

Empulse® F35™

Supplier: This manual must be given to the user of this device.
User: Before using this device read this entire manual and save for future reference.

Owner's Manual

Empulse® F35™

Distribuidor: Este manual debe entregarse al usuario de este dispositivo.

Usuario: Antes de usar este dispositivo, lea este manual completo y guárdelo para referencia futura.

Cada una de las sillas se envía con un manual de instrucciones en inglés. El manual en español y francés está disponible en formato PDF en nuestra página en Internet: www.SunriseMedical.com. Ingrese a la página del producto específico para descargar el manual, o comuníquese con el proveedor autorizado de Sunrise Medical.

Manual de
Instrucciones

Empulse® F35™

Au Fournisseur: Ce manuel doit être remis à l'utilisateur de ce dispositif.

Utilisateur: Avant d'utiliser cet appareil, lisez l'intégralité de ce manuel et enregistrez pour référence future.

Chaque fauteuil est livré avec un manuel d'instructions en anglais. Les versions en espagnol et en français sont à votre disposition en format PDF sur le site : www.SunriseMedical.com. Veuillez vous rendre à la page de votre produit pour télécharger le manuel dans la langue souhaitée, ou contactez un fournisseur agréé Sunrise Medical.

Manuel
d'instructions

P/N 259900 Rev. B

Instructions for Use

EMPULSE® F35®

General Manual

SUNRISE MEDICAL LISTENS

Thank you for choosing an Empulse F35. We want to hear your questions or comments about this manual, the safety and reliability of your device, and the service you receive from your Sunrise dealer. Please feel free to write or call us at the address and telephone number below:

SUNRISE MEDICAL (US) LLC
 Customer Service Department
 12002 Volunteer Blvd.
 Mount Juliet, TN 37122, USA
 Tel: 1-800-333-4000



www.SunriseMedical.com/register

Be sure to register your device and let us know if you change your address. This will allow us to keep you up to date with information about safety, new products, and options to increase your use and enjoyment of the Empulse F35.

You can also register your product at:
www.SunriseMedical.com/register

FOR ANSWERS TO YOUR QUESTIONS

Your Sunrise Medical authorized dealer knows your device best and can answer most of your questions about device safety, use, and maintenance.

For future reference, please fill in the following:

Dealer: _____

Address: _____

Telephone: _____

Serial #: _____ Date/Purchased: _____

ADDITIONAL INFORMATION YOU SHOULD KNOW

No component of this device was made with Natural Rubber Latex.

**DISPOSAL AND RECYCLING INFORMATION**

When this product reaches the end of its life, please take it to an approved collection or recycling point designated by your local or state government. This product is manufactured using a variety of materials. Your product should not be disposed of as ordinary household waste. You should dispose of your product properly, according to local laws and regulations. Most materials that are used in the construction of this product are fully recyclable.

The separate collection and recycling of your product at the time of disposal will help conserve natural resources and ensure that it is disposed in a manner that protects the environment.

Ensure you are the legal owner of the product prior to arranging for the product disposal in accordance with the above recommendations.

II. TABLE OF CONTENTS

I. INTRODUCTION.....	2	6.3 Selecting the direction of travel.....	16
II. TABLE OF CONTENTS.....	3	6.4 Controlling the speed (throttle).....	17
1.0 USER INFORMATION.....	3	6.5 Selecting the drive levels.....	17
1.1 This user manual.....	3	6.6 Cruise control.....	17
1.2 For further information.....	3	6.7 Functions of the display	18
1.3 Symbols used in this manual.....	3	7.0 BATTERY AND CHARGER.....	21
2.0 SAFETY.....	4	7.1 Introduction	21
2.1 Symbols and labels used on the product.....	4	7.2 Safety instructions for the battery and charger	21
2.2 Safety: Temperature.....	4	7.3 Waking up the battery	22
2.3 Safety: Moving parts	4	7.4 Charging the battery	22
2.4 Safety: Electromagnetic radiation.....	5	7.5 Troubleshooting.....	22
2.5 Safety: Choking hazard.....	5	8.0 TRANSPORTATION AND SECURITY	23
2.6 Safety: Lifting the device	5	8.1 Transport in a car	23
2.7 Safety: Pinch point.....	5	8.2 Foldable handlebar for transport and storage:.....	23
3.0 INTENDED USE OF THE DEVICE.....	6	8.3 Security	23
3.1 Area of application: Introduction.....	6	8.4 Transport in an airplane.....	23
3.2 Area of Application: Attendants	7	8.5 Switching the battery off for transportation in a passenger airplane.....	23
3.3 Area of Application: User	8	9.0 MAINTENANCE AND CLEANING.....	24
3.4 Area of application: The user environment.....	9	9.1 Fitting and repairing the tire.....	24
4.0 SETTING UP THE DEVICE	10	9.2 Regular maintenance	24
4.1 Introduction	10	9.3 Electrical system.....	24
4.2 Fitting to the wheelchair for the first time.....	10	9.4 Cleaning	25
4.3 Fitting the pull device.....	11	9.5 Storage	25
5.0 DOCKING AND DE-DOCKING OF THE PULL DEVICE		10.0 TROUBLESHOOTING.....	25
BY THE USER	14	10.1 Troubleshooting.....	25
5.1 Docking.....	14	11.0 SUNRISE LIMITED WARRANTY	26
5.2 De-Docking.....	15	12.0 TECHNICAL SPECIFICATIONS	27
6.0 OPERATION.....	16		
6.1 Brakes	16		
6.2 Switching on and off.....	16		

1.0 USER INFORMATION

Congratulations on choosing a Sunrise Medical Empulse® F35™. Our high-quality mobility products are designed to enhance your independence and make your everyday life easier.

As a part of our ongoing product improvement initiative, Sunrise Medical reserves the right to change specifications and design without notice. Further, not all features and options offered are compatible with all configurations of the F35.

All dimensions are approximate and may be subject to change. The intended lifetime of the F35 is five (5) years. Please DO NOT use or fit any third-party components to the F35 unless they are officially approved by Sunrise Medical.

1.1 This user manual

This user manual will help to use and maintain the device safely. The entire user manual for this device consists of one booklet:

- The general device user manual (this booklet)

Do not use your device until this entire manual (all booklets) has been read and understood!

If one of the user manuals was not included with the device, please contact a Sunrise Medical authorized dealer immediately.

1.2 For further information

Please contact a Sunrise Medical authorized dealer if you have any questions regarding the use, maintenance, or safety of the device. In case there is no authorized dealer in your area or you have any questions, contact Sunrise Medical either in writing or by telephone. For information about product safety notices and product recalls, go to

www.SunriseMedical.com

1.3 Symbols used in this manual

DANGER!

Potential risk of serious injury or death

CAUTION!

Potential damage to equipment

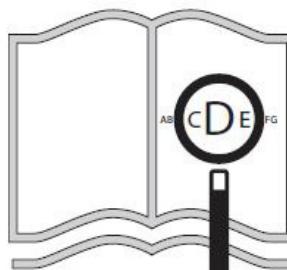
WARNING!

Potential risk of injury

NOTE:

General user advice

Not following these instructions may result in physical injury, damage to the product, or damage to the environment!



If you are visually impaired,
this document can be viewed
in PDF format at
www.SunriseMedical.com



Follow the instructions carefully next to these warning symbols! Not paying careful attention to these instructions could result in physical injury or damage to the device or the environment. Wherever possible, safety information is provided in the relevant chapter.

2.1 Symbols and labels used on the product

The signs, symbols, and instructions affixed to the device comprise part of the safety facilities. They must never be covered or removed. They must remain present and clearly legible throughout the entire lifespan of the device.

