



Freee F2 Electric Wheelchair

User Manual



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1. Safety Notes Related to this User Manual

Congratulations on the purchase of your new F2 electric wheelchair!


1.1. About this Manual

To learn to ride your F2, you must read and follow all instructions and warnings in this User Manual. It is important that you follow all safety warnings and cautions that appear throughout the User Manual and that you use good judgement when riding your F2.

Should you have questions before you attempt to use your F2, please contact us.

1.2. Safety Messaging

The following safety messaging conventions are used throughout this guide:

Symbol	Description
	<p>Warns you about actions that could harm you or others</p>

1.3. The Risk of Injury



The F2 is an electric wheelchair with patented balancing technology. Balancing technology cannot prevent injury if you do not ride the F2 safely. Whenever you ride the F2, you risk death or serious injury from loss of control, collisions, and falls. To reduce the risk of injury, you must read and follow all instructions and warnings in the User Manual.

1.4. Requirements for Riding the F2

The F2 is suitable for persons with restricted mobility. The F2 is steered by the sitting rider. By leaning the upper body forward, the F2 is accelerated, by leaning the upper body backwards, the F2 is slowed down. Pivoting the Handlebar to the left, the F2 is steered to the left. Pivoting the Handlebar to the right, the F2 is steered to the right.

The driver must have an unrestricted mobility of the upper body to safely steer and control the F2.

Generally, it is highly recommended that the rider meets these requirements irrespective of the traffic regulations in the country of use.

The minimum rider weight is 45 kg, the maximum rider weight is 100 kg.

1.5. Risk Prevention



The F2 is an electric wheelchair and is therefore only suitable for transporting a sitting person.

The F2 is not suitable for:

- transporting a standing person
- transporting loads
- towing another vehicle

Please pay attention to the notices in the chapter “Risk Prevention“.

2. Transportation and Assembly

The following procedures must be followed before being able to ride the F2.

2.1. Transport Packaging

The F2 can be taken out of the transport packaging. Instructions for removing the F2 out of the transport packaging can be found in the transport packaging or in the enclosed documents.

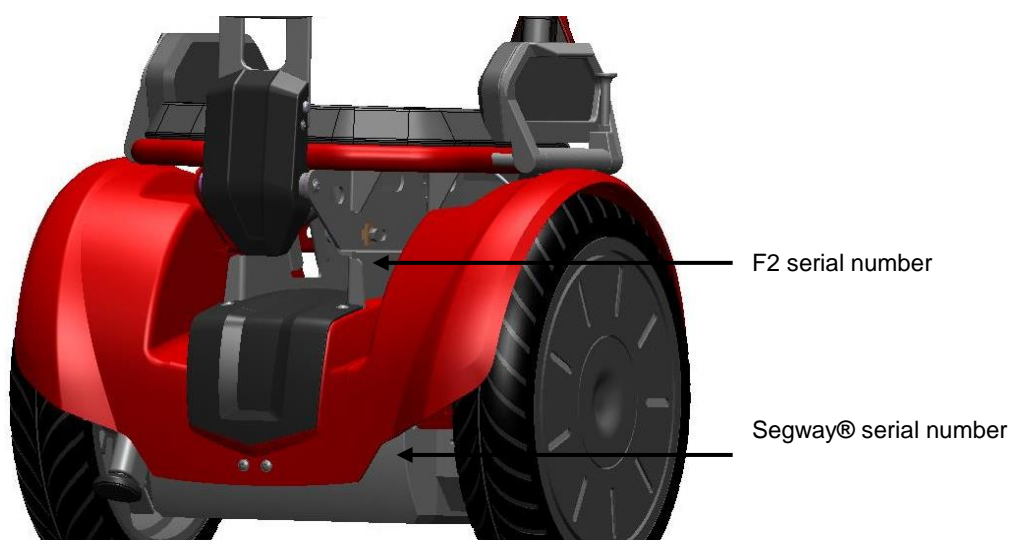
2.2. Assembly

Tools are not required to assemble the F2. Subsystems such as the Handlebar, the Backrest and Footrest can be easily assembled by hand. Instructions can be found in the enclosed documents.

2.3. Serial Number

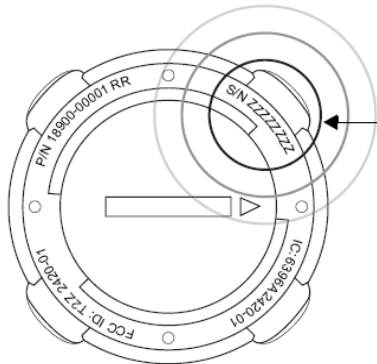
The F2 is a vehicle consisting of a motor, a chassis and steering components. These components are provided with serial numbers ex works. The serial numbers can be found on each of these components as well as on the delivery papers. Store the delivery papers containing the serial numbers in a secure place. The serial numbers can provide helpful information in case of a repair.

F2 Serial Number, Segway® Serial Number



InfoKey Controller Serial Number

Your F2 is delivered with two InfoKey Controllers. The serial number of the InfoKey Controller is located on the back under the trim ring of the InfoKey Controller. The serial number begins with S/N.

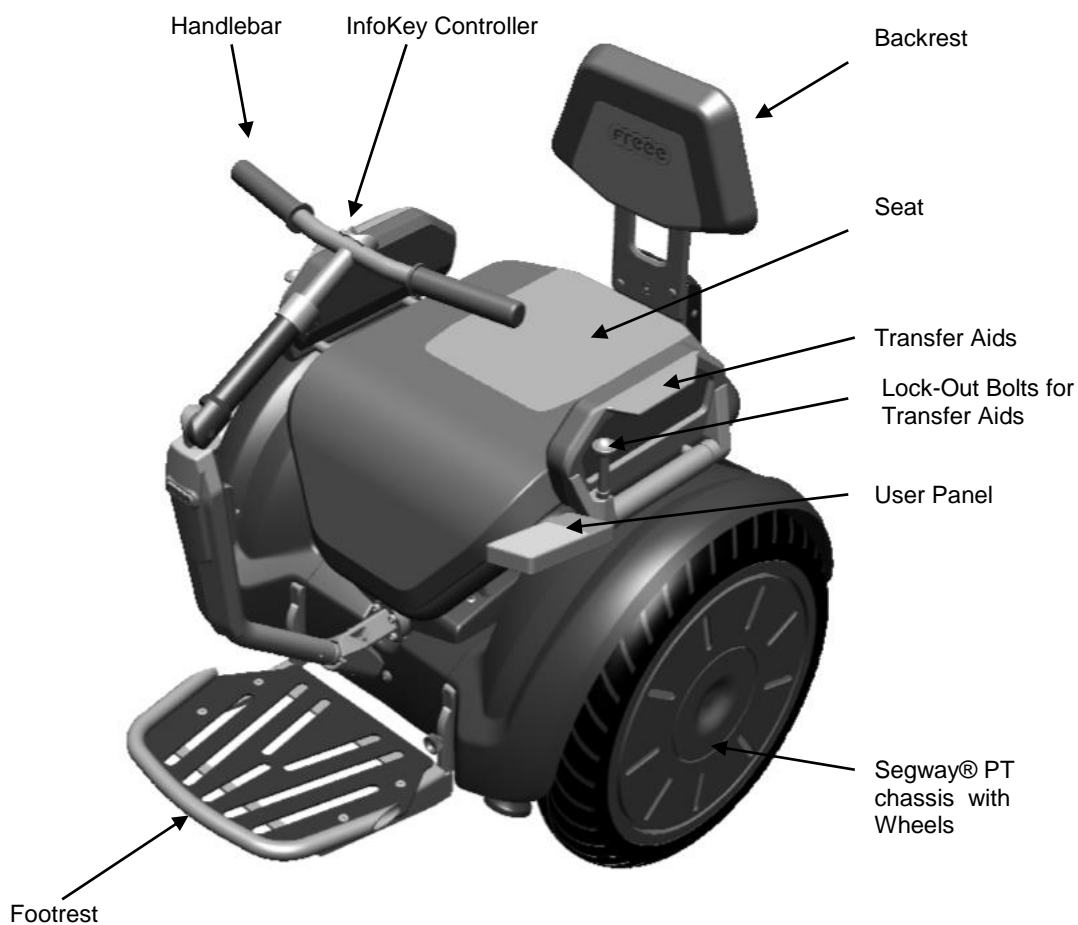


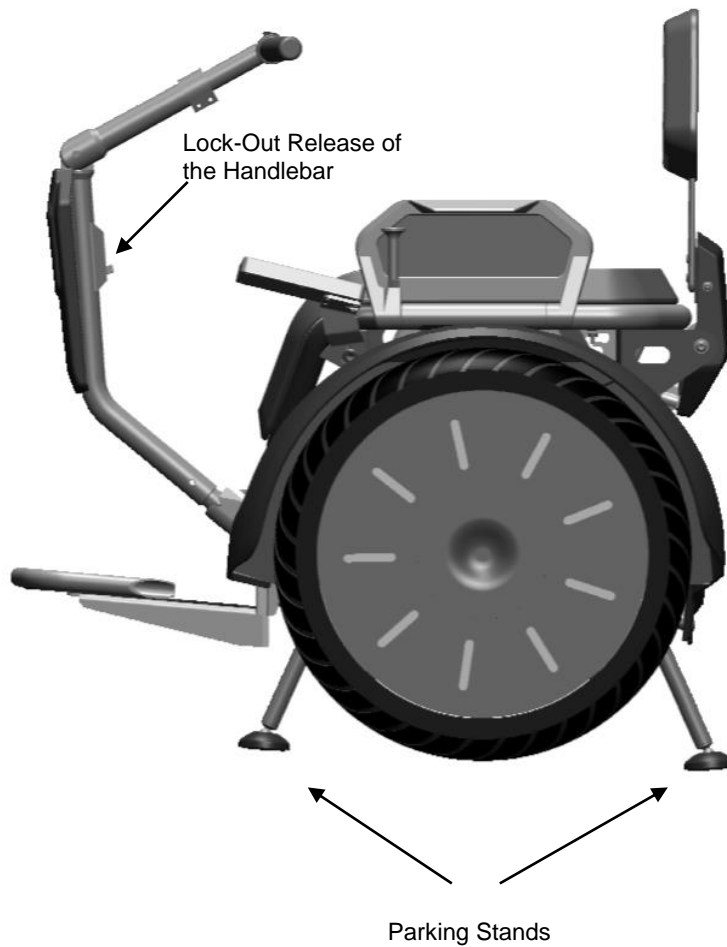
serial number location of the InfoKey Controller

3. F2 Components and Subsystems

3.1. Vehicle

The F2 consists of a Segway® PT Chassis and a Seat Platform and electric Parking Stands.





All parts of the F2 must be approved and properly installed by Freee Mobility. Never attempt to ride the F2 without the Handlebar attached. Using your F2 without all parts properly installed could damage your F2 and result in serious injury and/or damage from loss of control, collisions, and falls.

Warning:



Do not modify the F2. Modifications to the F2 could interfere with the operation of the F2, could result in serious injury and/or damage, and could void the F2 Limited Warranty.

3.2. Seat Platform

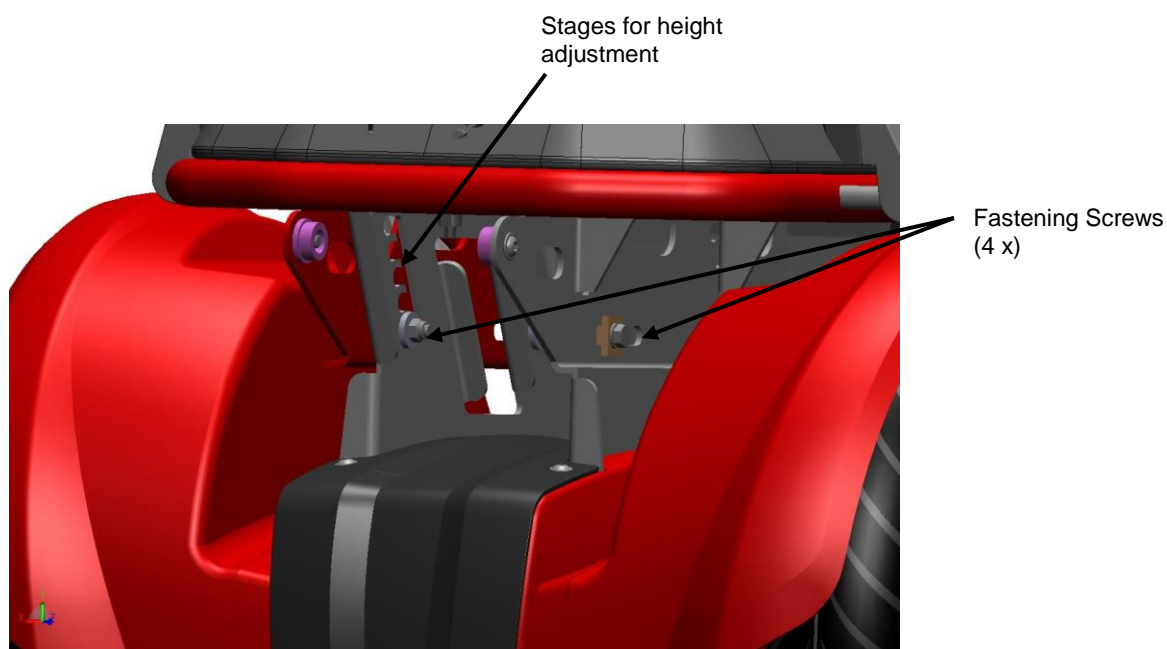
The Seat Platform consists of a Seat with a Cushion, Transfer Aids and Backrest.

3.2.1. Seat

The Seat is adjustable to 5 different heights. In horizontal direction, the Seat is adjustable infinitely. The Seat is attached with 4 screws to the Chassis.

Adjusting the Seat Horizontally:

- Loosen the screws with a 13 mm socket wrench.
- Adjust the Seat to the desired position.
- Tighten the screws in an appropriate manner using two screw-wrenches.



Adjusting the Height of the Seat:

- Loosen the screws with a 13 mm socket wrench.
- Adjust the Seat to the desired height.
- Tighten the screws in an appropriate manner using two screw-wrenches.

Caution:



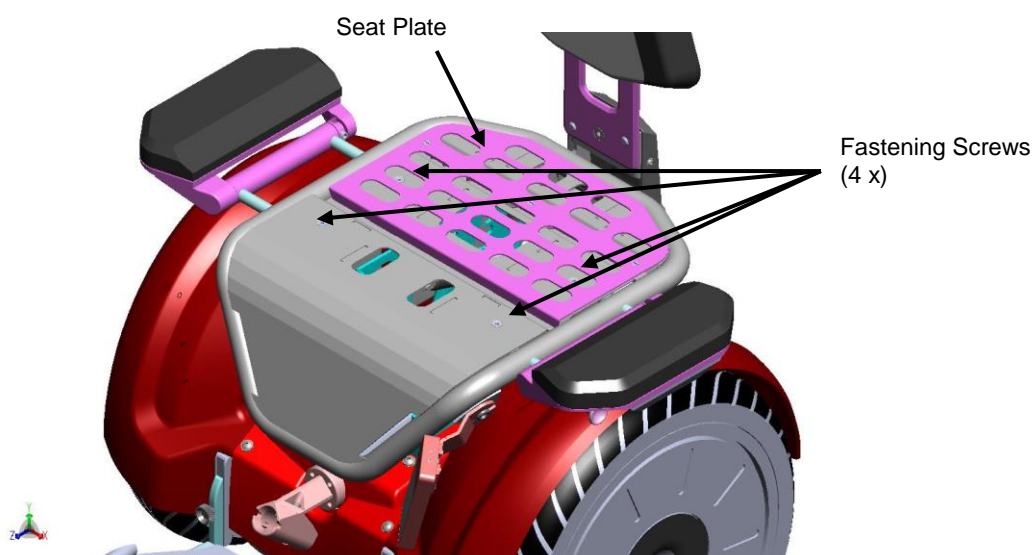
Ensure the Seat screws are always tight. If the screws loosen during riding the F2, this could result in loss of control and/or injury of yourself and/or others.

3.2.2. Transfer Aids

The Transfer Aids provide side support for your thighs. They can be adjusted in the width. For transfer they can be folded aside.

