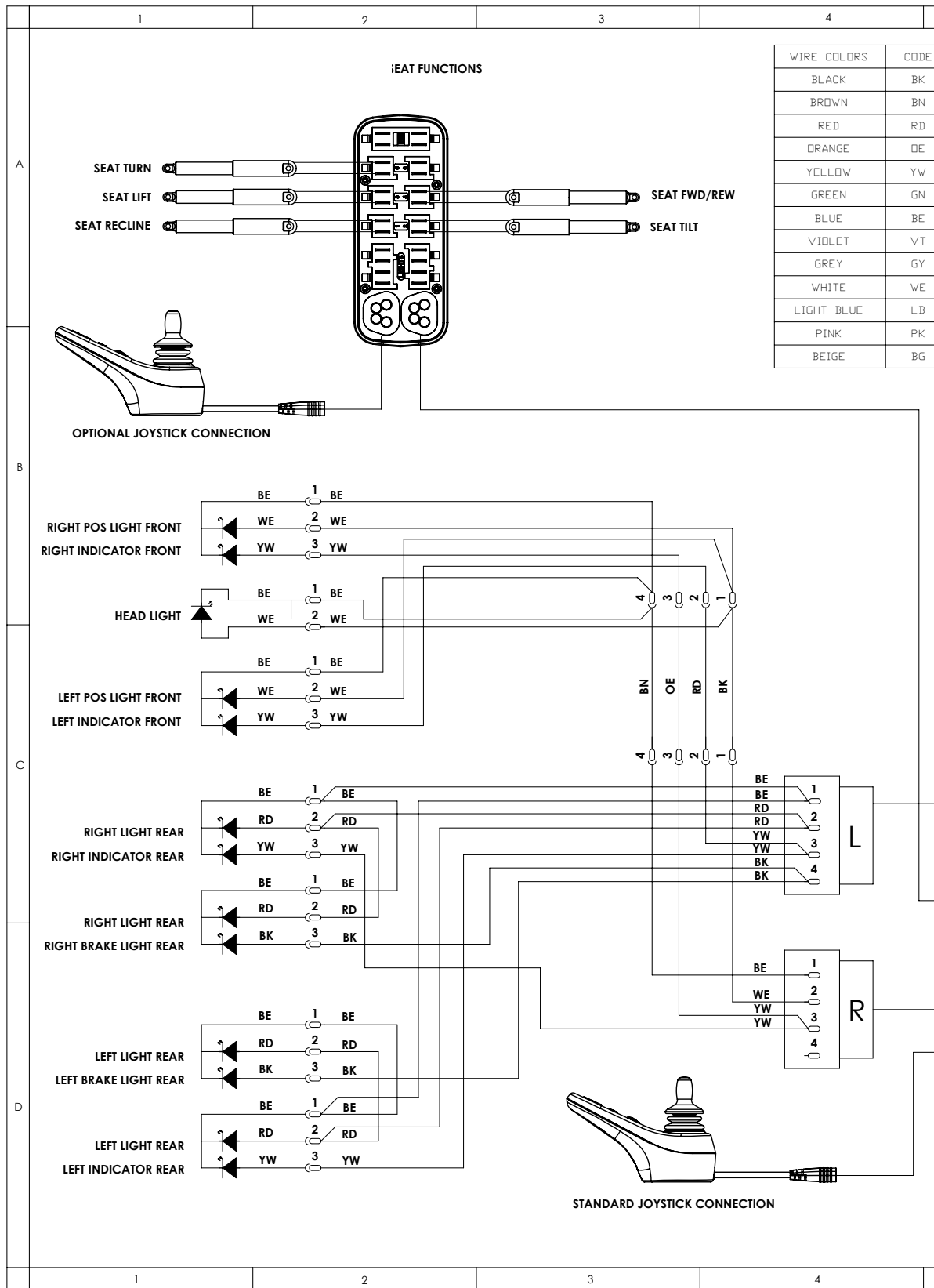
*Maximum driving distance with new batteries at +20° on flat, firm surface  
Optimum battery capacity is reached after approx. 20 charges / discharges.*