Replace or repair all illegible or damaged signs, symbols, and instructions immediately. Please contact your Sunrise Medical authorized dealer for assistance.

Fig. 2.1: Warning – Danger of finger entrapment (pinch point).

Fig. 2.2: Warning – Maximum user weight for the device.

Fig. 2.3: Location of Device Serial Number Label.

2.2 Safety: Temperature

⚠ WARNING!

1. Avoid physical contact with the device's motors at all times. Motors are continuously in motion during use and can reach high temperatures. After use, the motors will cool down slowly. Physical contact could cause burns. Allow the motors to cool down for at least thirty (30) minutes after use before any physical contact and/or service.
2. If you do not use the device, ensure that it is not exposed to direct sunlight for lengthy periods of time. Certain parts of the device, such as the battery, frame, docking tubes, docking mounts, and wheel can become hot if they have been exposed to full sunlight for too long. This may cause burns.

2.3 Safety: Moving parts

⚠ DANGER!

The device has moving and rotating parts. Contact with moving parts may result in serious physical injury or damage to the device. Contact with the moving parts of the device should be avoided (Fig. 2.4).

1. Fork and wheel
2. Docking frame
3. Brake lever
4. Folding handlebars
5. Fender and wheel



Fig. 2.1

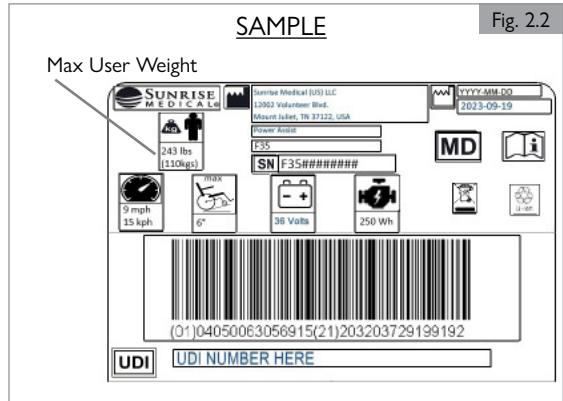


Fig. 2.2



Fig. 2.3

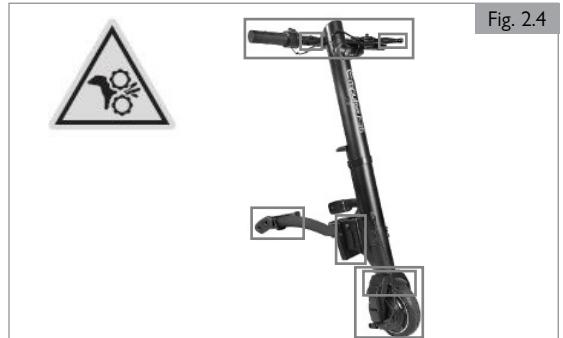


Fig. 2.4

2.0 SAFETY

2.4 Safety: Electromagnetic radiation

⚠ WARNING!

Heed all warnings to reduce the risk of unintended movement:

1. Beware of the danger from hand-held transceivers. Never turn on or use a hand-held transceiver while power to your device is on. Use extra care if you believe that such a device may be in use near your device.
2. Be aware of nearby radio or TV stations and avoid coming close to them.
3. If unintended movement occurs, turn your device off as soon as it is safe to do so.

2.4.1. What is EMI?

⚠ WARNING!

1. EMI means: electromagnetic (EM) interference (I). EMI comes from radio wave sources such as radio transmitters and transceivers. (A "transceiver" is a device that both sends and receives radio wave signals).
2. There are a number of sources of intense EMI in your daily environment. Some of these are obvious and easy to avoid. Others are not, and you may not be able to avoid them.
3. Your device may be susceptible to Electromagnetic interference (EMI) emitted from sources such as radio stations, TV stations, amateur radio (HAM) transmitters, two-way radios, and cellular phones.
4. EMI can also be produced by conducted sources or electrostatic discharge (ESD).

2.4.2. What effect can EMI have?

⚠ WARNING!

1. EMI can cause your device, without warning, to move by itself. If this occurs, it could result in severe injury to you or others.
2. EMI can damage your device. This could create a safety hazard, and lead to costly repairs.

2.4.3. Sources of EMI

⚠ WARNING!

The sources of EMI fall into three broad types:

1. Hand-Held Transceivers:

The antenna is usually mounted directly on the unit. These include:

- a. Citizens band (CB) radios
- b. "Walkie-talkies"
- c. Security, fire, and police radios
- d. Mobile phones
- e. Lap-top computers with phone or fax
- f. Other personal communication devices
- g. Electronic article surveillance systems

NOTE: These devices can transmit signals while they are on, even if not in use.

2. Medium-Range Mobile Transceivers:

These include two-way radios used in police cars, fire trucks, ambulances, and taxi cabs. The antenna is usually mounted on the outside of the vehicle.

3. Long-Range Transceivers:

These include commercial radio and TV broadcast antenna towers and amateur (HAM) radios.

NOTE - The following are not likely to cause EMI problems: Lap-top computers (without phone or fax), cordless phones, TV sets or AM/FM radios, CD or tape players.

2.4.4. Distance from the source

⚠ WARNING!

Electro-magnetic energy rapidly becomes more intense as you get closer to the source. For this reason, EMI from hand-held devices is of special concern. A person using one of these devices can bring high levels of EM energy very close to your device without you knowing it.

2.4.5 Immunity level

⚠ WARNING!

1. The level of EM is measured in volts per meter (V/m). Every power assist device can resist EMI up to a certain level. This is called its "immunity level".
2. The higher the immunity level, the less the risk of EMI. It is believed that a 20 V/m immunity level will protect the device user from the more common sources of radio waves.
3. The common configuration tested and found to be immune to at least 20 V/m is: Empulse F35 mounted to a Manual VWheelchair using lithium ion batteries.

⚠ WARNING!

If there is any doubt that the device is not immune to 20V/m, extra care should be taken around known sources of EMI.

⚠ WARNING!

There is no way to know the effect on EMI if you add accessories or modify the chair your device is mounted to. Any change to your chair may increase the risk of EMI. Parts not specifically tested or parts from other suppliers have unknown EMI properties.

2.4.6 Report all suspected EMI incidents

⚠ WARNING!

You should promptly report any unintended movement. Be sure to indicate whether there was a radio wave source near your device at the time. Contact: Sunrise Medical, Customer Service Department at (800) 333-4000.

2.4.7 EMI from device

⚠ WARNING!

The device itself can disturb the performance of electromagnetic fields such as emitted by commercial and/or residential alarm systems.

2.5 Safety: Choking hazard

⚠ DANGER!

This mobility aid uses small parts which under certain circumstances may present a choking hazard to young children.

2.6 Safety: Lifting the device

⚠ WARNING!

Lift the device using the handle and frame tube. Ensure the handlebar is fully locked before using. Lifting the device from other parts may damage the device or cause injury to the user.

2.7 Safety: Pinch point

⚠ WARNING!

Pinch points exist between the fork and wheel, docking frame, brake lever, folding handlebars, and fender and wheel.

3.0 INTENDED USE OF THE DEVICE

Indications for use

The Empulse F35 is a powered pulling device, which is attached to a wheelchair, to support the mobility and integration of the wheelchair user in daily life. It is designed for personal use indoors or outdoors.

⚠️ WARNING!

DO NOT use this device for purposes other than what is intended by the manufacturer. Unauthorized modifications and use of parts or accessories not supplied or approved by Sunrise Medical may change the device's function. This will void the warranty and may cause a safety hazard. If the warning is ignored, damage to your device and the potential for severe injury of the person using the device for unintended purposes can occur.