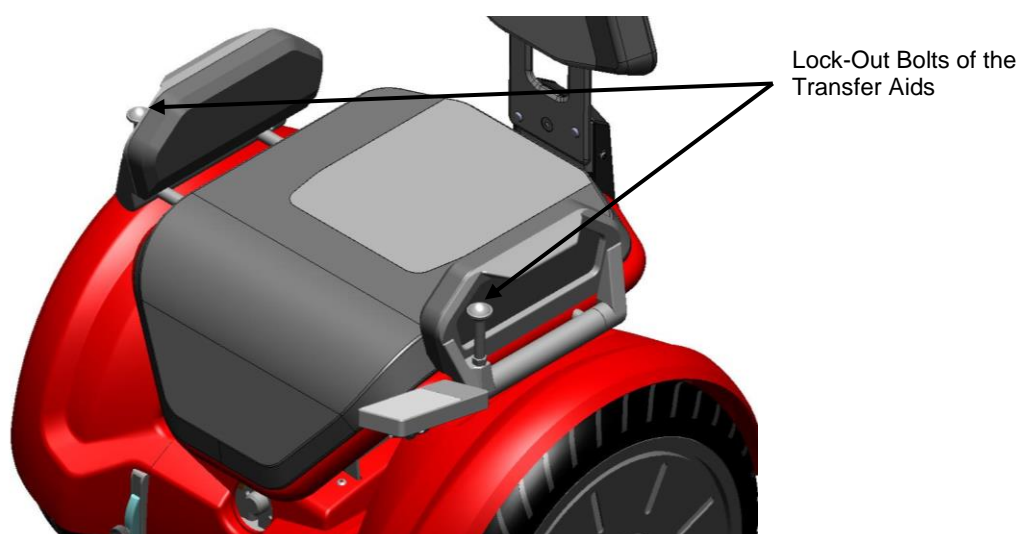
Adjusting the Seat Width:

The Seat width can be adjusted individually to the riders needs.



- Remove the Seat Cushion. This is secured with Velcro® strips on the Seat Plate.
- Loosen the screws of the Transfer Aids with a 4 mm hex-wrench.
- Adjust the Transfer Aids to the desired width.
- Tighten the screws in an appropriate manner.

Folding Aside the Transfer Aids



If you want to fold aside the Transfer Aids, pull the lock-out bolts. As the Transfer Aids are folded aside, they are automatically locked. Unlocking the bolts from the folded down position of the Transfer Aids, the Transfer Aids are brought to their upright position.

Caution:

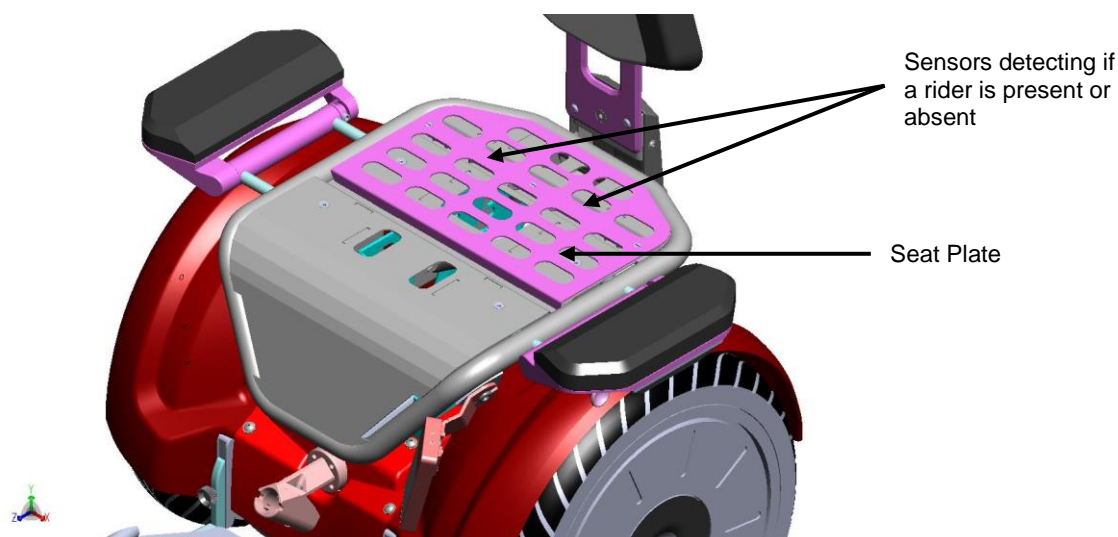


Located beneath the Seat Plate are two sensors detecting the presence or absence of a rider while the F2 is powered on. Ensure the Seat Plate always remains moveable. The Transfer Aids may not clamp the Seat Cushion, which can then result in the impediment the movement of the Seat Plate.

3.2.3. Seat Cushion

The Seat Cushion is attached with Velcro® strips to the Seat Plate. The Seat Cushion of the F2 can be removed for cleaning.

You also have the possibility to exchange the Seat Cushion of the F2 with customary Seat Cushions.



Exchanging the Seat Cushion:

- Remove the Seat Cushion of the F2. The Seat Cushion is attached with Velcro® strips to the Seat Plate.
- Attach Velcro® strips to your cushion at the same position as on the Seat Cushion of the F2.
- Attach the cushion to the Seat Plate.

Caution:

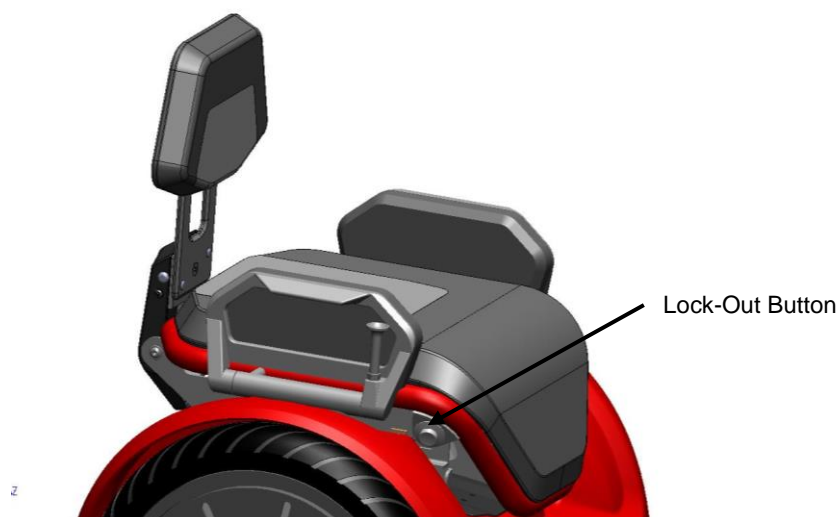


Located beneath the Seat Plate are two sensors detecting the presence or absence of a rider while the F2 is powered on. Ensure the Seat Plate always remains moveable. Ensure that no parts of the Cushion can get into the Seat Plate that can then impede its function.

3.3. Backrest

The Backrest can be tilted. It can be removed for transportation. If you wish to attach your own Backrest (e.g. Jay) on the F2, please ask Freee Mobility for an adapter.

Adjusting the Inclination of the Backrest



- Press the Lock-Out Button.
- While keeping the Button pressed, lean forward for a forward inclination of the Backrest. When tilting your upper body forward, the Backrest automatically moves with your back into the desired position.
- Leaning your upper body backwards with a slight pressure on the Backrest leads to a backward inclination of the Backrest. In this manner, tilt the Backrest into the desired position.
- Release the Lock-Out Button.

Caution:

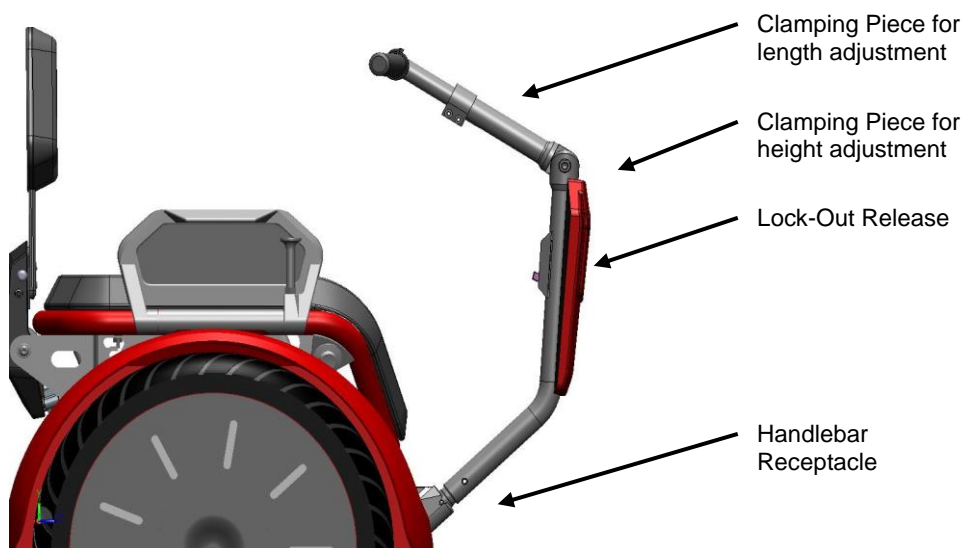


Ensure you are always capable of moving your upper body backwards and that the movement of your upper body is not impeded by the Backrest. The F2 is steered by moving your upper body. Leaning forward leads to a forward motion of the F2, leaning backward leads to a slowing down of the F2. If you are not capable of securely slowing down the F2, you can put yourself and others at risk.

3.4. Handlebar

The Handlebar is removable and can be adjusted in height and length.

Adjusting the Length of the Handlebar:



- Loosen the screws of Clamping Piece for height adjustment with a 3 mm hex-wrench.
- Adjust the Handlebar into the desired position.
- Tighten the screws of the Clamping Piece.

Adjusting the Height of the Handlebar:

- Loosen the screws of the Clamping Piece for height adjustment with a 6 mm hex-wrench.
- Tilt the Handlebar into the desired position.
- Tighten the screws of the Clamping Piece.

Caution:



Ensure the screws of the Clamping Pieces are tight. Ensure the Handlebar is in a fixed position and that it cannot be pivoted or moved.

Removing the Handlebar:

- Push the Lock-Out Release.
- Pull the Handlebar out of the Handlebar Receptacle.
- Lay the Handlebar carefully aside.

Attaching the Handlebar:

- Take the Handlebar and insert it into the Handlebar Receptacle.
- Ensure the Centering Pins are aligned with the Centering.
- Carefully press the Handlebar in the direction of the Handlebar Receptacle until the Handlebar is locked.

Caution:

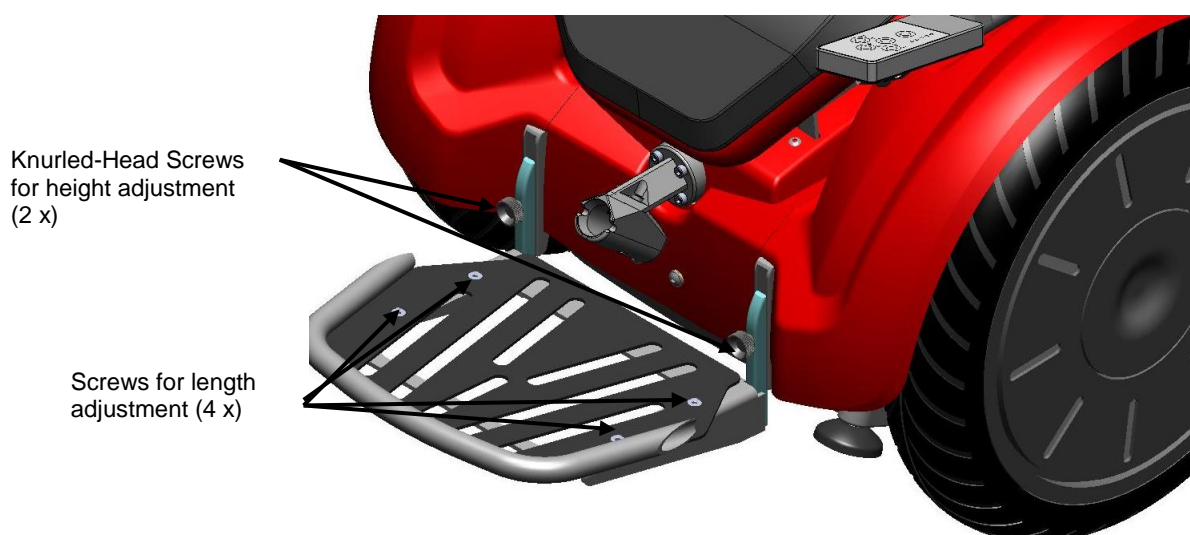
Before every ride with the F2, make sure that the Handlebar is properly locked into the Handlebar Receptacle. If the Handlebar is not locked, this could lead to loss of control of the F2 and to injury and/or damage of yourself and others.

3.5. Footrest

Your feet are secured on the Footrest. It is especially important for wheelchair drivers that their feet cannot slip away to the sides.

The Footrest can be adjusted in the height and in the length.

Adjusting the Height of the Footrest:



- Loosen the knurled-head screws and remove these.
- Adjust the Footrest to the desired position.
- Insert the knurled-head screws and tighten them.
- Ensure the knurled-head screws are tight.

Adjusting the Length of the Footrest:

- Loosen the 4 screws for length adjustment with a 3 mm hex-wrench and remove these.
- Adjust the Footrest to the desired position.
- Insert the screws and tighten them.
- Ensure the screws are tight.

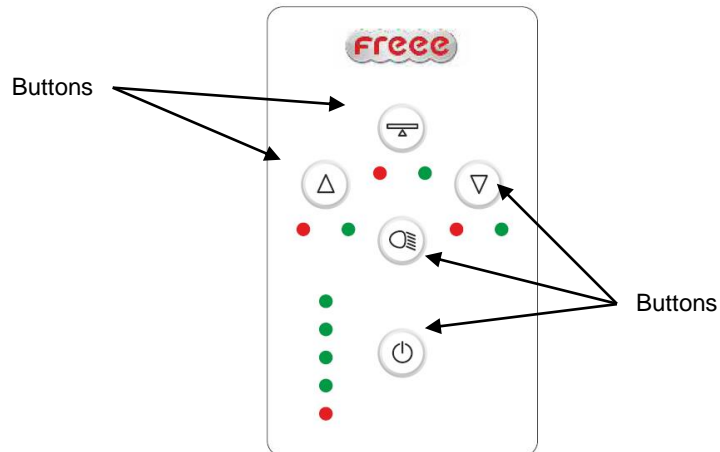
Caution:



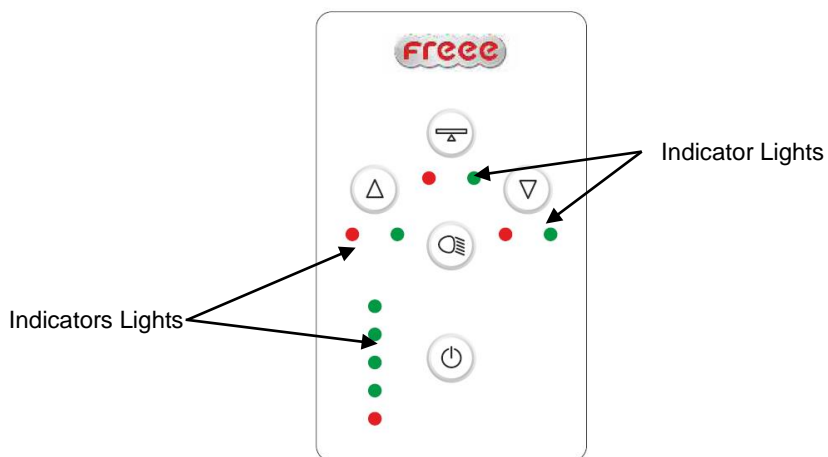
Ensure the screws of the Footrest are tight. If the screws of the Footrest are loose, you can injure yourself when riding the F2.




3.6. User Panel

The User Panel serves for a simple operation of the F2. Five Buttons are located on the User Panel as well as several Indicator Lights.



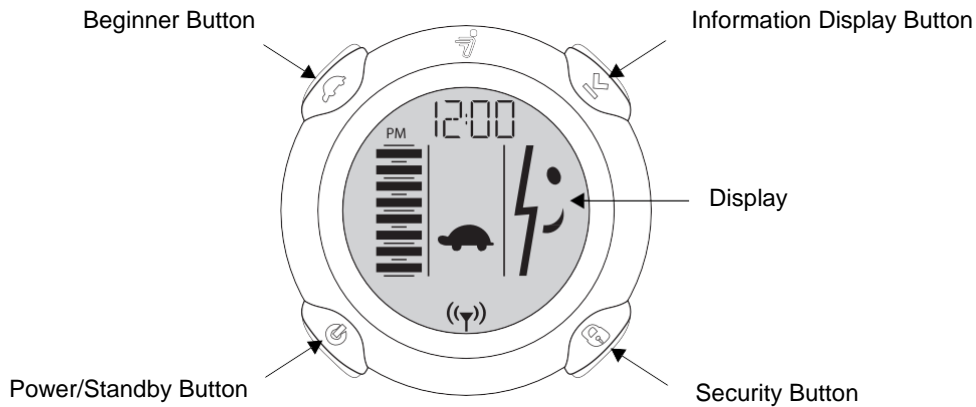
Button Symbols	Description
	Power Button: With this button you can power the F2 on and off.
	Parking Stands Up Button: With this button you can drive the Parking Stands in.
	Parking Stands Down Button: With this button you can drive the Parking Stands out.
	Balance Mode Button: With this button you can activate the Balance Mode of the F2.
	Lights Button: With this button you can turn the Lights of the F2 on and off.