## Weight of the seats

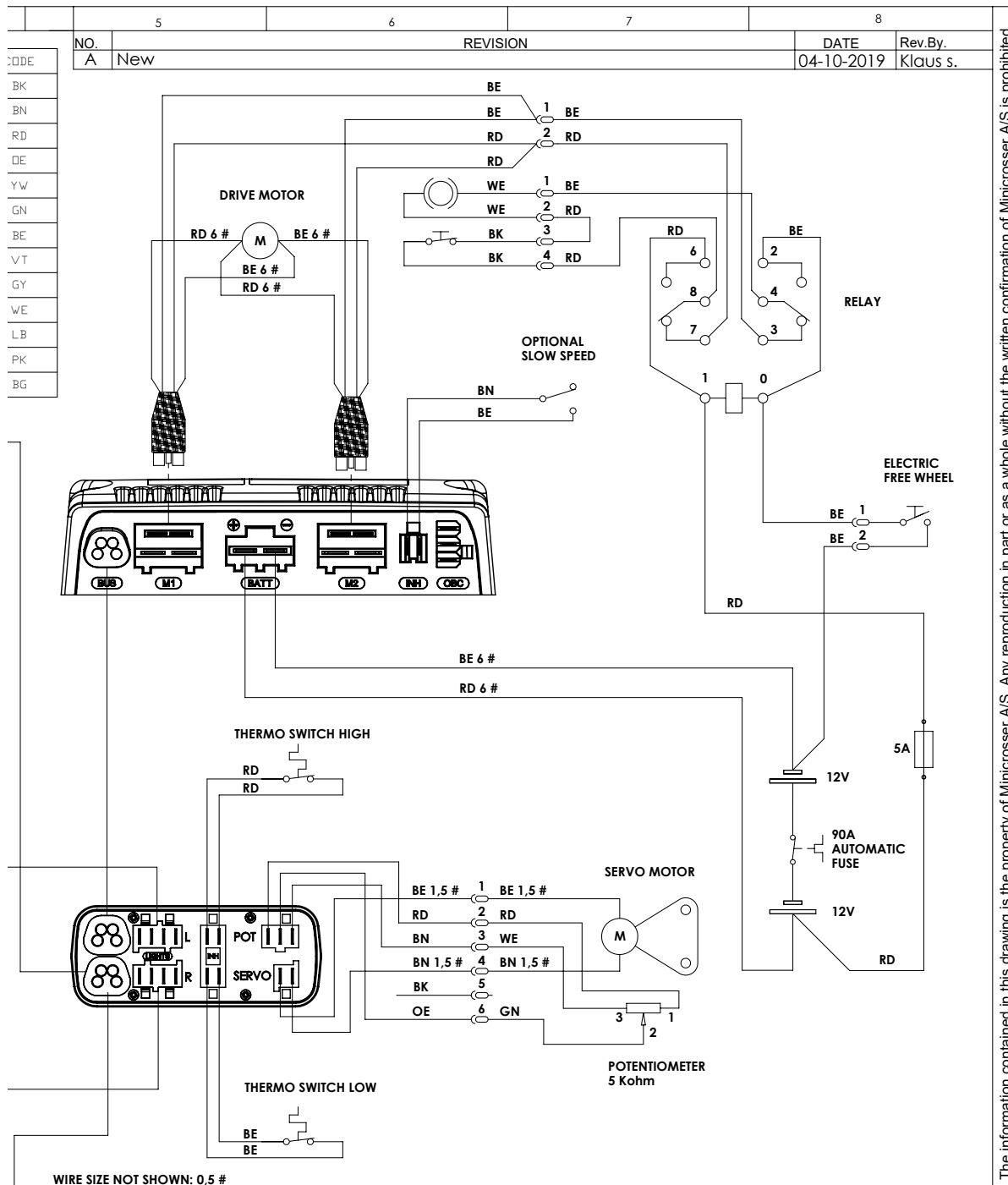


*This is our standard Ergo 45 cm seat, the heaviest part of the chair to remove. The label showing the seat's weight is located as shown above.*

Seat model	Weight
Eblo seat 45 cm	19 kg
Ergo2 seat 35 cm	20 kg
Ergo2 seat 40 cm	26 kg
Ergo2 seat 45 cm	27 kg
Ergo2 seat 50 cm	29 kg
Ergo2 seat 60 cm.	36 kg
Ergo2 seat 70 cm.	37 kg



T:1533\1533-1003



WIRE SIZE NOT SHOWN: 0,5 #

Weight (kg): 907.13	Surface treatment:	Welding tolerances: EN/ISO 13920-AE	Min. general roughness: Ra 3.2
General tolerances: ISO 2768-1-m	Geometrical tolerances: ISO 2768-2-L	Material:	Material <not specified>
<b>Medema AS</b> Enggaardvej 7, DK-7400 Herning Tlf. +45 70 10 20 54 Fax. +45 97 16 85 82 Internet: http://www.medema.com	Dimensions in mm	European projection	Scale: 1:2
	Beskrivelse: EI-diagram X-Joy	Description: Electrical diagram X-Joy	Sign: Klaus S. Date: 04-10-2019
		Dwg.no: <b>1533-1003</b>	Issue: A

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# Own notes





**medemagroup**