This device complies with part 15 of the FCC Rules. Operation is subjected to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

3.1 Area of application: Introduction

INTENDED USE OF DEVICE: The pulling device provides the user with the potential to safely cover long distances in an ergonomically and ecologically efficient manner, using their own wheelchair. It expands the activity radius significantly. The attached wheelchair must be equipped in accordance with road traffic regulations when used on public roads, pavements, and spaces.

Choosing the best device for your unique mobility needs, will depend on such things as:

1. Your disability, grasping strength, balance, and coordination.
2. The types of hazards you must overcome in daily use (where you live and work, and other places you are likely to use your device).

The overall maximum user weight shall not exceed:

Standard configuration - 110 kg (242 lbs)

The maximum user weight specified by the manual wheelchair shall also be observed. In no case should the F35 be used where the maximum overall weight is greater than 110 kg (242 lbs).

⚠️ WARNING!

Exceeding the weight capacities could lead to injury and/or permanent damage to the equipment.

NOTE — Exceeding the weight limit will void the warranty.

The user must be informed of the contents of this user manual before using the device.

Indications

The adjustability, as well as the modular design, mean that it can be used by those who cannot walk or have limited mobility because of:

1. Paralysis
2. Loss of extremity (leg amputation)
3. Extremity defect deformity
4. Joint contractures/joint injuries
5. Illnesses such as heart and circulation deficiencies, disturbance of equilibrium or cachexia as well as for elderly people who still have the strength in the upper body.

Contraindications

1. Perception disorder
2. Imbalance
3. Loss of both arms
4. Joint contracture or joint damage on both arms
5. Seating disability
6. Physically and mentally not capable of safely operating the pull device in all operating situations (steering, braking, ...).
7. Not meeting the legal requirements for use on public roads.



Fig. 3.1

NOTE: Please note that driving a wheelchair in combination with a pull device requires sufficient cognitive, physical, and visual skills. The user must be able to assess the effects of actions during the operation of the wheelchair/pull device and, if necessary, to correct them. These capabilities and the safe use of the additionally attached components cannot be assessed by Sunrise Medical as a manufacturer. We cannot accept any liability for any damage resulting from this.

Please also refer to the operating instructions of the wheelchair your pull device is to be combined with as well as the additionally mounted components. Instruct the user in the safe use of the wheelchair and the additionally mounted components. Inform users of specific warnings.

3.0 INTENDED USE OF THE DEVICE

⚠️ WARNING!

Improper use of the Empulse F35 or the wheelchair it is attached to, depending on surface, weather, and traffic conditions can present a potential injury and cause damage to the device or wheelchair. The device must only be operated under the following prerequisites:

1. The user is both physically and mentally capable of operating the wheelchair and device in all possible conditions and situations.
2. Proper instruction on its handling and operation has been received by reading and understanding this owner's manual in its entirety.
3. No unauthorized modifications have been made to the device.
4. The user must take time to become accustomed to the device's response and performance by first practicing its operation in a safe area that is free from hazards. The user must become comfortable with deactivation response, acceleration/top speed, etc. of the device before venturing out with the device where potentially more hazardous situations may exist.
5. It is strongly recommended that the user not attempt to use the device outdoors until it can be safely operated indoors without difficulty.
6. Do not operate the device beyond its stated design scope (i.e. user travelling uphill, exceeding maximum load on device).

If any issues or malfunctions exist, cease use of the device and contact Sunrise Medical Customer Service. Any contrary use to the directions of this owner's manual, to the recommendations of one's mobility equipment dealer, or to the technical limitations defined by either Sunrise Medical or one's wheelchair manufacturer is considered to be misuse of the device.

Sunrise Medical is not responsible for any injuries or damage caused by this type of misuse.

NOTE: All features may not be available with some chair setups or in conjunction with another chair feature. Please consult your Sunrise Medical authorized dealer for information.

NOTE: The device is designed to fit on a variety of manual wheelchairs. For information concerning a specific chair, please contact Sunrise Medical customer service.

⚠️ WARNING!

1. If you are under the influence of medicines that can have an effect on your ability to operate the device, you are not permitted to use the device.
2. Adequate vision is required in order to safely operate the device.
3. Not more than one person at a time can use the device.
4. Do not allow children to use the device unsupervised.

⚠️ CAUTION!

The user of the device is at all times completely responsible for complying with the applicable local safety regulations and guidelines.

⚠️ DANGER!

1. This pull device should be used exclusively to convey one person at a time. Any other use does not comply with the intended purpose.
2. A three-wheel vehicle is never as stable as a four-wheel vehicle, and it may tip over as a result of sudden maneuvers or going round bends too quickly.
3. When you are riding, braking, or maneuvering, always hold the handlebars firmly with both hands. Failure to do so could increase the risk of an accident through steering error.

3.2 Area of Application: Attendants

Before you assist a user, ensure you read all warnings contained in this manual, and follow all instructions that apply. Be aware that after consulting a health care provider, you will need to learn safe and proven body mechanics to use and create assistive methods best suited to your abilities.

3.0 INTENDED USE OF THE DEVICE

3.3 Area of Application: User

Before using the device ensure you read all warnings contained in this manual and follow the instructions that apply. Be aware that after consulting a health care provider, you will need to learn safe and proven body mechanics to use and create assistive methods best suited to your abilities.

WARNING!

The addition of the Empulse F35 to one's wheelchair may cause it to feel different. Take the time to learn the feel of the device before you begin riding. Practice and become familiar with the response and performance of the device prior to regular use. Do not attempt to use outdoors until it can be safely operated indoors without colliding into walls or any other objects.

If you use too much force, damage to your device, a fall, tip-over, or loss of control may occur and cause severe injury to the user or others.

WARNING!

1. BEFORE you begin using the device, you should be trained in the safe use of the device by your health care provider.
2. First, with the device attached to your chair, practice propelling your wheelchair at slow speeds and in open areas.
3. Be aware that you must develop your own methods for safe use best suited to your level of function and ability.
4. NEVER try a new maneuver on your own. Ask the advice of your health care provider to lower the risk of a fall or tip-over.
5. Get to know the areas where you plan to use your device.

WARNING!

Before each use of your device:

1. Verify there is no unusual vibration in the device. Inspect for any problems. Your Sunrise Medical authorized dealer can help you find and correct the problem(s).
2. Ensure the device battery is properly charged.
3. Check the conditions of your wheels, (including the wheels of your wheelchair) visually.
4. Always check that the tread depth of your tires is Okay.
5. Check that the brake works correctly. The pull device may not be used if the brakes are not 100% functioning!
6. Avoid damage to the cables. There is a risk of kinking the cable when you transfer to/from the device.
7. Check the fork by visual inspection for damage (e.g. cracks and breakages).
8. Check that all components, especially the bolts, are tight.
9. Check that the handlebars are firmly fixed.
10. Check the connection between the pull device and your wheelchair. Clamping must be on the metal tube without any parts, (e.g. calf strap, frame protectors) in between.
11. Check the frame and the components of your wheelchair for any damage, (e.g. cracks).
12. Repair or replace loose, worn, bent, or damaged parts before using the device.
13. Check that the lights are functioning and the reflectors are sound; they must be visible all the time during use.
14. Ensure that your feet cannot slip off the foot plate of your wheelchair. Use a special fixing tool if necessary.
15. Check all cables and electrical connections.
16. Check that the battery is fully charged.
17. Switch the device on and check the light.
18. Always wear a helmet.

WARNING!