Indicator Lights Symbols	Description
	<p>The Indicator Light illuminates green.</p> <p>The function chosen by pressing the button is successfully realized.</p> <p>The state is stable.</p>
	<p>The Indicator Light illuminates red.</p> <p>The function chosen by pressing the button is not successfully realized.</p> <p>The state is instable.</p>
	<p>Charge Indicator Lights</p> <ul style="list-style-type: none"> - When all Indicators are illuminated in green, the batteries are 100% charged. - When only the red Indicator is illuminated, the batteries are only 20% charged. - When only the red Indicator is blinking, the battery is almost empty. - When all Indicator Lights are blinking, the F2 is plugged into AC power.

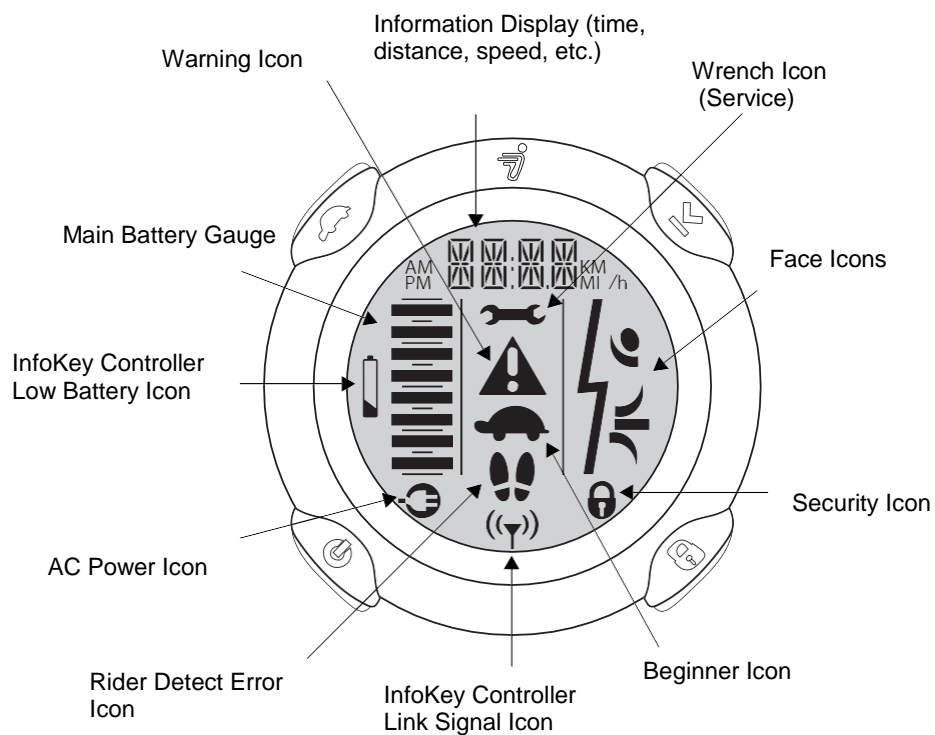
3.7. InfoKey Controller






The InfoKey Controller is used to operate and monitor the motor and the main batteries. The InfoKey Controller has four buttons around the outer edge and a display in the center. The InfoKey Controller must be within 5 m (15 ft.) in order to communicate with the F2.









Button Symbols	Description
	Power/Standby: Allows you to power the F2 on and off and switch from Balance Mode to Standby Mode.
	Beginner: Allows you to toggle the Beginner Setting on and off and illuminate the backlight.
	Information Display: Allows you to scroll through information including time, date, speed, trip distance, and odometer. The button also allows you to set time, speed/distance format, date, and reset the average speed and trip distances.
	Security: Allows you to activate the security function (alarm).

The InfoKey Controller Display provides status information such as messages and warnings, through various icons.



Icon Symbols	Description
<p>Information Display</p> 	<p>Displays time, date, speed, average speed, trip distance, and odometer.</p>
<p>Wrench</p> 	<p>Indicates a system fault that requires service; also displayed during a Safety Shutdown.</p>
<p>Face</p> 	<p>A series of face icons display to indicate status. You may see a happy, sad or neutral face depending on the current status of the F2.</p>
<p>Security</p> 	<p>Indicates the security function is activated.</p>
<p>Beginner</p> 	<p>Indicates Beginner Setting is enabled (top speed and turning sensitivity set at lower rates).</p>

Icon Symbols	Description
InfoKey Controller Link Signal 	Indicates the InfoKey Controller has detected the F2. The InfoKey Controller must be within 5 m (15 ft.) in order to communicate with the F2.
Rider Detect Error 	If this symbol shows up, a serious system failure exists.
AC power 	Indicates the F2 is plugged in to AC power.
InfoKey Controller Low Battery 	Indicates the InfoKey Controller Battery must be replaced. Dispose the batteries considering the rules and regulations applied in your country. CR2430-Button cells are available in electric shops.
Main Battery Gauge 	Indicates the amount of power remaining in the F2 main batteries.
Warning 	Indicates a warning condition caused by factors such as aggressive riding, system operating outside temperature range, etc.

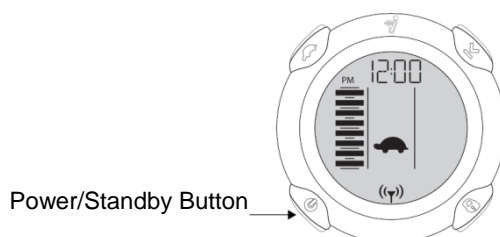
3.7.1. Power/Standby Button Functions

The following functions can be performed using the Power/Standby Button.

Powering the Motor On and Off

To power on the motor:

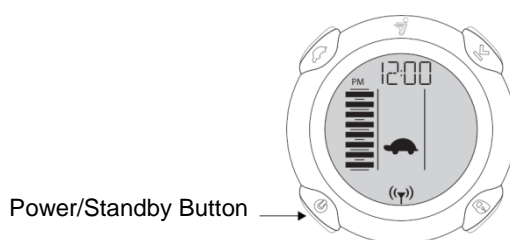
1. Stand no more than 5 m from the F2.
2. To power on, tap the Power/Standby Button.
3. To power off, press the Power/Standby Button for 2 seconds.



The F2 will only power off when it is not in the Balance Mode. This is the case when the Parking Stands of the F2 are driven out or when the driver is not on the seat.

Switching to Standby Mode from Balance Mode

1. Ensure the F2 is powered on and in Balance Mode.
2. To switch to Standby Mode, tap the Power/Standby Button.
3. Confirm that there is no face in the Display.



The F2 only executes this command if the Parking Stands of the F2 are driven out or when the driver is not on the seat.

3.7.2. Beginner Button Functions

The following functions can be performed using the Beginner Button.

Enabling and Disabling the Beginner Setting

1. To disable the Beginner Setting, confirm that the Beginner icon (turtle) is displayed, then tap the Beginner Button. The Beginner icon will no longer show in the display.

- To enable the Beginner Setting, confirm that the Beginner icon is not displayed, then tap the Beginner Button. The Beginner icon will show in the display.



The F2 only executes this command if the Parking Stands of the F2 are driven out or when the driver is not on the seat.

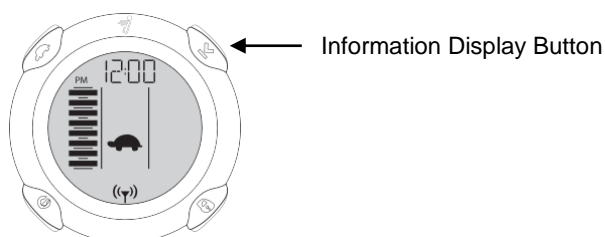
For further information, please see “Unlocking and Locking the Beginner Setting“. A button combination is required.

illuminating the Backlight

- Press and hold the Beginner Button to illuminate the backlight.
- Release the Beginner Button to turn off the backlight.

3.7.3. Information Display Button Functions

The following functions can be performed using the Information Display Button.



Scrolling Through Information

Tap the Information Display Button to scroll through the following information:

- Time
- Date
- Current speed
The speed/distance format flashes.
- Average speed
The speed/distance format does not flash; all trips are averaged until you reset the average speed function.
- Trip distance
The speed/distance format does not flash, and shows total distance traveled.
- Odometer
The speed/distance format does not flash, and shows total distance traveled on the F2.

After replacing the InfoKey Battery, all information will revert to default. Trip distance/average speed will reset to "0". Odometer will not reset.

Setting and Resetting Information

The following procedures are covered in this section:

- Setting time format, hour and minutes
- Setting speed/distance format, date format, year, month, and day
- Resetting average speed
- Resetting trip distance

Setting Time Format, Hour, and Minute

1. Set Time Format (12- or 24-hour Clock)

Tap the Information Display Button until the time displays. Press and hold the Information Display Button until the time format segment flashes either "12" or "24." Select the 12- or 24-hour format by tapping the Security Button until the desired format is displayed. Release the Information Display Button. Tap the Information Display Button to confirm and advance to the hour setting.

2. Set Hour

Select the hour by tapping the Security Button until the desired hour is displayed. Press and hold the Security Button to fast-advance hours. Tap the Information Display Button to confirm and advance to the minute setting.

3. Set Minute

Select the minute by tapping the Security Button until the desired minute is displayed. Press and hold the Security Button to fast-advance minutes. Tap the Information Display Button to confirm the time setting. The time is now set.

Setting Speed/Distance Format, Date Format, Year, Month, and Day

1. Set Speed/Distance Format (MI or KM)

Tap the Information Display Button until you see the month/day or day/month alternating with the year. Press and hold the Information Display Button until the MI/h or KM/h shows in the Display. Release the Information Display Button. Select the MI/h or KM/h format by tapping the Security Button until the desired format is displayed. Tap the Information Display Button to confirm and advance to the date format setting.

2. Set Date Format (MO.DA or DA.MO)

Select the MO.DA (Month. Day) or DA.MO (Day. Month) format by tapping the Security Button until the desired format is displayed. Tap the Information Display Button to confirm and advance to the year setting.

3. Set Year

Select the year by tapping the Security Button until the desired year is displayed. Press and hold the Security Button to fast-advance years. Tap the Information Display Button to confirm and advance to the month setting.

4. Set Month

Select the month by tapping the Security Button until the desired month is displayed. Press and hold the Security Button to fast-advance months. Tap the Information Display Button to confirm and advance to the day setting.

5. Set Day

Select the day by tapping the Security Button until the desired day is displayed. Press and hold the Security Button to fast-advance days.

6. Confirmation

Tap the Information Display Button to confirm speed/distance format, date format, year, month, and day. These are now set.

Resetting Average Speed

Tap the Information Display Button until you see the average speed ("MI/h" or "KM/h" does not flash). Press and hold the Information Display Button until average speed resets to "0.0."

Resetting Trip Distance

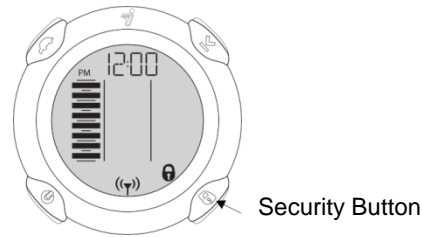
Tap the Information Display Button until you see your trip distance ("MI" or "KM" flashes). Press and hold the Information Display Button until the trip odometer resets to "0.0."

3.7.4. Security Button Functions

The following functions can be performed using the Security Button.

Enabling and Disabling the Security Function

1. To enable the Security Function, tap the Security Button. The Security icon (lock) will show in the Display.
2. To disable the Security Function, tap the Security Button. The Security icon (lock) will no longer show in the Display.



The F2 only executes this command if the Parking Stands of the F2 are driven out or when the driver is not on the seat.

The Security Function includes an alarm and a mechanism that makes it difficult to move your F2 and discourages tampering. The best way to deter theft of your F2 is to keep it in a secure indoor location with the InfoKey Controller stored separately. If you must leave your F2 unattended in a location that is not secure, enable the Security Function and remain within audible range so you can respond, should the alarm sound.

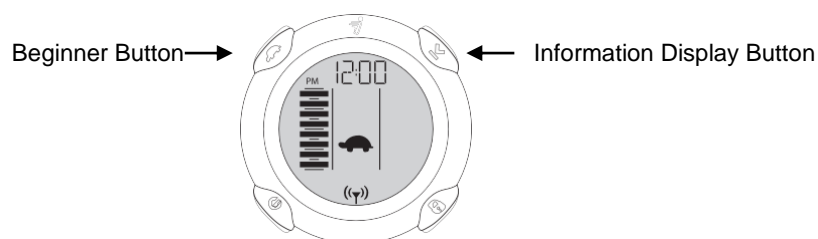
3.7.5. Button Combination Functions

The following functions require you to simultaneously push a combination of InfoKey Controller Buttons.

Unlocking and Locking the Beginner Setting

For your first ride, the F2 is set to operate exclusively with the Beginner Setting enabled. If the Beginner icon (turtle) does not Display, do NOT ride the F2 until you enable the Beginner Setting. The F2 is shipped with the Beginner Setting locked, to encourage new riders to learn using the Beginner Setting.

1. Power on the F2.
2. Press and hold the Beginner Button and the Information Display Button simultaneously for more than 10 seconds. The Information Display Button will flash.



3. Confirm that the Beginner icon (turtle) toggles when the Beginner Button is tapped.

Once the Beginner Setting is unlocked, you can toggle the Beginner Setting on or off by tapping the Beginner Button.

To lock the Beginner Setting:

1. Repeat steps 1 and 2 above.
2. Confirm that the Beginner icon (turtle) is showing on the InfoKey Display.
3. Test the lock by tapping the Beginner Button and confirming that the Beginner icon remains showing the InfoKey Display.

Activating the Training Safety Shutdown

The purpose of the exercise is to introduce the rider to the experience while in a predictable, controlled environment with a spotter. Please read the following steps before executing the exercise.

1. Make sure that the F2 is in Balance Mode and that the Parking Stands are drawn in.
2. The rider should sit still.
3. The spotter should firmly hold the F2, ready to keep it steady and stationary when the Safety Shutdown begins.
4. A third person should hold the InfoKey Controller, and confirm that both the rider and the spotter are ready.
5. The third person may then press and hold both the Information Display Button and the Power/Standby Button simultaneously until the Safety Shutdown initiates.



6. The spotter must continue holding the F2 so it does not move.
7. The rider must stay calm and keep hold of the Handlebar. The Parking Stands automatically drive out during the Safety Shutdown. After 10 seconds, the F2 powers off.

4. Functionality

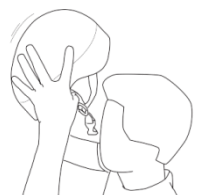
Integrated in the F2 is a technology named Dynamic Stabilization. This technology enables the F2 to balance and to move backwards and forwards.

The F2 moves forwards and backward in response to changes of your center of gravity in relation to the wheels. The systems of the F2 recognize the shift of your center of gravity and move the wheels in such a way, that they will always stay beneath you to ensure a safe ride with your F2.

4.1. Safety

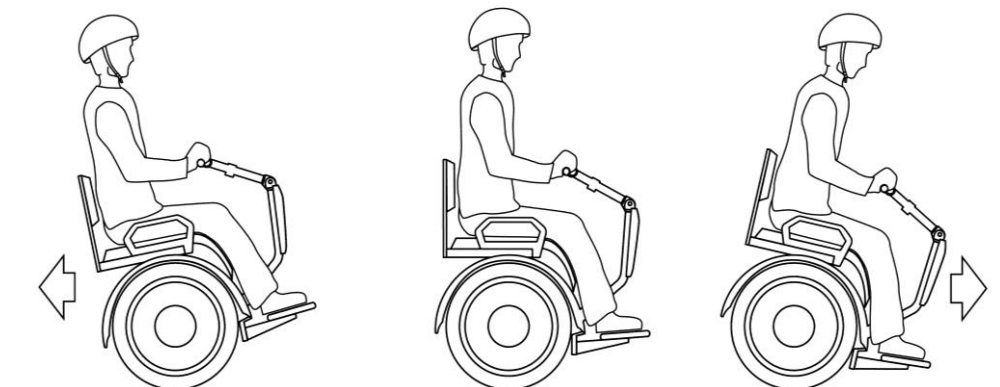


Wear a helmet and fasten and adjust the chin strap in accordance with the helmet manufacturer's instructions, since you are actively taking part in pedestrian and road traffic. Falls or accidents may occur anytime.



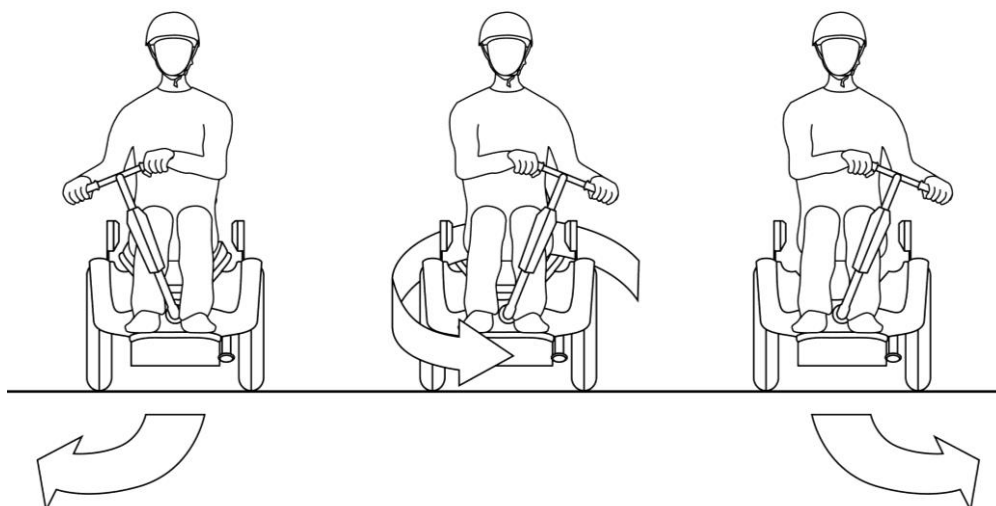
4.2. Moving Forward, Moving Backward and Stopping

The F2 moves forward and backward in response to changes in your position. Leaning forward with your upper body leads to a forward movement of the F2, leaning backward leads to stopping respectively leads to a backward movement of the F2.



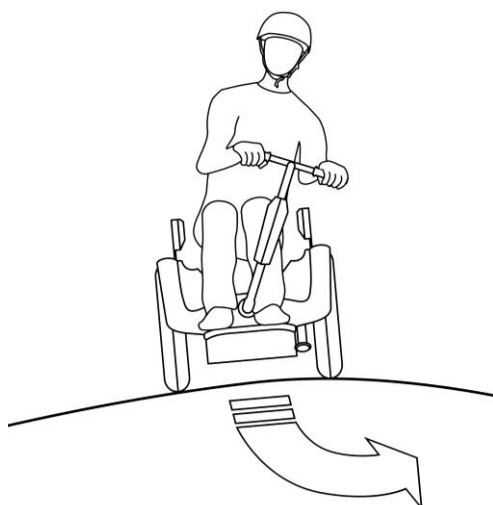
4.3. Turning

The F2 turns in the direction that you lean the Handlebar. You turn left by leaning the Handlebar to the left; you turn right by leaning the Handlebar to the right. To turn in place, slowly pivot the Handlebar to the side in the direction that you want to turn. The F2 will rotate in that direction.

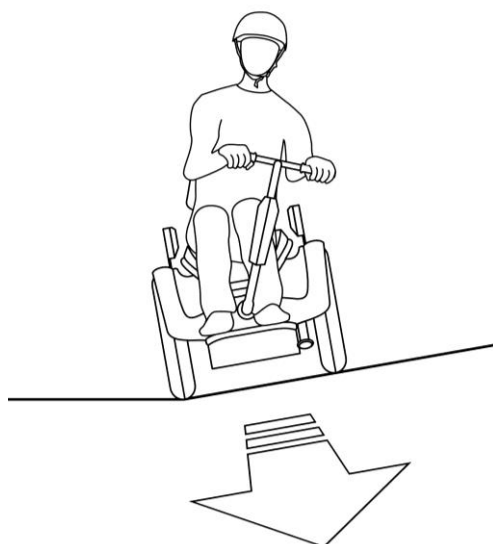


4.4. Turning While Moving, Driving On Slopes

The Dynamic Stabilization technology of the F2 balances front to back but not side-to-side. Never allow a wheel of the F2 to become airborne as the F2 can lose control and you may fall. Make sure, that your upper body is always aligning with the Handlebar. Lean into your turns respectively into the inclination of the slope.



When riding straight on uneven terrain or slopes, keep the Handlebar vertical.



4.5. Parking Stands

The Parking Stands are electrically driven out and in by the push of a Button. The Parking Stands can adjust to an unevenness of the ground of up to 5 cm. Parking on a slope or in a sloping position is not safe. Please only park on horizontal ground. The Parking Stands have a foot with a diameter of about 6 cm. Do not park in muddy surfaces, soft sand or wet fields. The Parking Stands may sink into the ground and would cause the F2 to tilt or fall.

5. Handling

5.1. Powering On the F2

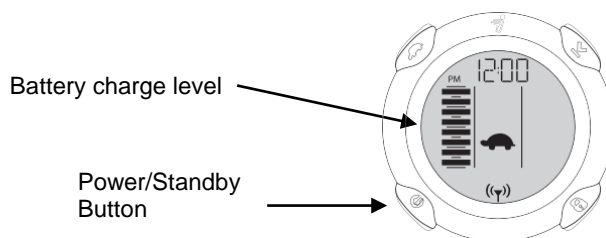
Power on the F2 by pressing the Power Button on the User Panel.



Check the battery charge level.



Power on the motor by pressing the Power/Standby Button on the InfoKey Controller. Check the battery charge level.

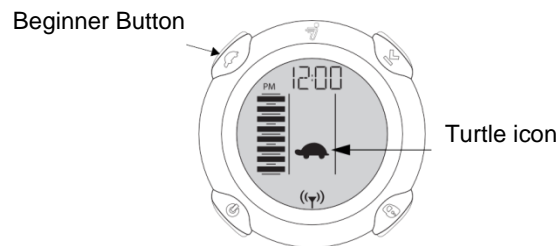


5.2. Confirming the Beginner Setting

Ensure the Beginner Setting is enabled by confirming the Turtle icon is displayed on the InfoKey Controller.

For your first ride, the F2 is set to operate exclusively with the Beginner Setting enabled. If the Turtle icon does not display, do not ride the F2 until you enable the Beginner Setting. For further information see “InfoKey Controller Buttons and Display”.

For additional information on what to do if you do not see the Turtle icon on the InfoKey Controller, see “Unlocking and Locking the Beginner Setting”.



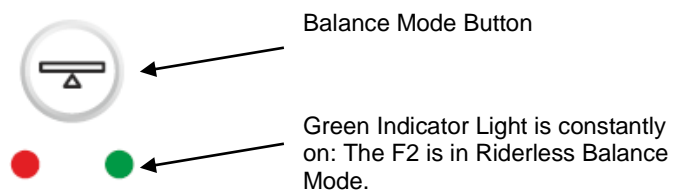
Before you attempt to ride the F2 for the first time, have a spotter at your side to help you with the handling as well as with your transfer onto the F2.

5.3. Balance Mode

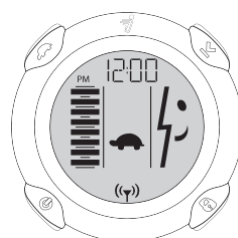
The F2 needs to be in Balance Mode as well as horizontally aligned before you can drive out the Parking Stands. The User Panel shows if the F2 is horizontally aligned.



Hold a grip on the F2's Seat or at the Backrest and tilt the F2 in such a way, that the F2 is horizontally aligned. Make sure the Handlebar is centered. When the Balance Indicator Light blinks green, push the Balance Mode Button on the User Panel. The F2 will now begin to balance on its own.



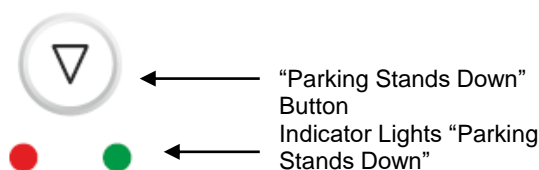
The Display of the InfoKey Controller shows a smiley face.



5.4. Driving Out the Parking Stands

The Parking Stands can only be driven out when the F2 is in Balance Mode. Ensure that the ground is flat and firm. Do not drive out the Parking Stands on uneven ground or slopes.

To drive the Parking Stands out, press the Button “Parking Stands Down“ on the F2 User Panel.

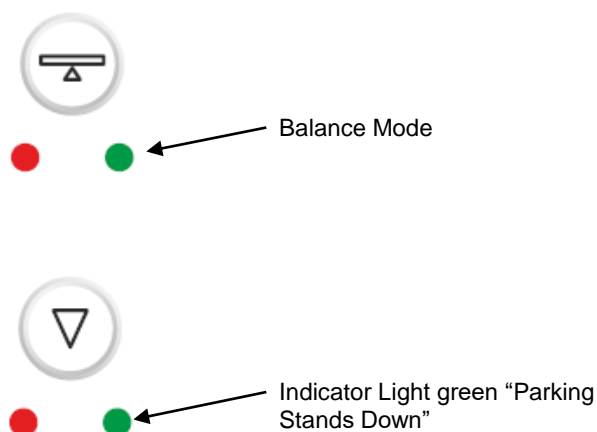


The Parking Stands shut down when they have reached the ground. A minor uneven ground is adjusted to. After successfully driving out the Parking Stands, the green Indicator Light of the Button “Parking Stands Down“ goes on.

If the Control System of the F2 recognizes that one of the Parking Stands has not reached the ground (slope, uneven ground or an obstacle), the Parking Stands will automatically be driven back in. Find a position for the F2 where the ground is more even. Press the Button “Parking Stands Down“ once again.

5.5. Transfer / Mounting the F2

Make sure that the F2 is stable. You can get on the F2 if the Balance Indicator Light is green and the Indicator Light of the “Parking Stands Down“ is also green.



1. Demount the Handlebar. Press the lock-put release of the shaft of the Handlebar to pull the Handlebar out of the Receptacle.
2. Drive your Wheelchair to the side of the F2, where you would like to mount the F2. Pull the Lock-Out of the Transfer Aid and lower it in horizontal position until it automatically lock.s
3. Now you are able to transfer from your Wheelchair to your F2.
4. After the transfer, lock-out the Transfer Aids and flap these vertically until they automatically lock.
5. Take the Handlebar and stick it inside the Receptacle until you feel a “click” which indicates a secure fit of the Handlebar into the Receptacle. Before every ride with F2, make sure that the Handlebar is properly locked into the Handlebar Receptacle.
6. Position yourself in the middle of the F2 Seat. This enables you to easily ride and steer the F2.

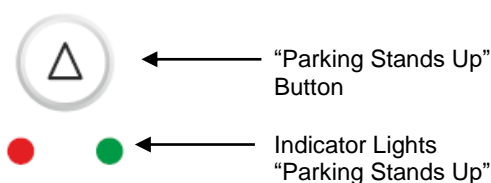
7. Sit upright. Make sure, that your back is able to move freely and that it is not impeded by the Backrest. Press the Lock-Out Button of the Backrest and while keeping the Button pressed, lean backward until your back is able to move freely back and forth.

5.6. Driving In the Parking Stands

Before your first ride with the F2, have a spotter available to assist you. The spotter should stand aside the F2 and slightly lead the F2 by placing the hands on the Handlebar and the Backrest. This is necessary, until you have learned how the F2 controls its balance.

Hold the Handlebar with one hand. Make sure that the Handlebar always stays centered and that it is not tilted to one side.

With the other hand, press the Button “Parking Stands Up” on the User Panel of the F2.



The Parking Stands drive in. The green light indicates, that the Parking Stands are driven in. Should an error occur during riding the F2, the Parking Stands will automatically drive out.

5.7. Riding the F2

Important Advice before Your First Ride:

The spotter has a grip on the F2 by keeping one hand on the Backrest and the other hand on the Handlebar. The rider holds the Handlebar with both hands. With your spotter available to assist you, slowly lean forward and feel the F2 move forward. Then stop leaning forward and feel it slow down and stop. If this balancing exercise does not work, correct your sitting position. If the F2 moves to the front even though you are sitting upright, correct your sitting position slightly to the back. If the F2 moves to the back even though you are sitting upright, correct your sitting position slightly to the front.

Now try to keep the F2 stationary by just slightly moving your upper body to front and back.

If you can balance the F2 without a spotter, practice moving forward and backward a short distance in each direction. Feel the F2 accelerate and slow down.

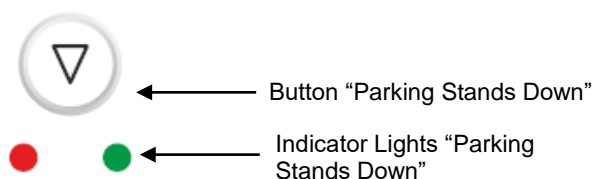
Now practice to turn the F2. Slowly pivot the Handlebar to the left to turn to the left. Pivot the Handlebar to the right to turn to the right.

5.8. Driving Out the Parking Stands

Steer the F2 to the desired position and stop. The Parking Stands can only be driven out when the F2 is not moving.

Ensure that the ground is even and firm. Do not drive out the Parking Stands on an uneven ground or slopes.

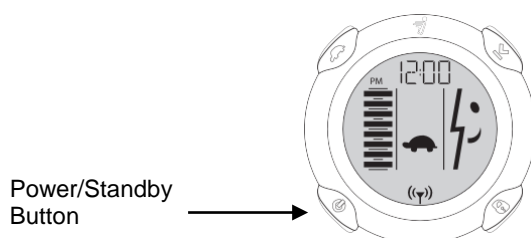
Have a firm grip on the Handlebar. With the other hand, press the Button “Parking Stands Down”.



The Parking Stands are driven out. The Indicator Light is then illuminated green. If an error occurs during this maneuver, the Parking Stands are automatically driven in.

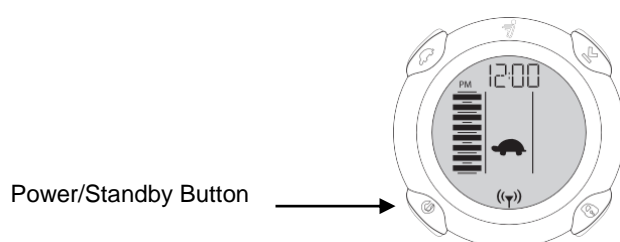
5.9. Powering Off the Motor

After safely parking the F2, the motor can be powered off.



5.10. Powering On the Motor again

While sitting on the F2, you are able to power on the motor as well. Press the Power/Standby Button.



Wait until the green Indicator Light on the F2 user panel constantly illuminates green. If this is the case, the F2 is in Balance Mode.



Now you are able to press the “Parking Stands Up” Button to start riding the F2.

5.11. Transfer / Dismounting

Ride the F2 to the position where you would like to dismount the F2. When the F2 is stationary, press the “Parking Stands Down” Button. As the F2 is now securely stationary, you are able to dismount the F2.

To dismount the F2, remove the Handlebar from the F2 and lower the Transfer Aids.

5.12. Powering Off the F2

After you have dismounted from the F2 you can turn the motor off. Press the Power/Standby Button at the InfoKey Controller.

Now you can power off the F2 by pressing the Power Button of the User Panel.



Note:

The F2 can only be powered off when you have dismounted the F2 and the motor is powered off.

5.13. Loading Your F2 into a Vehicle

Warning:



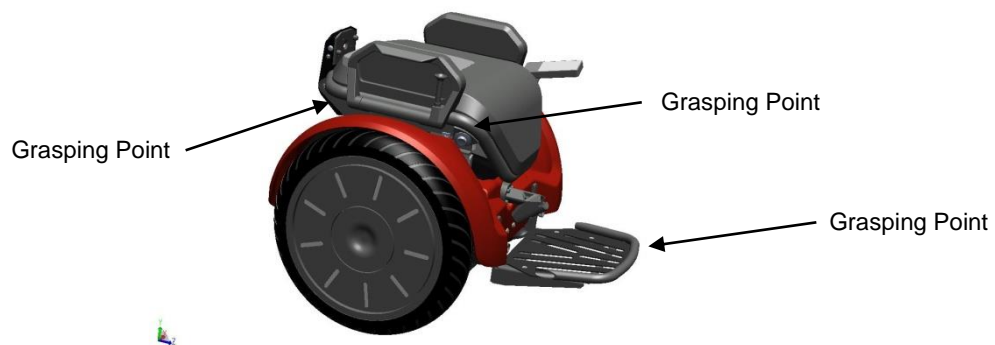
You could harm yourself when loading in the F2. Please observe the following instructions.

Please fasten the F2 with adequate retaining straps in the car or in the transporter. This reduces the risk of severely injuring yourself and other passengers in the vehicle, as the F2 could shift when accelerating or slowing down the vehicle.

The F2 can be loaded into the vehicle with the help of two people. To load the F2, please follow following steps:

1. Park your F2 near the vehicle.
2. Drive out the Parking Stands.
3. Transfer or dismount the F2.

4. Power off the InfoKey Controller.
5. Remove the Handlebar and the Backrest.
6. While keeping a firm grip on the F2, drive in the Parking Stands.
7. Power off the user panel.
8. Two people take a firm grip on the Grasping Points of the F2 and load the F2 into the vehicle.
9. Securely fasten the F2 by using retaining straps.



You also have the possibility to load the F2 with the help of another person and loading ramps into the vehicle:

1. Park your F2 near the vehicle.
2. Drive out the Parking Stands.
3. Transfer or dismount the F2.
4. Remove the Handlebar and the Backrest.
5. Place the loading ramps on the surface of the road and on the edge of the vehicle.
6. Align the loading ramps straight to the vehicle. Ensure that both wheels can move freely on the ramps.
7. While keeping a firm grip on the F2, drive in the Parking Stands.
8. Careful: The F2 is now in the Riderless Balance Mode and can easily be lead with the help of the F2 motor. Have a firm grip on the F2 and do not let go of it.
9. Let another person help you or stand at the side of the loading ramp to lead the F2 with the help of its motor up the loading ramps into the vehicle.
10. Power off the F2 at the InfoKey Controller and the user panel.
11. Securely fasten the F2 by using retaining straps.