While driving:

1. Make yourself familiar with the device in flat terrain before driving up or down slopes.
2. Always hold the handlebars with both hands firmly as otherwise, there is a high risk of an accident through steering error.
3. Always adapt your speed to your driving capability and to the traffic and terrain conditions.
4. Use particular caution when approaching stairs, edges, drops, or other hazard areas.
5. Reduce your speed to walking pace and lean your body inwards, when driving round a bend.

6. When waiting e.g. at a pedestrian crossing, a traffic light, on hills or slopes or at ramps of any type, always activate the brake.
7. Due to the increased turning circle, turning can be sometimes impossible e.g. in corridors and other confined spaces.
8. Only use the defined brackets to fix objects (additional weights, bike panniers).
9. When driving on pedestrian areas, observe the maximum permitted speed (walking speed).
10. Always follow the road traffic regulations when driving on public roads and footpaths.
11. Avoid driving on unpaved or loose surfaces (e.g. on loose gravel, in sand, mud, snow, ice, or through deep puddles of water).
12. Avoid abrupt steering actions.
13. Avoid driving in parallel to slopes.
14. Avoid turning on slopes.
15. On slopes the traction of the driving wheel is lowered and the braking effect is considerably reduced. The driving style and speed should always be adjusted so that the product can be safely stopped at all times.
16. Towing or using a trailer is not permitted.
17. Driving on stairs is not permitted.
18. Obstacles e.g. curbs must be run over always frontal / rectangular with very low speed to avoid tipping over and potential injuries. The max obstacle height is 2-in (51 mm), but this depends on the distance from the casters to the ground.
19. It must be avoided that any wheelchair components or parts of your body get trapped when driving over or passing obstacles. This could result in falls and serious injuries as well as damage to the product.
20. When driving on wet surfaces, there is an increase slip hazard because the traction of the tires is reduced. Adapt your driving style accordingly.
21. Always use the main brake to slow down your pull device.
22. Sliding of the driving wheel during braking can be avoided by moving your body weight forward.
23. Avoid strong braking actions while driving through bends.

WARNING!

After your ride:

1. Switch off the device immediately when it is not in use to avoid accidental operation / movements caused by accidentally touching the throttle.
2. Switching off helps to preserve the battery charge.

WARNING!

Unauthorized modifications, or use of parts or accessories not supplied or approved by Sunrise Medical may damage your device. This will void the warranty and may cause a safety hazard.

WARNING!

NOTE - This device contains parts and hardware of many shapes and sizes. When using or working around the device, take caution to avoid any corners or edges that may cause a scrape or a cut.

3.0 INTENDED USE OF THE DEVICE

⚠ WARNING!

Adding the device to an existing wheelchair can affect the center of balance. The point where the chair will tip forward, back, or to the side depends on its center of balance and stability. How your chair is set up, the options you select, and the changes you make may affect the risk of a fall or tip-over.

1. The Center of Balance Is Also Affected By:
 - a. A change in your body position, posture, or weight distribution.
 - b. Riding your chair on a ramp or slope.
 - c. A backpack or other options and the amount of added weight.
2. To Reduce the Risk of an Accident:
 - a. Consult your Sunrise Medical authorized dealer BEFORE you modify or adjust this device. Be aware that you may need to make other changes to correct the center of balance.
 - b. Have someone help you until you know the balance points of your chair and how to avoid a tip-over.
 - c. Use anti-tip tubes.

If you fail to heed these warnings, you are at a high risk of a fall, tip-over, or loss of control that could cause severe injury to yourself or others.

⚠ WARNING!

NOTE - Your device has many moving parts that can create pinch points and possible finger traps. Pinch points exist between fork and wheel, docking frame, brake lever, folding handlebars, and fender and wheel. Be aware when making any adjustments, when moving, and any other situation that could cause a pinch point situation.

⚠ WARNING!

If you reach or lean it will affect the center of balance of your chair. This may cause you to fall or tip over. Always follow the acceptable use guidelines recommended by the wheelchair manufacturer.

If you fail to heed these warnings, you are at a high risk of a fall, tip-over, or loss of control that could cause severe injury to yourself or others.

3.4 Area of application: The user environment (Fig. 3.2)

This device has been designed to accommodate both indoor and outdoor use. When operating the device outdoors, drive only on paved roads, pavements, footpaths, and bicycle paths. Do not operate on loose, rocky, grass, rough, or wet surfaces. This could cause a loss of traction or stability resulting in damage to the device, loss of control, and put the user at risk of a fall or tip-over. The speed must be adapted to suit the environment.

⚠ WARNING!

1. Do not operate device on slippery roads resulting from rain, ice, or snow!
2. When driving at higher speeds you must be extra careful.
3. Select a lower maximum speed indoors, on the pavement, and in pedestrian areas.
4. Do not drive off high obstacles.

⚠ DANGER!

1. At night and dawn/dusk, always use the lights.
2. Ride slowly and carefully, particularly when riding round corners.
3. If the pull device is subject to direct sunlight / external heat sources or low temperatures for long periods, parts of your pull device could become very hot >41°C (>106°F) or very cold <0°C (<32°F).

⚠ CAUTION!

1. Prevent the device from coming into contact with both sea water and road salt during operation, transportation, or storage: sea water and road salt are caustic and may damage the device.
2. Prevent the device from coming into contact with sand: sand can permeate into the moving parts of the device, causing extensive wear on these parts.
3. Do not use the device if temperatures are outside the range listed in Section 12.0 Technical Specifications.
4. Do not push and/or tow any objects with the device.
5. Do not drive through puddles of water.
6. Ensure the battery, display, and all internal components are secure in the frame tube.
7. Never take your device into a shower, tub, pool, or sauna.
8. Dry the device as soon as you can if it gets wet, or if you use water to clean it.

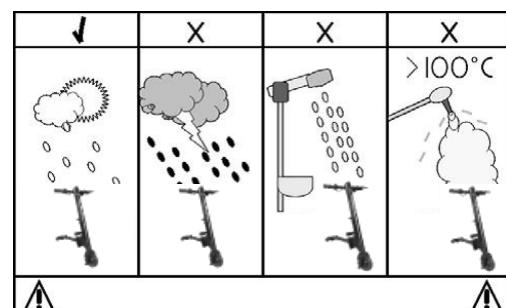
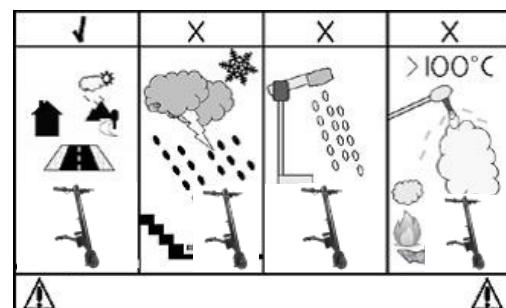


Fig. 3.2

⚠ WARNING!

Do not use the device if it has been involved in a motor vehicle accident. A sudden stop and/or collision may structurally damage your device. There may have been a change to the structure of the device and/or damaged or broken some of the components.

Inspect for: visual cracks, dents, metal distortion, or bends. If the device has been involved in an accident, discontinue use immediately and contact your Sunrise Medical authorized dealer for a thorough inspection. Work with the dealer to determine if the device is still safe to use if it has been involved in a collision. If damage is questionable or if there is concern regarding the condition of the device Sunrise Medical recommends replacement of the device.

NOTE — The warranty is void on any device that is involved in a collision.

⚠ CAUTION!

Continuous or prolonged UV exposure can damage your device. Avoid exposing your device to continuous or prolonged UV light as it can cause component materials to weaken and become brittle, and cause labels to become illegible and/or discolored.