5.14. Unloading Your F2 from a Vehicle

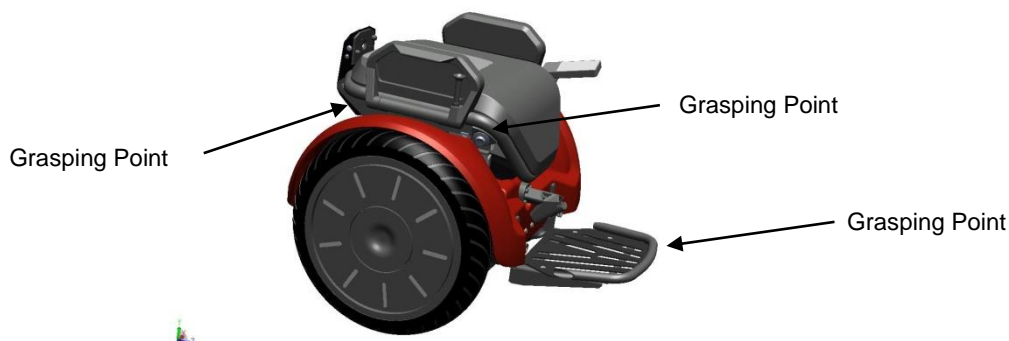
Warning:



You could harm yourself when unloading in the F2.

The F2 can be unloaded from the vehicle with the help of two people. To unload the F2, please follow following steps:

1. Release the retaining straps. Make sure that the F2 cannot shift or roll out of the vehicle when releasing the retaining straps.
2. Two people take firm grip on the Grasping Points of the F2 and unload the F2 from the vehicle onto the surface.
3. Assemble the Backrest.
4. The F2 can now be prepared for riding as described in the previous chapters.



You also have the possibility to unload the F2 with the help of another person and loading ramps:

1. Place the loading ramps on the surface of the road and on the edge of the vehicle.
2. Align the loading ramps straight to the vehicle. Ensure that both wheels can move freely on the ramps.
3. Release the retaining straps. Make sure that the F2 cannot shift or roll out of the vehicle when releasing the retaining straps.
4. Power on the user panel.
5. Power on the InfoKey Controller.

5. Hold the F2 horizontally until the Indicator Light of the Balance Mode on the User Panel of the F2 begins to blink.
6. Press the Button "Balance Mode" of the User Panel of the F2. Keep the F2 in horizontal position. Careful: The F2 is now in the state of the Riderless Balance Mode and can easily be lead by the help of its motors. Have a firm grip on the F2 and do not let it go.
7. Let another person help you or stand at the side of the loading ramp to lead the F2 with the help of its motor down the loading ramps.
8. Lead the F2 to the surface.
9. Press the Button "Parking Stands Down" on the User Panel of the F2.
10. Assemble the Backrest.
11. The F2 can now be prepared for riding as described in the previous chapters.

6. Risk Prevention



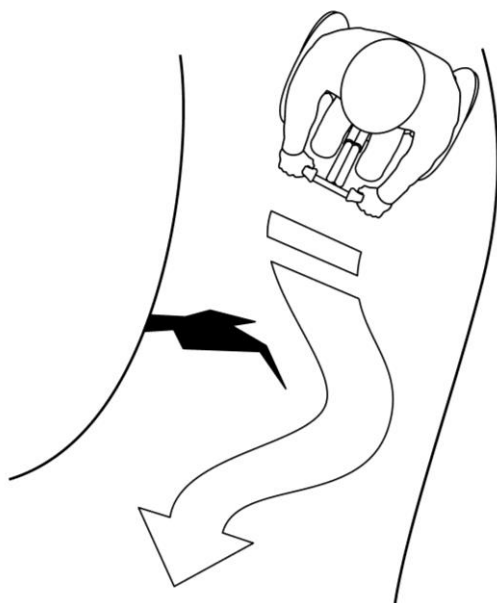
This chapter explains how risks can be reduced when riding the F2. Please follow these considerations to reduce the risk of injury to yourself and others.

6.1. Riding Form

- Be alert – Scan both far ahead and in front of the wheels – your eyes are your best tool for safely avoiding obstacles and slippery surfaces.
- Keep a firm grip on the Handlebar.
- Leave a gap between yourself and the Handlebar. Do not lean over or into the Handlebar. Leaning over or into the Handlebar dramatically increases the risk of collisions, falls, and loss of control.
- Keep seated while riding the F2. If you lift yourself off the Seat, the sensors will register that no weight is on the F2. This will lead to a sudden emergency shut down.
- Practice controlled stopping.
- Keep your body aligned with the Handlebar and lean into turns.
- Point or pivot the Handlebar in the direction you want to travel.
- Make sure the Handlebar is set to the correct height.

6.2. Avoiding Hazards

The F2 is highly maneuverable and allows you to easily navigate around obstacles. However, to prevent the loss of traction, you must always be careful when riding and learn to identify and avoid slippery, icy, or wet surfaces, loose materials (sand/gravel), steep slopes, and obstacles. Stop the F2 in these cases and look for another way around the obstacle.



Avoiding Slips:

The F2 must be able to grip the ground for the machine to stay upright. Slips occur when the tires lose traction, potentially causing loss of control and a fall. Abrupt maneuvers, and riding over slippery surfaces, loose objects and materials, or steep slopes can cause the tires to lose traction.

- Avoid abrupt maneuvers, such as fast stopping or starting.
- Avoid riding on slippery surfaces such as snow, ice, wet floors, wet grass, or any other surface that might cause slipping.
- Avoid riding over loose objects or materials such as small branches, litter, or small stones.
- Use caution when riding over any terrain change such as pavement to grass, or over a threshold or speed bump.
- Avoid riding on steep slopes. Maintain tire contact with the ground.

Avoiding Trips:

Trips occur when the F2 wheels or chassis encounter an obstacle or terrain change that prevents the F2 from moving, bringing it to an abrupt stop and potentially causing a fall.

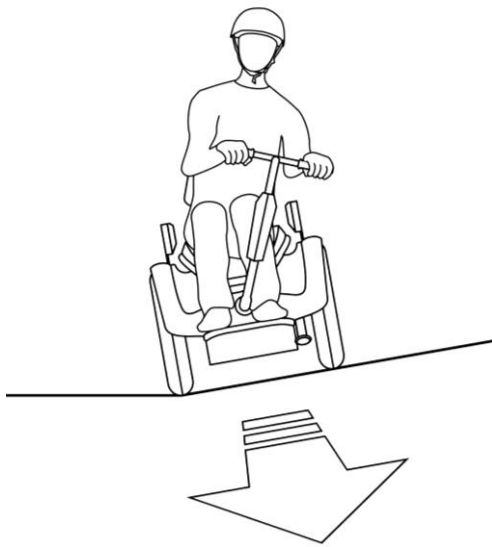
- Avoid holes, curbs, steps, and other obstacles.
- Avoid riding over any surface where the bottom of the F2 may strike any object.
- Use caution when riding over any terrain change such as pavement to grass, or over a threshold or speed bump.



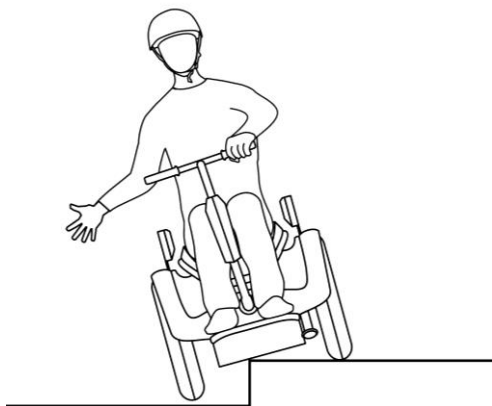
Avoiding Tips:

The F2 balances from back to back but not side-to-side.

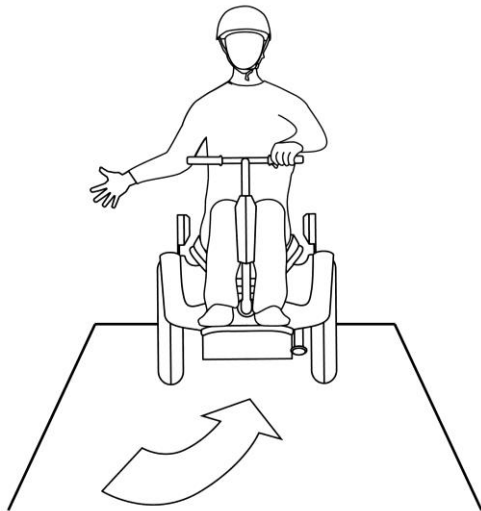
- Avoid riding across steep slopes.
- Lean into turns and lean uphill when riding across gentle slope.
- Keep the Handlebar vertical when riding across a slope.
- Avoid turning on slopes or ramps.
- Never let go of the Handlebar when riding across a slope. The F2 would turn downhill and you could lose your balance.



- Stay centered on narrow sidewalks or elevated paths.
- Make sure that one wheel does not drop off a curb.

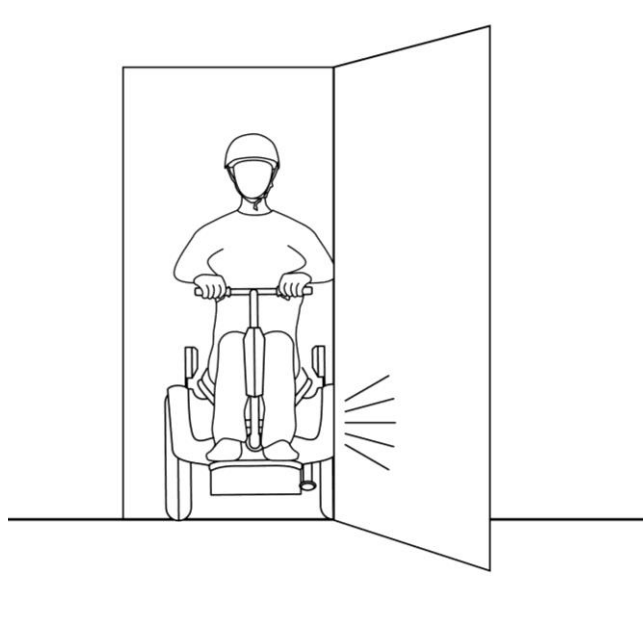


- Avoid turning when maneuvering backward.



Avoiding Obstacles

Be careful of obstacles while riding your F2.



6.3. Practice Riding

You will need to become very familiar with your F2 before you attempt to ride outside of your controlled practice environment. The more you practice, the safer you will be when you move into new places. Remember the following as you practice:

- Use the Beginner Setting and ride in areas free of obstacles and distractions until you are comfortable on your F2. Practice at the Beginner level.

- With practice, you should be able to ride in narrow areas. You should also be able to ride, turn, and stop on a narrow, curving, paved walkway.
- Until you can ride with this precision, do not attempt to ride in any area where you might encounter children, pedestrians, pets, vehicles, bicycles, or other obstacles and potential hazards.
- Your first rides without the Beginner Setting should be in the same secure areas where you learned to ride with the Beginner Setting.
- Use caution when riding in new environments.
- Be careful when riding through a doorway.
- Make sure you leave enough wheel clearance.

6.4. Navigating Terrain

With practice, you can learn to ride over many different types of terrain, provided you avoid slippery surfaces, loose materials, steep slopes, and obstacles. Always proceed slowly over unfamiliar terrain. Never allow the F2 to become airborne, even for a short period of time, because the F2 has no traction when airborne, and you could lose control upon landing.

Terrain Compensation

The F2 is designed to compensate for uneven terrain. When riding straight or uneven terrain, keep the Handlebar vertical. Point the Handlebar in the direction you want to move and allow the F2 to follow the contour of the ground.

6.5. Riding Etiquette

Use proper etiquette when riding your F2.

- Be careful and considerate of others.
- Always ride under control at a speed that is safe for you and those around you.
- Always be prepared to stop.
- Respect pedestrians by always yielding the right of way.
- Avoid startling pedestrians. When approaching from behind, announce yourself and slow down to walking speed when passing. Pass on the left whenever possible. When approaching a pedestrian from the front, stay to the right and slow down.
- In heavy pedestrian traffic, slow down and proceed at the pace of pedestrian traffic. Pass only if there is ample space to do so safely. Do not weave in and out of pedestrian traffic.
- When riding with other F2 riders or bicycle riders, maintain a safe distance, identify hazards and obstacles, and do not ride side-by-side.
- Do not park your F2 in a way that blocks pedestrian traffic.
- Cross roads at designated crosswalks or signaled intersections. Do not jaywalk/ride,
- Only travel on a road when a pedestrian way is not available or when sidewalk use not allowed.
- Learn about and obey laws and regulations.

6.6. Riding Tips and Safety Guidelines



The F2's balancing ability and ease of use may lead you to become overconfident. If you exceed the ability of the F2 to balance, such as by riding over obstacles, uneven terrain, slippery surfaces, loose materials, or steep slopes, you can very quickly lose control, leading to collisions, falls, and injury. As with any other transportation device, using a F2 exposes you to risk of injury. You can reduce the risk by following all the instructions and warnings in this manual, but you cannot eliminate the risk.

- Read this Manual.
- Do not allow any person to use your F2 unless that person has carefully read this Manual.
- Wear a helmet. Whenever you ride your F2 wear a helmet that fits properly with the chin strap in place. Use an approved bicycle or skateboard helmet that protects the back of your head
- Spot new riders carefully. All new riders should use the Beginner Setting. The safety of new riders is your responsibility. Do not allow anyone ride the F2 for the first time unless you are there to hold the Handlebar. Spot new riders until they are comfortable with the basic operation of the F2. Do not let new riders operate the F2 outside of your direct supervision unless they have read this manual.
- Avoid slippery surfaces, loose materials, steep slopes, and obstacles.
- Be especially careful when riding in confined spaces or near obstructions.
- Use caution on slopes. Use caution when ascending, descending, or crossing slopes. Do not attempt to ride across any slopes with loose material or slippery surfaces. When riding across any slope, lean uphill to maintain balance.
- Watch those turns! Always turn slow and with caution. Fast turns can lead to loss of control and falls. Lean into turns.
- Do not take risks. When you encounter a slope, uneven terrain, or other terrain feature with which you are not experienced or that makes you at all concerned about your safety, do not risk riding over it. Search for a possibility to drive around the obstacle.
- Do not wear loose clothing that can catch in the tires and prevent proper steering.
- No passengers. The F2 is for one rider. Do not ride double or carry any passengers. Do not carry a child in your arms or in a child carrier while riding.
- When riding, keep both hands on the Handlebar. Do not attempt to carry any object in your hand(s). Should you need to transport something, please use the accessories recommended by Freee Mobility or a securely attached backpack.
- Never ride on stairs or through revolving doors. Riding stairs is extremely dangerous, as is riding on escalators and through revolving doors.
- Do not dismount a moving F2. Always come to a stop before dismounting.

- Do not ride in the dark. Do not ride the F2 in low visibility conditions without a light. To ride safely, you must be able to clearly see what is in front of you and you must be clearly visible to other.
- Stay relaxed. Ride the F2 in an upright position.
- Be prepared to stop. Be especially careful when approaching or crossing intersections, driveways, corners, doorways, and other areas where you may need to slow down or stop to avoid motor vehicles, bicyclists, or pedestrians.
- Be alert. As with any other transportation device, you must be mentally alert to safely ride a F2. Do not attempt to ride if you are ill or if you cannot comply fully with the instructions and warnings in this Manual. Do not ride under the influence of alcohol or drugs.
- Avoid distractions. Do not use a mobile phone, listen to headphones, or engage in any other activity that might distract you or interfere with your ability to monitor your surroundings while riding.
- Do not ride backward, except to maneuver a few meters. Instead, turn and ride forward. Maneuver backward only when necessary to open a door or back away from an obstacle.
- Avoid turning while maneuvering backward.
- Never restart and ride your F2 after it has indicated an empty battery condition or performed a low battery Safety Shutdown. The F2 may not have enough power to keep you balanced, especially if you demand a lot of power at once. If you restart and continue riding, you risk falling. Also, you may damage your batteries, resulting in reduced battery life and capacity.
- Never let go of a balancing F2. Never let go of your F2 when in Balance Mode, because the F2 will travel some distance on its own before transitioning to Standby Mode. The F2 will not travel very far if you let go of it when it is stopped. If you let go of it when it is moving at any speed, it could travel much farther, risking injury to others and damage to the F2.
- Riding on the road. The F2 is not intended or recommended for primary use on roads. If you must ride on the road, or must cross the road, be extremely careful. Ride as far away from traffic as possible. Allow plenty of time for crossing roads. Check o make sure that riding on the road is allowed by law.
- Carrying cargo. To carry cargo, use a cargo accessory that is recommended by Freee Mobility or a securely attached backpack. Do not hand or place any cargo on the Handlebar. This may interfere with the F2's balancing ability and could cause the F2 to accelerate on its own, risking injury and damage.
- Leave a gap! Leave a gap between yourself and the Handlebar. Do not lean over or into the Handlebar. Leaning over or into the Handlebar dramatically increases the risk of loss of control, collisions, and falls.
- The maximum weight of rider and cargo mentioned in this manual may not be exceeded. If the weight is exceeded, the risk for falls or injury increases. Also, the weight of the driver may not be less than the minimum weight of the rider mentioned in the manual. Should you not have the minimum weight, a safe ride with the F2 is not possible. A certain weight is needed to safely accelerate and safely slow down and stop the F2. Weighing to less also bears the risk that the sensors do not detect a rider.
- The minimum age for a rider is 15 years. The F2 is not suited for riders under the age of 15.
- Regularly check the tire pressure. If the tires have a higher pressure than the recommended pressure stated on the tires, increases risk of loss of control, collisions,

and falls. Lower pressure reduces range and increases risk of damage to the tires and wheels.

- Before you lift the F2, make sure it is powered off. Use proper techniques to safely lift and load the F2. It is recommended that two people work together to lift the F2.
- Always shut down your F2 and unplug the AC Power Cord before performing and maintenance or installing any part or accessory.
- Inspection before riding the F2. Check for loose or damaged parts before riding the F2. The F2 may not be used, if parts are loose or damaged.
- Do not submerge the F2. Do not submerge batteries or the chassis in water. Do not wash the F2 with a power washer or high pressure hose. Avoid getting water into the Charge Port. Always close the Charge Port Cover after charging. Avoid exposure to heavy downpours or extended periods of heavy rain (including during riding, storage, or when transporting).
- Gently clean your F2 with mild detergent, water and a soft cloth.
- Make sure that the Charge Port is dry before you plug in the Power Cord.
- Do not attempt to open the chassis. There are no user-serviceable parts inside. By opening the chassis you risk electric shock injury. Also, you could void your limited warranty, damage your F2, and render it unsafe to use.
- Do not open the Gearboxes nor the control boxes. There are no user-serviceable parts inside. You could damage your F2 and render it unsafe to use.
- The F2 may not be used in explosion-hazardous areas. The F2 is not approved for these areas. Explosion-hazardous areas are surroundings with fire hazard / explosion hazard due to inflammable gas, vapor, fluids, dust or fibers.

6.7. **Rider Weight**

Minimum Rider Weight	45 kg
Maximum Rider Weight (including cargo weight)	100 kg

The weight limits are necessary for two reasons:

- Rider safety
- To reduce the risk of damage to the F2

Dynamic Weight Limits

To keep the F2 and rider upright, the F2 must always have enough power to be able to drive its wheels forward and backward.

Exceeding the weight limits, especially when combined with other variables that require more power, will increase your risk of falling or damaging the F2.

Variables that require more power include:

- Higher payloads (weight of rider and all cargo)
- Steeper slopes

- Bumpier surface conditions
- Higher speeds
- Abrupt maneuvers

The F2 monitors the amount of power being used and will activate safety alerts when it senses excessive power demands. It is important that you learn to anticipate and recognize when the F2 is reaching the limits of performance.

For further information please read chapter “Safety Alerts“.

Minimum Rider Weight

The riders weight must not be less than 45 kg. If the rider is below the minimum rider weight, he/she may not be able to ride safely because he/she cannot shift his/her weight far enough back (behind the centerline of the wheels) to safely slow down and stop. This is especially true when riding downhill. Also, riders below the minimum weight may not sufficiently activate the rider detect system, failing to properly interact with the F2`s balancing system.

Handlebar Cargo

Cargo must not be hung onto the Handlebar.

The rider must be able to move freely at anytime. Cargo interferes with the F2`s balancing ability and causes the F2 to accelerate forward, risking injury and/or damage to the F2.

Structural Weight Limits (Maximum Payload)

Exceeding the maximum weight limit increases the risk of damage tot he F2. Heavier payloads place greater stress on the F2. Several factors affect the loads transmitted to the F2:

- Skill level of the rider
- Payload (weight of rider and all cargo)
- Surface condition (obstacle height, etc.)

Exceeding the rider or cargo weight limit, especially when riding on uneven terrain, could damage the F2.

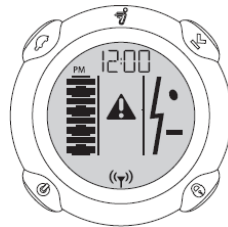
7. Safety Alerts



It is important that you recognize alerts and know how to respond appropriately before you ride your F2. Read and follow all the instructions in the User Manual.

7.1. Speed Limiter

When you approach the maximum allowed speed, the F2's Speed Limiter will push the Handlebar back to slow you down. The Display of the InfoKey Controller shows a "neutral" face.



The F2's Speed Limiter is an alert that you are moving too fast! When the Speed Limiter pushes the Handlebar back, stop leaning forward and slow down. Always leave a gap between yourself and the Handlebar. Once you slow to a speed that the F2 determines is safe, it will resume normal operation.

A too little gap between you and the Handlebar can lead to loss of control, collisions, falls and injury.

Warning:

Conditions that may cause the Speed Limiter to activate and a "neutral" face show on the Display when you are traveling at less than the maximum speed allowed for your operating mode include:

- Riding up or down a steep hill
- Riding on bumpy terrain
- Riding with fewer than three Rider Detect Sensors depressed
- The first few seconds after you drive in the Parking Stands
- Low battery charge
- Batteries that are too hot or too cold
- Riding down a hill with fully charged batteries

7.2. Stick Shake Warning

One of the ways that the F2 notifies you when you are at risk of falling is by shaking the Handlebar and making a growling noise. This is called the Stick Shake Warning. The Stick Shake Warning can occur in conjunction with, or independent of the Speed Limiter and Safety Shutdown alert, depending on your riding situation.

7.2.1. Rider On

If the Stick Shake Warning occurs while riding, slow down. If the Stick Shake Warning persists, come to a stop and drive out the Parking Stands. Do not attempt to ride again until the condition that caused the persistent Stick Shake Warning has been identified and corrected.

If the Stick Shake Warning occurs while you are stopped or stuck, drive out the Parking Stands and do not attempt to ride again until:

- You are clear of all obstacles and slopes.
- You are certain that you did not experience a Safety Shutdown.

For additional information, see “Safety Shutdown“.

When riding, the Stick Shake Warning occurs if you demand too much power from the F2. The Stick Shake Warning can happen when riding on a steep slope, over rough terrain, against an obstacle, or when accelerating or decelerating abruptly.

The Stick Shake Warning also occurs if you ride backward too fast or if you try to mount the F2 when it is not ready to balance.

The Stick Shake Warning is more likely to occur when your batteries are low, cold, heavily used, or poorly maintained because there is less energy available to keep you balanced.

The following table lists possible causes of the Stick Shake Warning and recommended actions to take when the Stick Shake Warning occurs with a rider on the seat.

Possible Causes	Recommended Action
Riding aggressively, accelerating or stopping abruptly.	Ride more smoothly and slowly.
Riding against the Handlebar.	Leave a gap between you and the Handlebar.
Riding on rough terrain or steep slopes.	Ride on smoother, flatter, less demanding terrain
Riding against an obstruction such as a door frame or curb that stops the wheel.	Stop pushing against the obstruction, stop the F2, drive backwards and find a way around the obstacle.
Riding backwards too quickly.	Stop, turn in place, and proceed forward.
Safety Shutdown has begun.	Come to a controlled stop within 10 seconds. The Parking Stands will automatically drive out.

7.2.2. Rider Off

You do not have to be riding the F2 for the Stick Shake Warning to occur.

The Stick Shake Warning occurs if the F2 is moved too quickly while in Riderless Balance Mode. The F2 is in this Mode when no rider is sitting on the Seat.

The Stick Shake Warning also occurs if the wheels spin as you pull the F2 over a curb or up stairs.

7.3. Safety Shutdown

If the F2 detects a fault in any of its redundant systems or a battery is depleted beyond its safe limit, it performs a Safety Shutdown.

When a Safety Shutdown occurs, the F2 automatically reduces its speed, gives the Stick Shake Warning (shakes the Handlebar and makes growling noises), flashes the Balance Indicator lights, emits a warning tone, and the InfoKey Controller displays an unhappy face.



You have approximately 10 seconds from the start of a Safety Shutdown to come to a controlled stop. If you have come to a controlled stop, the Parking Stands automatically drive out. After 10 seconds the F2 immediately shuts down when the wheels reach zero speed.

If a Safety Shutdown occurs:

1. **Stay calm and come to a controlled stop.**
2. **Wait until the Parking Stands drive out automatically.**
3. **Ask a helper to help you off the F2.**



Warning:

Never restart your F2 after it has indicated an empty battery condition. The F2 may not have enough power to keep you balanced. If you restart and continue riding, you risk falling. Also, you risk damaging your batteries, resulting in reduced battery life and capacity. If the problem cannot be solved, please contact Freee Mobility.



Warning:

Theft detection systems, such as the type used in some libraries and retail stores can interfere with the F2's ability to balance and/or cause the F2 to perform a Safety Shutdown. Do not ride within 1.5 meters (5 feet) of any theft detection system.

7.4. Empty Battery Condition

The F2 notifies you of a pending empty battery condition before starting a Safety Shutdown. An unhappy face icon displays on the InfoKey Controller, the F2's speed is limited, and the F2 emits a warning tone. Whenever the F2 notifies you of a pending empty battery condition, come to a controlled stop and safely get off of the F2 before the Safety Shutdown begins.



In some cases, old, cold, heavily used, or poorly maintained batteries may develop a high resistance condition. This can cause a pending empty battery condition to occur even if the batteries were recently charged.

8. Batteries

8.1. Battery Safety



To guarantee your and others safety and to maximize the life time and the power of the batteries, following instructions must be followed.

The batteries may not be used under following conditions:

- if the batteries case is broken
- if the battery emits an unusual odor, smoke, or excessive heat occur
- if substances leak

Avoid contact with any substance seeping from the batteries.

Keep the batteries out of reach of children and pets. Exposure to battery voltage could result in death or serious injury.

Unplug or disconnect the F2 from AC power before removing or attaching batteries or performing any service. Never work on any part of the F2 when it is plugged into AC power. You risk serious bodily injury from electric shock as well as damage to the F2.

The cells within the batteries contain toxic substances. Do not attempt to open the batteries. Do not insert any object into the batteries or use any device to pry at the battery casing. If you insert an object into any of the battery parts or openings you could suffer electric shock, injury, burns, or cause a fire. Attempting to open the battery casing will damage the casing and could release toxic and harmful substances, and will render the pack unusable.

Use only charging devices approved by Freee Mobility and never attempt to bypass or override their charging protection circuits.

Recycle or dispose of batteries with local environmental regulations.

8.2. Technical Specifications of the Battery

Please find the technical specifications of the battery in the chapter “Technical Specifications”.

If you use, charge, or store your F2 batteries outside the limits specified, you may void the limited warranty, damage your batteries, and/or experience reduced range and ineffective battery charging.

8.3. Charging the Batteries

In order to maintain the best performance from your F2 batteries, fully charge the batteries for at least 12 hours once a month, or once every 12 hours of operation – whichever comes first. Charge your batteries only when they are within the specified charging temperature range.

Failure to charge the batteries could result in damage to the batteries. Left unplugged, the batteries could fully discharge over time, causing permanent damage. Use only charging devices approved by Freee Mobility.

Charging times vary depending on the following:

- Amount of charge already stored in the batteries – the lower the battery Charge level is, the longer it will take to complete the charging process
- Temperature of the batteries – batteries that are too hot or too cold may not charge or may take much longer to charge. Batteries charge most effectively when they are close to the recommended charging temperature range.

To charge the batteries:

1. Put your F2 in a clean, dry place, within the recommended charging temperature range.
2. Open the Charge Port on the back of the F2.
3. Verify that the Charge Port, Power Cord, and AC Power outlet are clean, dry, and free of debris.



Do not insert the Power Cord plug if the Charge Port, Power Cord, or AC Power outlet is wet.

4. Plug one end of the Power Cord into a grounded AC outlet (110 V - 230 V; 50 Hz - 60 Hz). The Power Cord should be properly grounded.
5. Plug the other end of the Power Cord into the Charge Port.

The F2's charging system automatically prevents overcharging. Plug your F2 into a ground AC power outlet when it is not in use.

8.4. Unplugging the Power Cord

When you are ready to use the F2, remove the Power Cord, then close the Charge Port Cover as follows:

1. Disconnect the Power Cord from the Charge Port on the F2.
2. Disconnect the Power Cord from the grounded AC outlet.
3. Store the Power Cord.
4. Close the Charge Port Cover.

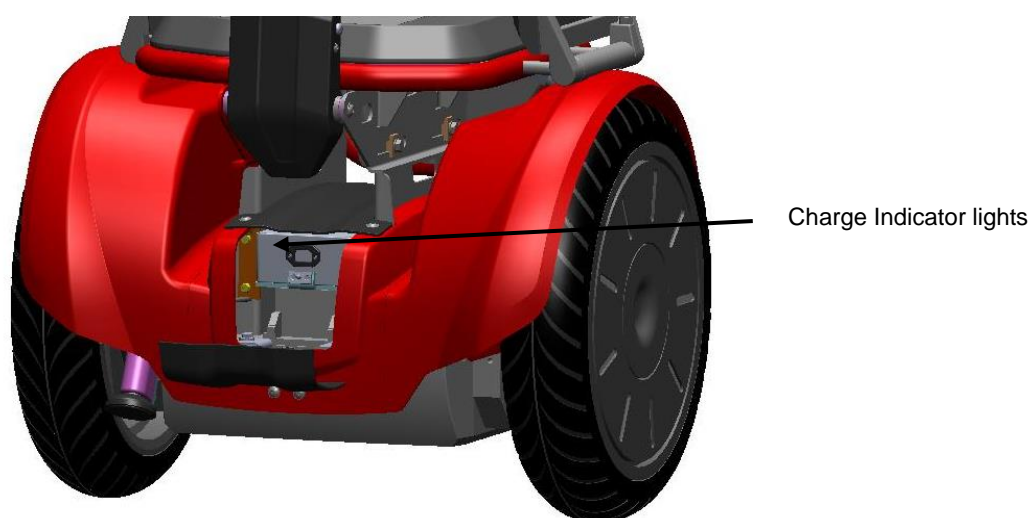
Always keep the Charge Port Cover closed, except when you are charging the F2. Closing the Charge Port prevents water, dirt, dust, and other contaminants from entering and causing damage to the F2.

8.5. Charging Failures

Battery Charge Indicator lights beneath the Seat in the Console of the F2 indicate the charge status of the batteries when the F2 is plugged in.

When the F2 is plugged in and charging, both Battery Charge Indicator lights will be flashing or solid green.

If one or both Battery Charge Indicator lights is red or fails to illuminate, there is a charging problem with the corresponding battery.



The upper Battery Charge Indicator light corresponds to the front Battery and the lower Battery Charge Indicator light corresponds to the rear Battery. The Battery Charge Indicator lights provide independent information regarding whether each battery is charging,

If a failure is detected during charging, all charging will stop. Depending on the nature of the failure, a solid red Charge Indicator light displays or the Charge Indicator light will be off.

If either or both Charge Indicator lights are red or off, check the following:

1. If the Charge Indicator lights are off, check that AC power is present, and ensure the Power Cord is fully seated in the Charge Port.

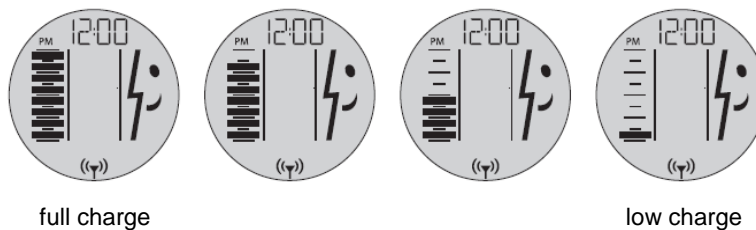
2. If AC power is present and the Charge Indicator lights are either red or off, unplug the power cord, then remove and reseal the batteries.
3. If these actions fail to resolve the problem, contact the Freee Mobility service.

8.6. Regenerative Braking

The F2 has a regenerative braking system that charges the batteries when descending a hill or slowing down. When you ride down a hill, you may notice an increase in the battery charge level. If your batteries are already completely full at the top of a hill, when you descend, you may feel the Speed Limiter engage to keep the F2 from overcharging its batteries.

8.7. Reading the Battery Charge Level Display

The horizontal bars on the left side of the InfoKey Controller display indicate the levels of the charge in the batteries. The following figures show how the Battery Gauge on the InfoKey Controller changes as the battery is depleted.



The more charge the batteries contain, the more horizontal bars are shown. If the battery charge level is very low, the F2 will notify you of a pending empty battery condition prior to initiating Safety Shutdown.

Warning:



Do not ride your F2 if there is inadequate charge in the batteries (indicated by the unhappy face icon on the InfoKey controller and no dark horizontal lines on the Battery Charge display). Carefully monitor your F2 Battery Gauge and be prepared to demount your F2 if the battery charge becomes completely depleted.