⚠ WARNING!

Avoid overheating of device motor and battery by only operating and/or storing device within acceptable temperature ranges:

1. Operating temperature range: -20°C to 60°C (-4°F to 140°F)
2. Storage temperature range:
 - Up to 1 month: -10°C to 45°C (14°F to 113°F)
 - Up to 3 months: -10°C to 35°C (14°F to 95°F)

If you fail to heed these warnings, you are at a high risk of damaging the device and injuring the user or others.

⚠ DANGER!

Versions of the pulling device which drive faster than 6 kph (3.7 mph) are only permitted in road traffic in certain counties, states, and countries and otherwise may only be used on private land. In the absence of approval, in accordance with the road traffic laws, the versions which drive faster than 6 kph (3.7 mph) version may not be driven on public roads or even bike paths. It is your responsibility to find out the information about which legal regulations apply in your particular country and about the insurance or driving license obligations for versions which drive faster than 6 kph (3.7 mph).

If you order a version which has a speed of over 6 kph (3.7 mph), please confirm this to Sunrise Medical with your signature, that you have understood this information and that we should deliver this version.

4.1 Introduction

Delivery and unpacking

Your new pull device is delivered fully assembled in a cardboard box. In order to avoid any damage during transportation, loose parts or parts to be fitted, are packed separately in the cardboard box.

1. Check the shipping cardboard box for external damage which may have been caused during transportation.
2. Remove all packaging material.
3. Take the pull device carefully out of the box and check that it is intact.
4. Check all parts for surface damage, scratches, cracks, dents, distortions, and other defects.
5. The scope of delivery consists usually of the pull device along with connecting tubes with docking clamps and charger.

⚠ CAUTION!

1. The pull device may only be used with the delivered docking system and the appropriate frame clamps for your wheelchair. The pull device must be handed over ready to use from Sunrise Medical or a Sunrise Medical authorized dealer.
2. Before using for the first time, the battery should be fully charged.

Fitting the display:

The display has been specifically programmed for your pull device and is delivered installed with the pull device.

NOTE: Should you find any damage or if any parts are missing, please let Sunrise Medical know immediately.

Storage:

The pull device should always be stored in an environment with low humidity, on an easy to clean surface at ambient room temperature (+15°C to +25°C (+59°F to +77°F)).

4.2 Fitting to the wheelchair for the first time

The delivery includes the appropriate clamps for your wheelchair. If you have ordered the clamps for frames with round tubes, then reducers for frame diameters of 3/4-in (19mm), 7/8-in (23mm), 1-in (25.4mm) or 1 1/8-in (28.6mm) are included. These must be inserted into the clamps prior to assembly, depending on the frame tube diameter (the shoulder of the reducer should be flush with the clamp and be facing upwards).

1. Position the clamps (A) on both sides of the wheelchair and frame. When fitting them, select a straight part of the frame tube which is not curved or angled. (Fig. 4.1)
2. Position the clamps in such a way that they are parallel to one another and are at the same height on the frame. Tighten the Allen screws (B) on the front and rear of the clamps several times on one side, then the other. (Fig. 4.2)
3. Torque the Allen screws to 7 Nm [62 in-lbs]. 

NOTE: For wheelchairs with swing-away and removable footrest, the clamp (Fig. 4.1, A) must be fitted on the main frame of the wheelchair (area C) and under no circumstances are they to be fitted on the removable footrests (area B). (Fig. 4.3)

⚠ DANGER!

If the clamps are fitted on removable footrests this will lead to damage to the wheelchair and can lead to a fall and serious injury to the user.

⚠ CAUTION!

1. Make sure that the Empulse F35 is securely attached to the wheelchair.
2. Check the torque of the clamps at regular intervals.

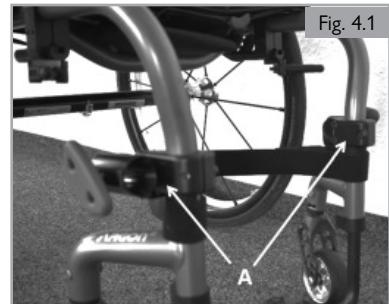


Fig. 4.1

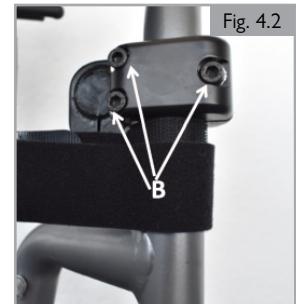


Fig. 4.2

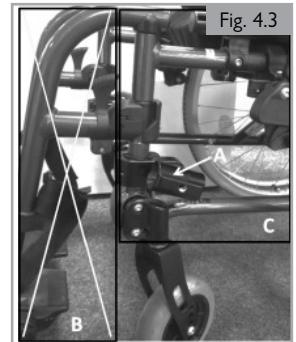


Fig. 4.3

4.0 SETTING UP THE DEVICE

4.3 Fitting the pull device

NOTE:

- A straight section of the frame tube at a minimum of 1 7/16-in (36mm) is necessary for the attachment of the clamps.
- The optimal angle of the F35 to the ground is 80°. For optimal performance, it is recommended not to fall below the 9 3/4-in (248mm) minimum mounting height (measured from floor to upper edge of the clamp).

Adjusting the subframe to the correct front frame width and angle

NOTE: Make sure, if needed, the appropriate reducers for your wheelchair frame diameter are inserted into the clamps (see section 4.1).

1. Insert docking tubes to the preferred depth and align with the small black bracket (D). (Fig. 4.4)
2. Tighten the handscrews when both tubes are aligned to each other (Fig. 4.5).

DANGER!

The tubes of the intermediate sub-frame must, in any case, be pushed completely into the clamps and must be at least 1 1/2-in (13mm) longer than the clamps.

Between the ends of the tubes of the intermediate subframe and the drive wheels a gap of at least 3/4-in (19 mm) must be maintained. If this is not the case with a correct mounting position, the tubes of the intermediate subframe must be shortened with the aid of a pipe cutter, so that this gap can be maintained. Contact Sunrise Medical technical support for guidance.

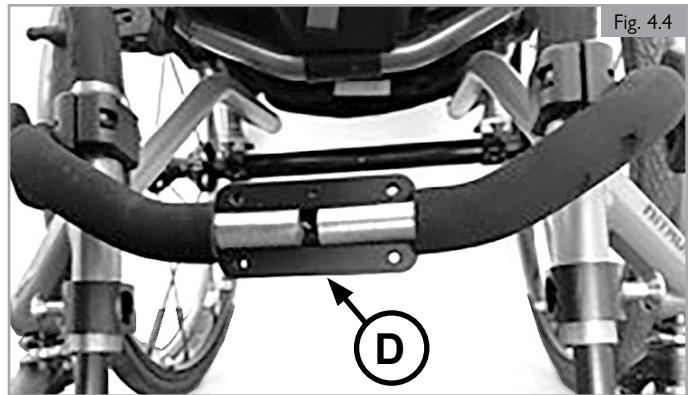


Fig. 4.4



Fig. 4.5

4.0 SETTING UP THE DEVICE

1. Place the caster wheels on the spacers (included in the delivery) to ensure that there is a gap between caster wheels and floor of 1 5/8-in (41mm) (Fig. 4.6).
2. Mount the central bracket, make sure that the central bracket is centered between the front frame tubes and the mark of the small bracket is oriented upwards (Fig. 4.7). Slightly tighten the upper screws first that there is a 3/32-in (2mm) gap from small to main bracket (Fig. 4.8). Next slightly tighten the lower screws and then the upper screws progressively until all 8 bolts are tightened (Fig. 4.9).
3. Torque the Allen screws to 16 Nm [142 in-lbs]. 
4. Rotate the frame clamp until the subframe plate is at 80°. (Fig 4.10) 
5. Then torque the frame tubing clamp Allen screw (C) to 15 Nm [133 in-lbs]. (Fig 4.11) 

⚠ CAUTION!

Always observe the correct torque.



Fig. 4.6

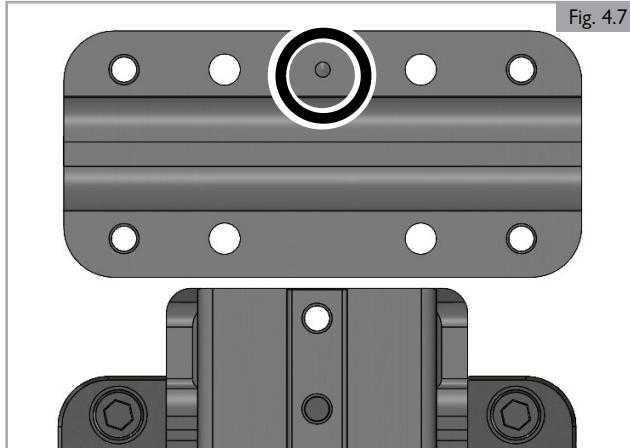


Fig. 4.7



Fig. 4.8

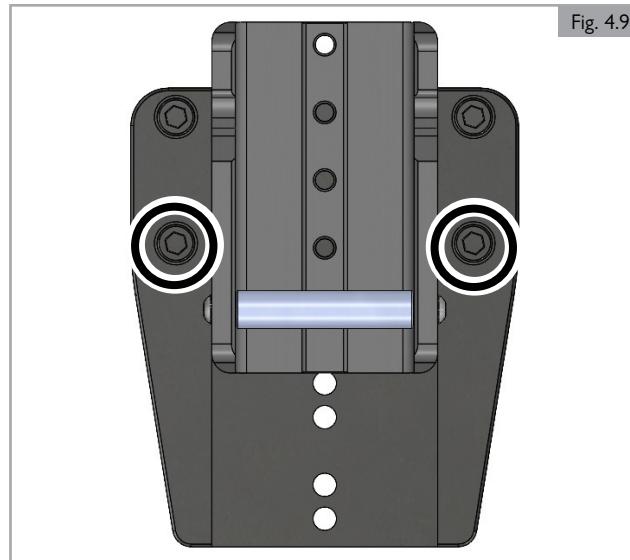


Fig. 4.9

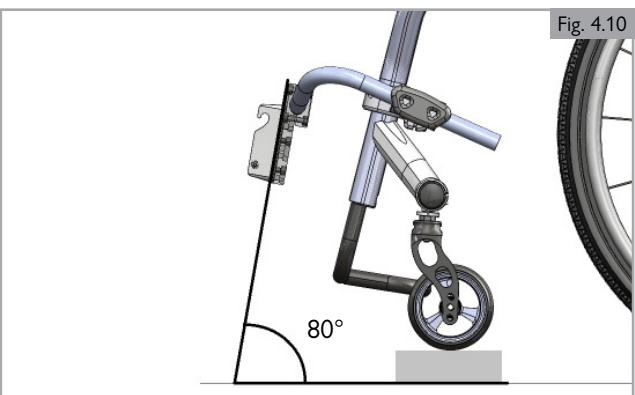


Fig. 4.10

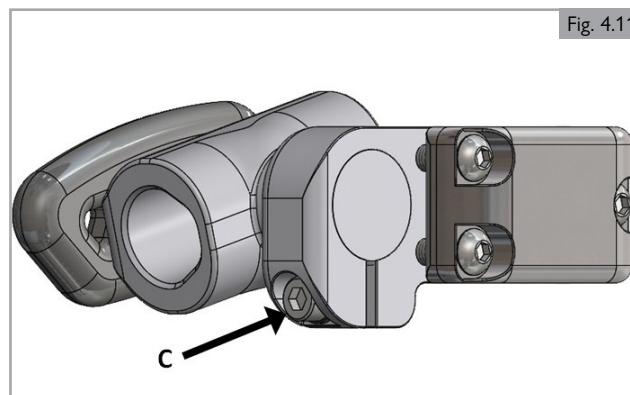


Fig. 4.11

4.0 SETTING UP THE DEVICE

6. Dock the F35 to the wheelchair and measure the angle of the tube (80° is the optimal angle) (Fig. 4.12).
 - a. When the angle of the F35 is too low, move the docking bracket upwards by undoing the screws, moving the bracket up, and retightening the screws (Fig. 4.13).
 - b. When the angle of the F35 is to steep, move the docking bracket downwards by undoing the screws, moving the bracket down, and retightening the screws (Fig. 4.14).

NOTE: Moving one screw hole up or down will change the angle by around 2.5°

7. Individual angles of the F35 can be realized by moving the docking bracket up or down (Fig. 4.13 / 4.14).

⚠ DANGER!

1. Ensure that the gap between the feet of the user and the drive wheel is at least 2-in (51mm), even at full steering.
2. Under no circumstances the drive wheel must touch parts of the wheelchair or the user's feet; this may cause serious injury.
8. Tighten bolt numbers 1-4 and 7-9 to 16 Nm [142 in-lbs]. Then tighten bolt number 5 and 6 to 7 Nm [62 in-lbs]. (Fig. 4.15)

⚠ CAUTION!

Always observe the correct torque.

⚠ DANGER!

Re-tighten screw after 30 minutes before using the F35, then retighten again after 24 hours.

⚠ DANGER!

1. Ensure that the gap between the feet of the user and the drive wheel is sufficiently large, even at full steering lock.
2. Under no circumstances must the drive wheel touch the user's feet during driving, this may cause serious injury.



Fig. 4.12

Fig. 4.13

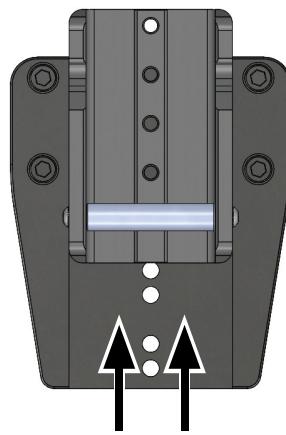


Fig. 4.14

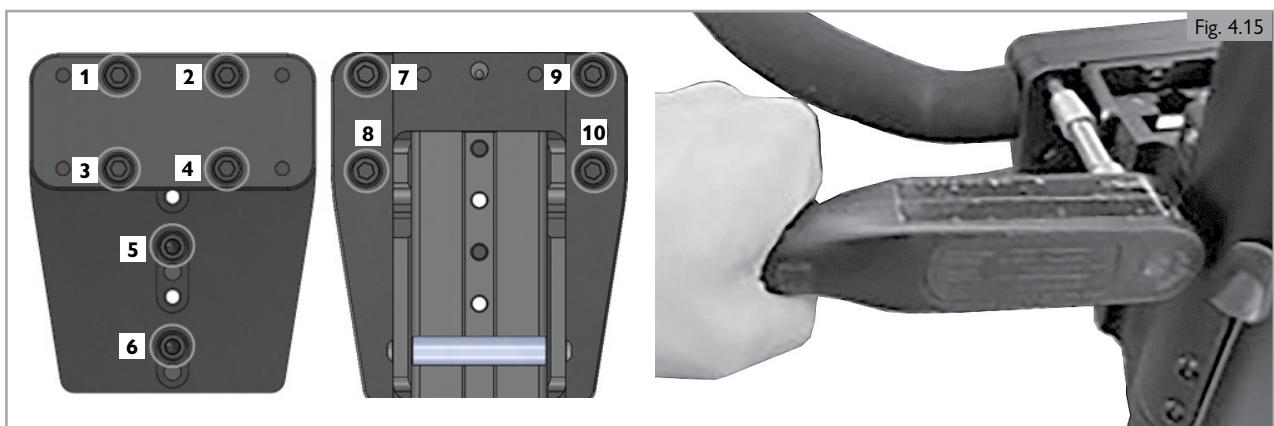
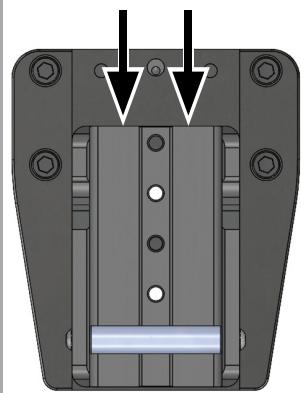


Fig. 4.15

DANGER!