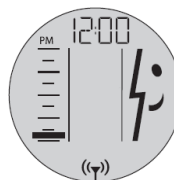
Surface Charge (Partial Charge)

Whenever you do not fully charge the F2's batteries, surface charge or partial charge may affect the accuracy of the battery charge level display, causing it to show a higher charge level than actually exists. After you power on, check the battery charge level display and then ride for at least three or four minutes and check the battery charge level display again. If the battery charge level display shows rapid charge depletion during this time, the batteries have received only a surface charge. If necessary, plug the F2 back in and recharge.

Recalibrating the Battery Charge Level Display

The F2 shows the battery charge level in the InfoKey Controller. The display may be inaccurate after long periods of storage, or during initial use. To recalibrate the display, follow these steps:

1. Fully charge the batteries for 12 hours.
2. Discharge the batteries (through normal use of the F2) until the bottom bar in the Display is blinking, representing approximately 10 percent battery charge remaining. The InfoKey displays the following:



Do not ride the F2 to full depletion of the batteries.

3. Leave your F2 in a safe, secure location, powered on, Parking Stands down, until the battery charge is fully depleted, and your F2 powers down. Depleting your F2 batteries from the bottom bar to empty could take several hours.
4. Fully recharge the batteries for a minimum of 12 hours, after which the Battery Charge Level Display will be recalibrated.

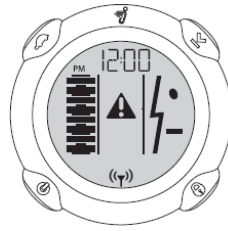
8.8. How Temperatur Affects Performance

The batteries are usually significantly warmer than the air temperature due to heating that occurs as electricity is delivered from them (while riding) and to them (while charging).

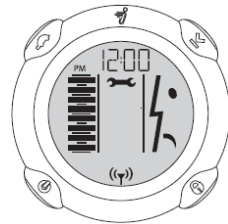
Riding in Hot or Cold Temperatures

The batteries will run at the highest efficiency when you operate them nearest the center of the recommended operating temperature range. If the batteries on your F2 become too hot or too cold while riding, the F2 may activate a safety alert.

Speed Limiter or Stick Shake Warning



Safety Shutdown



As with all batteries, less energy is available at low battery temperatures. You may not be able to travel the same distance when the batteries are cold as when the batteries are nearer to room temperature.

Charging in Hot or Cold Temperatures

Your batteries should be within the recommended charging temperature range prior to and during charging. For the recommended battery charging temperature range, see “Temperature Ranges”.

The batteries will charge most efficiently when they are nearest the center of the recommended charging temperature range. If your batteries are too hot or too cold, they may take longer to charge, or they may not charge at all.

If you are concerned that the batteries may be too cold or overheated during charging, see “Charging Failures”.

8.9. Maximizing Travelling Distance

You can find the maximum travelling distance in “Technical Specifications”. The maximum distance travelled of the F2 depends on many factors, such as:

- **Terrain:** In flat and even terrain the travelling distance of the F2 is bigger than in hilly and rough terrain.
- **Speed and Driving Behavior:** You can maximize the travelling distance of the F2 while driving constantly and moderate pace. Accelerating and stopping often decreases the travelling distance.
- **Tire Pressure:** The maximum travelling distance decreases when the tire pressure is below the recommended value.
- **Rider Weight and Cargo:** Less rider weight and less cargo are beneficial for maximizing the travelling distance.
- **Temperature:** If the F2 is stored, charged and driven in the recommended temperature range, the travelling distance is improved. Cold temperatures have a negative effect on the travelling distance.

- **Battery State:** Charged and proper maintained batteries have a positive effect on the travelling distance whereas old, cold and overstrained batteries reduce the maximum travelling distance.
- **Wind:** Tail wind increases the travelling distance whereas head wind decreases the maximum travelling distance.

8.10. Replacing Batteries

Your F2 is powered by two rechargeable Lo-ion batteries. With normal usage and proper maintenance, batteries should last the equivalent of 600 to 1000 full charges. As your batteries near the end of their useful life, they need more frequent charging and your F2's range will be reduced. To order replacement, contact the Freee Customer Support.

Replacing Batteries in Pairs

Whenever you need to replace a battery, consider replacing both batteries, and always use pairs of batteries with the same chemistry. Replacing only one battery will not necessarily increase the performance or range of your F2, because the F2 is designed to operate only at the level allowed by the lower-energy battery. Redundancy is a critical safety feature built into the F2 that also applies to the batteries. Therefore, you should replace batteries in pairs (except for the unusual situation where a battery is replaced because of damage or defect and the other battery is relatively new).

8.11. Battery Transportation and Shipping

If you are transporting your F2, protect the batteries to avoid damage. Do not expose the batteries to direct heat or moisture, and avoid heavy vibration during transportation.



Do not use or transport a battery if the casing breaks open, leaks any substance, becomes excessively hot, or if you detect an unusual odor.

Do not handle a damaged or leaking battery unless you are wearing disposable rubber gloves, eye protection, and are in a well-ventilated area. Dispose of the rubber gloves and damaged battery properly in accordance with regulations governing of toxic materials.

Li-ion batteries are regulated as “Hazardous Materials”. You must comply with local, federal, and individual country laws when transporting F2 Li-ion batteries.



For transportation and shipping of devices with integrated Li-ion batteries, following regulations apply:

Shipping by road / by rail:	allowed
Shipping by sea:	allowed
Shipping by airfreight:	not allowed

If you need to ship the Li-ion batteries or the F2 with installed Li-ion batteries by air, please contact the airline for details.

9. Maintaining and Servicing your F2

The F2 is designed to be virtually maintenance free. Make sure it is clean, all parts are installed functioning properly, batteries are charged, and tires are properly inflated prior to riding. Never open the chassis, or gearboxes. These are not user-serviceable parts.



Warning:

Before you perform any of the following procedures, verify that the F2 is powered off and unplugged. It is not safe to perform these procedures while the F2 is powered on or charging.

Do not attempt to open the chassis. There are no user-serviceable parts inside. By opening the chassis you risk electric shock injury. Also, you could void your limited warranty, damage your F2, and render it unsafe to use.

Do not open the Gearboxes. There are no user-serviceable parts inside the Gearboxes. You could damage your F2 and render it unsafe to use.

Replacing Parts:

If a part breaks or needs replacement, contact the Freee Mobility service. Use only parts and fasteners provided by Freee Mobility.

Torque Specifications:

Adhere to torque specifications when tightening fasteners. Over-tightening or under-tightening fasteners can result in damage or malfunction.

Accessories:

If you are interested in adding accessories to your F2, please contact Freee Mobility service.

9.1. Cleaning Your F2

To clean your F2:

1. Make sure the F2 is unplugged and powered off.
2. Always close the Charge Port Cover after charging and prior to cleaning.
3. Gently clean your F2 with mild detergent, water and a soft cloth.
4. The covers of the Seat, Backrest and Transfer Aids are washable. Gently clean these with mild detergent, water and a soft cloth.



Avoiding Excessive Water Impact

Do not submerge the F2. It can cause permanent damage. Following rules apply:

- Do not submerge the batteries or powerbase in water.
- Avoid exposure to heavy downpours or extended periods of heavy rain (including riding, storage, or when transporting).
- The F2 must not be cleaned with a high-pressure cleaner or high pressure hoses. These devices could make water run into parts of the F2 that need to stay dry. Water must never get into the Charging Port.
- The tires must not be cleaned with special cleaning agents. Such products may impair the traction of the wheels.

9.2. Storing Your F2

Fully charge your batteries for at least 12 hours once a month, or after every 12 hours of operation – whichever comes first. Charge your batteries only when they are within the specified charging temperature range.

Store your F2 (and its batteries) indoors, in a place that is free of moisture and humidity, with an ambient temperature. Even if you will not be using your F2 for an extended period of time, you should leave it plugged into AC power. Otherwise the batteries could fully discharge over time, causing permanent damage.

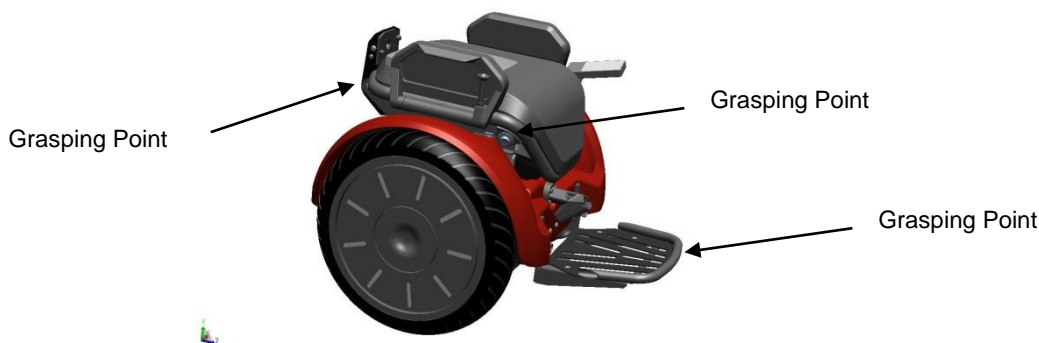
Store your F2 in the recommended temperature range to ensure optimal battery life and performance.

Failure to charge the batteries could result in permanent damage to them. Left unplugged, the batteries could fully discharge over time, causing permanent damage.

9.3. Lifting Your F2

The F2 should be lifted by two people working together. To lift the F2:

1. Make sure the F2 is unplugged and powered off.
2. Remove the Handlebar and the Backrest.



3. Take a grip on the robust grasping points of the Frame and Footrest.

Warning:



Watch your fingers! The F2 must not be lifted by the wheels, the fender or the firs. Hands and fingers could be get caught in between the tires and the fender.

9.4. Checking the Wheels

For a secure and efficient ride with your F2, please regularly check wheels and tires, especially then, when they have recently undergone service.

The wheels are checked das followed:

1. Make sure the F2 is unplugged and powered off.
2. Check for wheel wobble by grasping the wheel and attempt to move it side-to-side. The wheel should not move laterally. If you detect wheel wobble, check the wheel nutS and tighten if necessary.

9.5. Tire Inflation Pressure

The tires on the F2 provide suspension and traction. Both functions are affected by tire inflation pressure.

Be sure to:

1. Make sure the F2 is unplugged and powered off.
2. Regularly check the tire pressure. An inadequate tire pressure affects the operating range.
3. Should the pressure of the tires not correspond to the recommended tire pressure stated in "Technical Specifications", the tires need to be inflated.
4. Check that both tires are inflated equally and are free of debris or contaminates.
5. Regularly check the tires for damage.

6. Regularly check the tire profile.

The tire pressure is checked as followed:

1. Make sure the F2 is unplugged and powered off.
2. Tip the F2 onto its side on a smooth, clean surface. Make sure the tire to be checked is on the ground.
3. Rotate the chassis until the valve stem on the inside of the wheel becomes visible.
4. Check the tire inflation pressure.
5. Inflate the tires to the pressure described in “Technical Specifications“.

Attention:

Overinflating tires can decrease suspension and increase loss of traction which can lead to loss of control as well as collisions and falls. Under inflating tires decreases operating range and the tires / wheels can be subject to damage. Unequal tire pressure leads to that the F2 pulls to the side of the tire with less pressure.

9.6. Removing and Installing the Batteries

Tool Required: 3 mm hex wrench



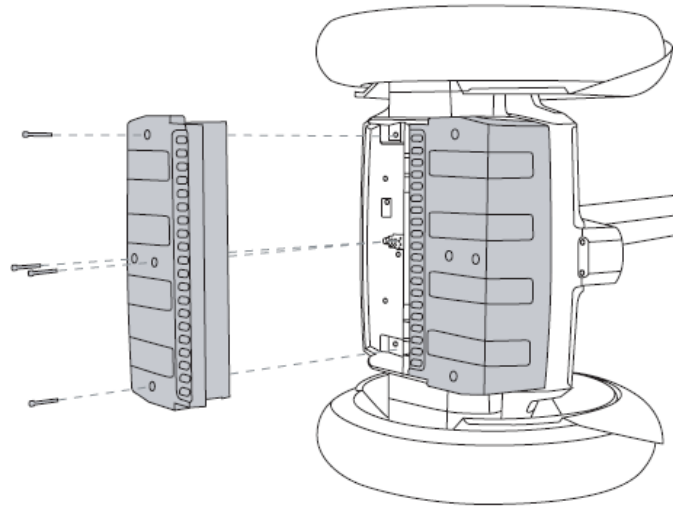
Warning:

Make sure the F2 is unplugged and powered off. The following procedure is dangerous when the F2 is powered on or is charging.

The batteries contain hazardous substances and must not be opened at any time. The batteries must not be used if and substance leaks, becomes excessively hot, or if you detect an unusual odor. Do not handle a damaged or leaking battery unless you are wearing disposable rubber gloves, eye protection, and are in a well-ventilated area. Dispose of the rubber gloves and damaged battery properly in accordance with regulations governing of toxic materials.

To remove the batteries:

1. Make sure the F2 is unplugged and powered off.
2. Tip the F2 onto its side so the wheel lies flat against a smooth, clean surface.
3. Using a 3 mm hex wrench, remove the battery fasteners (4 per battery).
4. Pull the batteries straight off the chassis.



To install the batteries:

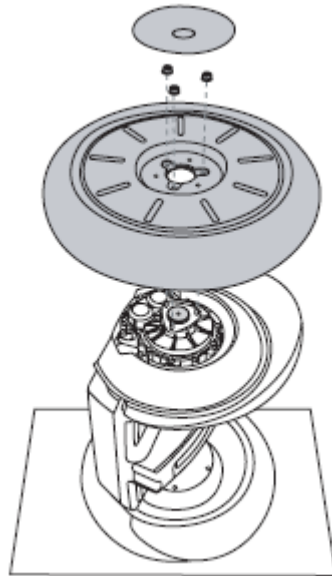
1. Make sure the F2 is unplugged and powered off.
2. Install one of the batteries to the chassis, with the curved edge of the battery to the outside of the chassis.
3. Ensure the battery is aligned straight against the chassis edge trim, and there are no uneven gaps.
4. Install the two center fasteners first; do not tighten.
5. Install the two outer fasteners; do not tighten.
6. Torque the center fasteners first, then the outer fasteners to 1.0 Nm.
7. Verify the battery is aligned straight against the chassis edge trim, and there are no uneven gaps.
8. Repeat Steps 1-7 for the second battery.

9.7. Removing and Installing a Wheel

Tools Required: 13 mm socket wrench

To remove the wheel:

1. Make sure the F2 is unplugged and powered off.
2. Tip the F2 on its side so the wheel you want to remove is facing up, and the bottom wheel rests against a smooth, clean surface.
3. Remove the wheel cap by pressing down on the outside edge and lifting the opposite edge with a plastic wedge or screwdriver.
4. Remove the three wheel nuts with a 13 mm socket wrench. Hold the wheel to keep it from rotating.
5. Lift off the wheel.
6. Clean all debris from the wheel's mounting surfaces.



To install the wheel:

1. Make sure the F2 is unplugged and powered off.
2. Ensure the F2 is on its side.
3. Ensure the wheel mounting surfaces are clean of debris.
4. Place the wheel over the three threaded posts.
5. Hold the wheel to prevent it from rotating.
6. Install the three wheel nuts to the threaded posts and tighten to 35 Nm.
7. Replace the wheel cap by aligning the three plastic fittings on the underside of the wheel cap with the three holes in the wheel.
8. Press down the wheel cap until it snaps into place.

9.8. Replacing the InfoKey Controller Battery

Tool Required: Coin or flathead screwdriver.

To replace or reset the InfoKey Controller battery:

1. Make sure the F2 is unplugged and powered off.
2. Remove the InfoKey Controller from the Dock and unscrew the InfoKey Controller Dock Adapter.
3. Using a coin or Flathead screwdriver, unscrew the back cover of the InfoKey Controller.
4. Remove the InfoKey Controller battery.
5. If you are replacing the battery, verify the new battery is type Cr2430. These batteries are available at electronics stores. Dispose of used batteries properly in accordance with local regulations governing disposal of toxic materials.
6. Insert the InfoKey Controller battery with the positive (+) side facing up.
7. Screw on the InfoKey Controller back cover.
8. Screw on the InfoKey Controller Dock Adapter.

A backup battery for the InfoKey Controller should always be on hand, as the F2 cannot be used without a functioning InfoKey Controller.

10. Troubleshooting the F2

You can troubleshoot certain problems with your F2 before contacting an authorized Freee dealer or the Freee Mobility service. This chapter provides lists of problems and recommended actions.



Always shut down your F2 and unplug the AC Power Cord before performing any maintenance or installing any part or accessory.

10.1. Power on / Power off

10.1.1. The Motor will not power on

The motor will not power on when you press the InfoKey Controller Power/Standby button. Review the following service procedures described in previous chapters prior to troubleshooting this problem:

- “Remove the Batteries”
- “Install the Batteries”
- “Replace the InfoKey Controller battery”

Recommended Action:

1. Make sure your F2`s batteries are charged.
2. Make sure you are standing with the InoKey Controller no further than 5 m (15 ft.) from your F2.
3. Tap the InfoKey Controller Power/Standby button and verify that the Link Signal icon appears in the InfoKey display.
4. See “InfoKey Controller” for further information.
5. If no Link Signal icon is displayed or the display is blank (no information displayed), remove and reseat the InfoKey battery.
6. Tap the InfoKey Controler Power/Standby button. If the InfoKey display is blank, replace the InfoKey Controller battery.
7. If the Warning icon appears in the InfoKey Display when attempting to power on, see “Startup Error Conditions”.
8. If your F2 will still not power on, remove both F2 batteries and then reattach them.