1. Always make sure that the device is switched off before docking and de-docking.
2. Ensure the wheelchair is fully connected with the pull device before use.
3. As with all moving parts, there is a risk that fingers and / or clothing could become trapped. Be extra careful when operating the clamp-lever and the locking-bolt. (Fig. 5.3)

5.1 Docking

1. Switch the pull device off using the power button on the display. (Fig. 5.1)
2. Apply the wheelchair wheel locks. (Fig. 5.2)
3. Insert the subframe into the docking clamps. (Fig. 5.3)
4. Now rotate the tommy screws of the clamps in a clockwise direction until they are hand tight, and the intermediate sub-frame is securely held in the clamps. (Fig. 5.4)



Fig. 5.1



Fig. 5.2



Fig. 5.3

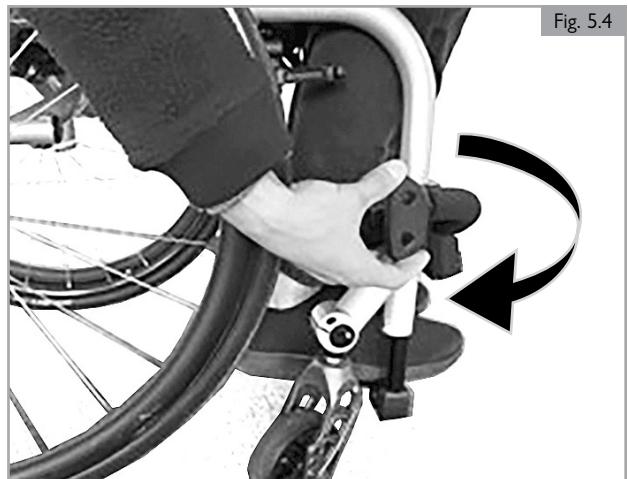


Fig. 5.4

- Lift the pull device from the floor, and insert the docking pins into the central bracket. (Fig. 5.5 - Fig. 5.6)
- Push the handlebar forwards/upwards until the locking bolt automatically clicks into place. (Fig. 5.7)
- Only release the wheelchair wheel locks just before setting off. (Fig. 5.8)

! DANGER!

- Before setting off, ensure that the pulling device is correctly docked and that all locks are closed.
- If the locks cannot be closed properly, or you have the feeling that they are not properly closed, please contact your Sunrise Medical authorized dealer for this to be checked. Under no circumstances should you set off; there is a risk of accident and injury.
- The gap between casters of the wheelchair and the floor must be at least 1 5/8-in (41mm) - otherwise there is a risk of accident and injury.
- The docking and de-docking procedures should always take place on an even surface.
- With all moving parts, pay attention to your fingers - there is a risk of finger entrapment.

NOTE: Before setting off, take a moment and go through the following checklist:

- Both tubes of the intermediate sub-frame are complete and are pushed into the clamps to the same point on both sides. The ends of the tubes are at least 1 1/2-in (13mm) longer than the clamps and end at least 3 3/4-in (19mm) away from the drive wheel.
- The tommy screws are tightly closed on both sides and also clamp the intermediate sub-frame securely.
- The locking mechanism is securely locked.
- The gap between the casters of the wheelchair and the floor is at least 1 5/8-in (41mm).



Fig. 5.5



Fig. 5.6



Fig. 5.7



Fig. 5.8

5.2 De-Docking

To de-dock, proceed as follows:

- Apply the wheelchair wheel locks.
- Switch the pull device off using the power button on the battery.
- Push the handlebar gently forwards/upwards.
- Pull and hold the docking release lever on the main tube.
- Now lower the pull device slowly until the casters of the wheelchair touch the floor.
- Place the pull device beside the wheelchair.
- Undo the tommy screws of the clamps on both sides and pull the subframe until the tubes of the intermediate sub-frame have been pulled completely out of the clamps.

! DANGER!

- Make sure that you support the pull device before you pull the docking release lever - there is a risk of injury if the pull device lowers in an uncontrolled manner.
- With all moving parts, pay attention to your fingers - there is a risk of finger entrapment.
- The docking and de-docking procedures should always take place on an even surface.
- Place the pull device carefully onto the floor so that it does not get damaged.

6.1 Brakes

The pulling device has two brakes (Fig. 6.1):

1. A mechanical disc brake which is operated by a brake lever on the handlebar (A) (left).
2. An electrical brake, which is operated using the operating paddle on the handlebar (B) (left). The electrical brake only works when the pulling device is switched on and ready for use.

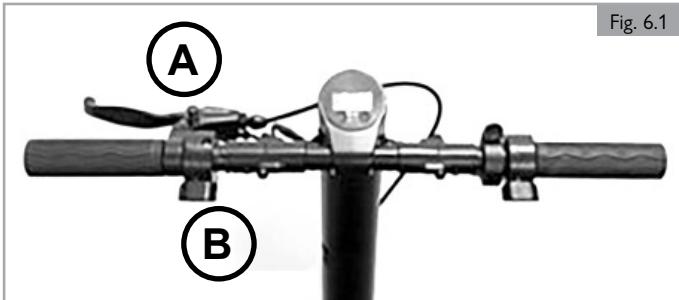


Fig. 6.1

Before driving, familiarize yourself with the operation, response, and braking force of both brakes.

⚠ DANGER!

1. The electrical brake only works when the pull device is switched on and ready for use.
2. You will only achieve the maximum brake performance with the mechanical disc brake.
3. Hard and sudden application of the brakes may cause you to fall forward with your upper body, resulting in possible injury. Therefore, always stabilize yourself by holding onto the handles firmly with both hands.
4. Braking power can be severely decreased by any or all of the following:
 - o Worn tire tread
 - o Soiled and wet tires
 - o Worn brake pads
5. Ensure that the brake pads and brake discs do not become contaminated with oil and/or grease. If this happens the brake pads must be replaced. The brake disc must be professionally degreased with a brake cleaner.
6. The drum brake is not self-adjusting and needs to be re-adjusted when the brake pads wear. Please contact your Sunrise Medical authorized dealer to carry out this work.
7. Be aware that the condition of the ground surface can significantly affect braking efficiency.
8. Be aware that the stopping distance is extended when braking on a slope.
9. The braking effect will be greatly reduced if the surface is wet, dirty, sandy, stony, uneven, or otherwise compromised by environmental conditions. It is best to avoid these conditions. If this is not possible adapt your driving style to avoid the risk of potentially serious accidents.
10. Always check the efficiency of the brakes before starting your journey to ensure that they are working correctly. The brakes should be checked regularly by your Sunrise Medical authorized dealer and adjusted if required.
11. If you stop on a steep slope (upwards), it can happen that the brake of the pull device cannot hold the combined unit because of a lack of traction on the front wheel.