10.1.2. The F2 will not power on

The Indicator Lights of the User Panel are not illuminated after trying to power on the F2.

1. Plug the F2 into AC power.
2. Power on the F2.
3. The Charge Indicator Lights blink and show the charge level of the F2 batteries.
4. Charge the batteries for about 4 hours.
5. Unplug the F2.

10.1.3. Power Cord plugged in, no Operation possible

The F2 recognizes if a power cord is plugged into the F2 or not. In the case of a plugged-in power cord, the Battery Indicator Lights on the user panel blink.


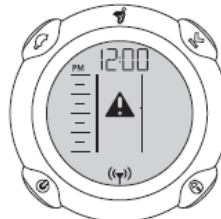
The red Indicator Light is always illuminated.


The green Indicator Lights blink in correspondence to the charge level of the battery. If the battery is fully charged, all the green Indicator Lights blink.

The F2 cannot be operated as long as the power cord is plugged in. Plug out the power cord before you ride the F2.

10.1.4. Startup Error Conditions

If you attempt to power on the F2 and an error condition occurs that prevents the F2 from powering on and entering Standby Mode, the icons shown in the following table appear on the InfoKey Controller.

Display Icon	Description	Recommended Action
	The F2 is plugged in.	Unplug the Power Cord. If the F2 has powered off, power on again.
	The Charge in the F2 batteries is too low to operate safely.	Charge the batteries, then attempt to power on.

	<p>A Rider Detect sensor is on at startup.</p>	<p>Power off the F2. Try to power on the F2 again.</p>
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10.1.5. The F2 will not power off

Please check the following:

No Rider is Sitting on the F2:

- Press the button “Balance Mode” on the User Panel of the F2.
- Try to shut down the motor.

A Rider is Sitting on the F2:

- Drive out the Parking Stands.
- Try to shut down the motor.

InfoKey`s Battery is Depleted:

- Press and hold the Power/Standby button on the InfoKey Controller for two seconds to try to shut down the motor.

If the motor still will not power down, check that your InfoKey Controller battery is not fully depleted and that the InfoKey Controller is not damaged. If necessary, replace or reseal the InfoKey Controller battery.

10.1.6. The Motor will not power off

Please carefully read through the chapter “Handling”. The F2 will only power off, if the following preconditions are set:

- The InfoKey Controller must be powered off.
- The rider must not be seated.

Park the F2 and transfer. Power off the InfoKey Controller before powering off the user panel.

10.1.7. The F2 will not enter Balance Mode

Review the following previous chapters prior to troubleshooting this problem:

- “Balance Mode”
- “Riding the F2”

1. Confirm power has been turned on.
2. Confirm that the F2 is in lateral and even position.

3. Make sure that the Handlebar is centered.
4. If the F2 still will not enter Balance Mode, identify the error icon on the InfoKey Controller, and attempt to clear the fault following the recommended actions.

10.2. Chassis

10.2.1. Wheel is loose and/or wobbles

The wheel is not secure. It appears to be loose and wobbles. Review the following service procedures prior to troubleshooting this problem:

- “Removing and Installing a Wheel”

Recommended Actions:

1. Remove the wheel by pressing down on the outside edge, and lifting the opposite outer edge with your fingers or a plastic wedge.
2. Remove the wheel.
3. Check the wheel as well as the mounting flange for dirt.
4. Clean the wheel and the flange.
5. Assemble the wheel and tighten the wheel nuts.

10.2.2. F2 pulls to one Side when riding

The F2 pulls to one side when you are riding. Review the service procedure “Checking Tire Inflation Pressure” prior to troubleshooting the problem:

Recommended Action:

1. Check to make sure tire inflation pressure is equal, and set to recommended specifications in both tires.
2. If either tire is not set at the proper tire inflation pressure, inflate the tire or tires until both are equal and correct pressure
3. Make sure to keep the Handlebar in centered when riding straight.

10.2.3. Tire is flat or will not hold Air

Review the service procedure “Checking Tire Inflation Pressure” prior to troubleshooting this problem.

Recommended Action:

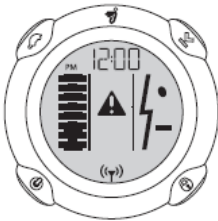
1. Check the tire damage. If the tire is damaged, contact Freee Mobility Service.
2. If there is no visible tire damage, check to make sure the tire valve stem core is tight. Tighten the valve stem if necessary.

3. Inflate the tire and check for leaks. If the tire goes flat or will not maintain inflation pressure, contact Freee Mobility Service.
4. If the tube leaks, you can order a new tube by contacting Freee Mobility Service. The tube must only be replaced by a technician in for example a repair shop or garage. Pay attention that the wheel rims are not damaged when replacing the tube.

10.3. Reduced Performance Level

When the F2 is operating at reduced performance levels due to an error condition, the icon shown in the following table will appear on the InfoKey Controller.

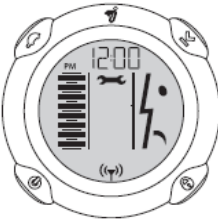
Please also pay attention to the chapter “Speed Limiter”.

Display Icon	Description	Recommended Action
	The F2 is operating at reduced performance levels, with the speed limit lowered, due to a temporary condition.	The F2's Speed Limiter is an alert that you are moving too fast. When the Speed Limiter pushes the Handlebar back, stop leaning forward and slow down. Always leave a gap between yourself and the Handlebar. Once you slow to a speed that the F2 determines is safe, it will resume normal operation and riding position.

10.4. System Faults while riding

During normal riding, if the F2 detects a fault in any of its redundant subsystems, the icon shown in the following table will appear on the InfoKey Controller.

When such a fault is detected, the F2 performs a Safety Shutdown. When a Safety Shutdown occurs, the F2 automatically reduces its speed, gives the Stick Shake Warning (shakes the Handlebar and makes a growling sound), flashes the Balance Indicator lights, and displays the wrench icon on the InfoKey. As the F2 slows, it emits an audio alert.


Display Icon	Description	Recommended Action
	The system has detected an error in its redundant subsystems and performs a Safety Shutdown.	The rider has approximately 10 seconds from the start of a Safety Shutdown to come to a controlled stop. After 10 seconds, the F2 will immediately shut down when the wheels reach zero speed.

In case of a Safety Shutdown, stay calm and bring the F2 to a controlled stop. The Parking Stands automatically drive out after the F2 has come to a stop.

All Indicator Lights on the User Panel start blinking.

10.5. Pitch or Roll Angle exceeded

If the F2 shuts down because a forward/backward (pitch) or side (roll) tilt limit was exceeded, or no Rider Detect sensors were depressed while the F2 was moving at speed, the icon shown in the following table will appear on the InfoKey Controller. The F2 is programmed to shut down in these situations because the rider is not in controller of the F2.

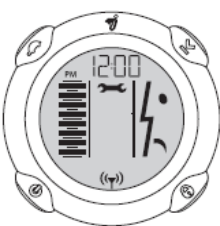
Display Icon	Description	Recommended Action
	<p>The F2 shuts down because a forward/backward (pitch), or side tilt limit was exceeded, or not Rider Detect sensors were depressed while the F2 was moving at speed.</p>	<p>Check the F2 for damage. If there is no damage, turn the power on by tapping the Power/Standby button on the InfoKey Controller.</p>

In case of a Safety Shutdown, stay calm and bring the F2 to a controlled stop. The Parking Stands automatically drive out after the F2 has come to a stop.

All Indicator Lights on the User Panel start blinking.

10.6. System Faults

If the F2 detects a system fault, the icon shown in the following table will appear on the InfoKey Controller.

Display Icon	Description	Recommended Action
	<p>There is a fault in the chassis or batteries.</p>	<ul style="list-style-type: none"> - Power on the motor. - If the same icon appears, confirm both F2 batteries are installed correctly. - If the batteries are installed correctly, remove and reseal both batteries. - If the same icon appears, plug in the F2 and verify both Battery Charge Indicator lights are green. Charge the F2 overnight.

10.7. Parking Stands

10.7.1. The Parking Stands will not drive out

Please carefully read through the chapter “Handing”. The Parking Stands can only be driven out, when the F2 is powered on and in the Balance Mode.

1. Power on the InfoKey Controller.
2. Keep the F2 lateral and the Handlebar in centered until the Indicator Lights of the Balance Mode blink.
3. Press the Button “Balance Mode”. The F2 will now switch to the Balance Mode.
4. Wait until the Indicator Lights of the Balance Mode illuminate green.
5. Now drive out the Parking Stands.

10.7.2. The Parking Stands will not drive in

The Parking Stands can be driven in anytime no rider is seated on the F2.

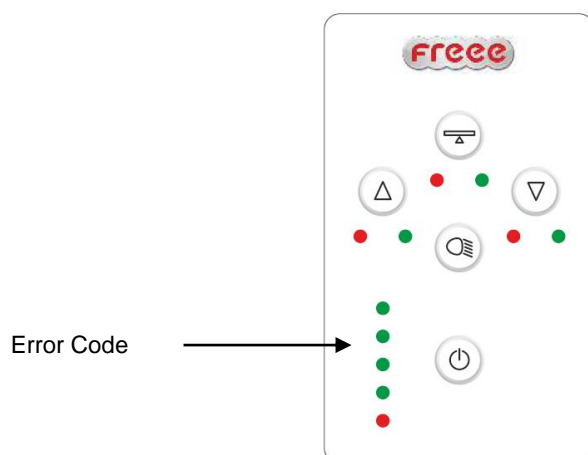
Following preconditions must be set if a rider is seated on the F2:

1. Beneath the Seat Cushion and the Seat Plate are two sensors that detect if a rider is seated on the F2 or not. Both sensors must be activated. The sensors can only be activated, if these are not impeded by an object. Make sure, that the Seat Plate always remains moveable. No loose parts should be underneath the Seat Cushion.
2. Power on the InfoKey Controller.
3. Wait until the Indicator Lights of the Balance Mode start to blink.
4. Press the Button “Balance Mode”. The F2 will now switch to the Balance Mode.
5. Wait until the Indicator Lights of the Balance Mode illuminate green.
6. Now drive in the Parking Stands.

10.8. F2 Error Overview



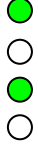
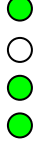
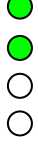
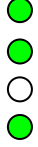
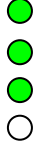
Should an error occur, either caused by a technical defect or a maloperation of the rider, an error code is displayed on the User Panel.

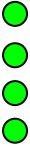
The red Indicator Light of the Battery Gauge on the User Panel will blink. The error code is displayed with the green Indicator Lights of the Battery Gauge.




10.9. Table of Errors

Green Battery Indicator Lights	Description	Recommended Action
1 <input type="radio"/> <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/>	Rear Parking Stand cannot be driven out.	Motor or cable are defect. Please contact Freee Mobility Customer Support.
2 <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>	Rear Parking Stand cannot find ground contact or Parking Stand hit an obstacle or the ground sensor is defect.	Please check your parking position. The Parking Stand cannot park in a dell. Check the ground sensor (see error 4).
3 <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/>	Rear Parking Stand cannot be driven in.	Motor or cable are defect. Please contact Freee Mobility Customer Support.
4 <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>	Rear Parking Stand is driven in. At the same time the ground sensor is actuated.	Move the Parking Stand up and down. Once the Parking Stand has arrived in the top position, the error code is shown. Once the Parking Stand has arrived the bottom, the error is deleted. Should the error still occur, please contact Freee Mobility Customer Support.
5 <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/> <input checked="" type="radio"/>	Front Parking Stand cannot be driven out.	Motor or cable are defect. Please contact Freee Mobility Customer Support.
6 <input type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input type="radio"/>	Front Parking Stand cannot find ground contact Or the Parking Stand hit an obstacle or the ground sensor is defect.	Please check your parking position. The Parking Stand cannot park in a dell. Check the ground sensor (see error 4).
7 <input type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/> <input checked="" type="radio"/>	Front Parking Stand cannot be driven in.	Motor or cable are defect. Please contact Freee Mobility Customer Support.

Green Battery Indicator Lights	Description	Recommended Action
8 	Front Parking Stand is driven in. At the same time the ground sensor is actuated.	Move the Parking Stand up and down. Once the Parking Stand has arrived in the top position, the error code is shown. Once the Parking Stand has arrived the bottom, the error is deleted. Should the error still occur, please contact Freee Mobility Customer Support.
9 	When powering on the F2, both sensors beneath the Seat Cushion are activated. Due to a security check, the sensors must not be activated when powering on the F2.	Brace the Transfer Aids and lift yourself up, so that the sensors beneath the Seat are relieved. Should this maneuver not be possible, dismount and mount the F2 once again.
10 	When powering on the F2, one sensor (1) beneath the Seat Cushion is activated. Due to a security check, the sensors must not be activated when powering on the F2.	See error 9.
11 	When powering on the F2, one sensor (2) beneath the Seat Cushion is activated. Due to a security check, the sensors must not be activated when powering on the F2.	See error 9.
12 	When driving fast, both sensors underneath the Seat detect that no rider is present (rider lost). The rider cannot control the F2 anymore.	The F2 initiates an automatic power off. As arriving zero speed, the Parking Stands are automatically driven out.
13 	More than one button is pressed on the User Panel.	Press only one button at a time. Should the error still occur, please contact Freee Mobility Customer Support.
14 	The F2 did not switch to Balance Mode when driving in the Parking Stands. The F2 did not switch to the Balance Mode when the Balance Mode Button is pressed The F2 did not switch off Balance Mode when driving out the Parking stands	Should the error occur again, please contact Freee Mobility Customer Support.

Green Battery Indicator Lights	Description	Recommended Action
15 	The speed of the F2 is too high to be able to drive out the Parking Stands of the F2.	Stop the F2 and balance the F2. Then drive out the Parking Stands.

10.9.1. Table of Errors 2

Display „Parking Stands up“	Description	Recommended Action
17  Red blinking	The sensor to measure the speed (Hall sensor) is defective. Or broken cable	Should the error still occur, please contact Freee Mobility Customer Support..

11. Technical Specifications

F2 Specifications	
Net Weight	74 kg
Minimum Rider Weight	45 kg
Maximum Rider Weight	100 kg
Maximum Total Weight	174 kg
Maximum Speed	10 km/h or 20 km/h depending on registration
Ground Clearance (Unloaded)	8,5 cm
Total Length with Footrest	81 – 89 cm
Height to Upper Edge of Seat	57 – 65 cm
Width	68 cm
Sound Pressure Level	< 70 dB (A)
Tire Standard	100 / 65 - 14
Tire Pressure Standard	15 – 30 PSI / 103 – 210 kPa
Tire Terrain	130 / 90 - 10

Motor Battery Specifications	
Battery Type	Lithium-Ion 92 cells
Maximum Distance Travelled (fully loaded)	up to 38 km (23.5 miles) depending on manner of driving
Charging Voltage	110 – 230 V, 50 / 60 Hz
Charging Time Before First Use	12 hours
Recharging Time From Empty	~ 8 hours
Operating Temperature Range	0 °C to 50

Charging Temperature Range	10 °C to 50 °C
Storage and Transport Temperature Range	-20 °C to 50 °C
Capacity and Voltage	5.8 Ah, 73.6 V
Dimensions	35.7 x 19 x 8.2 cm
Battery Weight (Pair)	10.3 kg

Parking Stand Battery Specifications

Battery Type	Lithium-Ion 4 cells
Number of Cycle Driving In and Out Parking Stands	~ 150
Capacity and Voltage	2.5 Ah, 13.2 V

Info Key Controller Battery Specifications

Battery Type	CR2430 coin cell
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12. EC Declaration of Conformity

Manufacturer: Freee Mobility GmbH
Wasenstr. 90
73660 Urbach, Germany

The Manufacturer declares in sole responsibility that the product:

Model:	Freee F2
Net Weight:	74 kg
Voltage Motors:	73V =
Voltage Parking Stands :	13 V =
Function:	Electric Wheelchair

is in conformity with the following standards or other normative documents:

2006/42/EC	Machinery Directive
2004/108/EC	Electromagnetic Compatibility Directive
2006/95/EC	Low Voltage Directive

Applied Standards:

EN 15194:2012-02	EN 60204-1
EN 12100:2010	EN 12184:2009
EN 61000-4-2:2009-12	EN 61000-4-3:2011-04
EN 61000-4-4:2013-04	EN 61000-4-5:2007-06
EN 61000-4-6:2014-08	EN 61000-4-29:2001-10
EN 61000-6-2:2011-06	EN 61000-6-3:2011-09
EN 55022/2011-12	EN 60335-1/-2-29 8

Authorized Representative:

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Quality Manager
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Urbach, Aug. 03, 2015

Andreas Fried
(President)