6.2 Switching on and off

To switch your pull device On/Off please press the right button on the display (for 3 seconds).



You can switch the lights on by holding the left button on the display pressed for 3 seconds. To switch off, press the left button again for 3 seconds.



⚠ WARNING!

Always switch the pull device off before docking or de-docking in order to avoid unintentional operation.

6.3 Selecting the direction of travel

In order to change the direction of travel, the pull device must be brought to a standstill. Then push the left button until the display shows "R" (1-2-3-2-1-R) next to the speed indication. The throttle will move the pull device backwards (Fig. 6.2).



Fig. 6.2

⚠ DANGER!

1. The direction of travel can only be changed when the device is stationary. Changing the direction of travel only has an effect once the device has come to a standstill.
2. Before setting off each time, check the forward / reverse gear indication on the display in order to avoid unintentionally moving backwards (risk of serious injury).
3. When driving backwards take note of your environment in order to avoid collisions.
4. Please note that the steering behaves differently when going backwards compared with going forwards. Abrupt steering movements can lead to a fall (risk of serious injury).

6.0 OPERATION

6.4 Controlling the speed (throttle)

- Using the throttle (Fig. 6.3 - A) you can control the speed with the thumb of your right hand.
- By applying greater pressure, the speed increases, by reducing the pressure, the speed will drop.
- When you let go of the throttle, the speed will drop, the pull device will roll to a standstill.



Fig. 6.3

6.6 Cruise control

- By using the pushbutton (Fig. 6.4 - B) which is integrated into the housing of the electronical brake the current speed of the pull device can be maintained (cruise control) without having to hold the throttle.
- Accelerate the pull device to the required speed, hold the throttle in position and then press the cruise control pushbutton (B). The pull device will now hold that speed, even if you let go of the throttle.

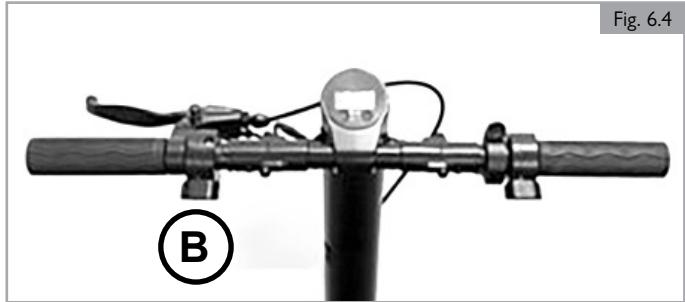


Fig. 6.4

⚠ DANGER!

- Always adapt your speed to your environment in order to avoid collisions (risk of serious injury).
- Familiarize yourself with the way your combined unit handles cornering before you drive at higher speeds (risk of serious injury).
- Before activating the throttle always check that the direction of travel is set to the required direction of travel.
- Always switch the pull device off when docking and de-docking as well as when it is not being used in order to prevent accidental activation of the throttle.

NOTE: Driving at full throttle for long periods of time can mean that the motor and controller is subject to extreme thermal load. In order to avoid overheating, the power will be restricted until the motor reaches a normal operating temperature again.

6.5 Selecting the drive levels

- Different drive levels (1, 2, 3) can be selected using the display, these determine the maximum achievable speed in that particular drive level.
- The drive levels can be selected using the left button on the display. The selected drive level will be shown on the display.

NOTE: The maximum speed and maximum motor performance will only be achieved in drive level 3.

- By pressing the pushbutton again or activating the brake (both mechanical and also the electrical brake), the cruise control will be deactivated immediately.
- When the cruise control is activated, it is not possible to accelerate using the throttle. To do this you will need to deactivate the cruise control.

⚠ DANGER!

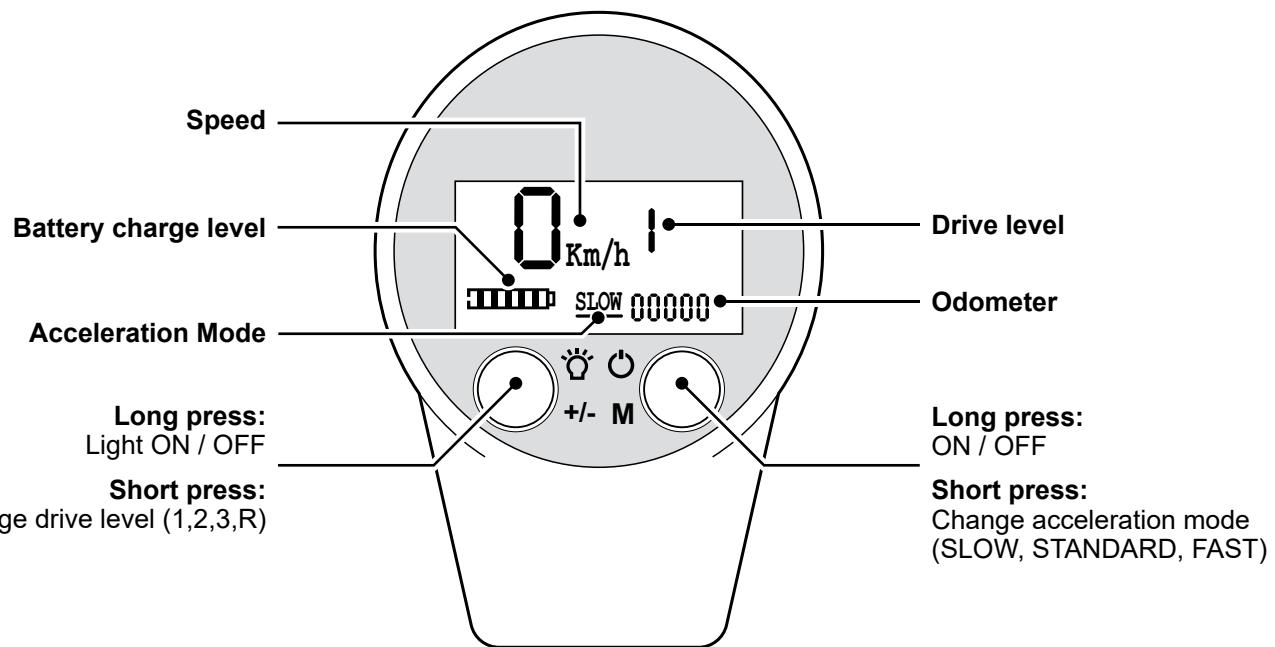
- The cruise control can only maintain the set speed in terms of available motor power. If you are going up a slope with the cruise control activated, the speed may go down.
- When going downhill with the cruise control activated, it will attempt to maintain the set speed with the aid of the electrical motor brake. At the point when the slope is too steep and the electrical brake power is no longer sufficient, the speed will increase. If necessary, you will need to activate the mechanical brake in order to maintain the required speed.
- After the pull device is switched on by pressing the "On/Off" button for 2 seconds (also see "Switching on and off") the display shows the current speed in the main screen. In addition, the selected drive level (after switching on, drive level 1 is pre-selected) and the current battery capacity are displayed.

⚠ DANGER!

- Familiarize yourself with how the cruise control works before you use it. Practice activation/deactivation at low speeds.
- Even with the cruise control activated, you need to be constantly attentive and be ready to brake.
- Pay particular attention to your speed when going downhill with the cruise control activated. Control the speed manually if necessary using the mechanical brake (risk of serious injury).

NOTE: If you do not use your pull device for long periods of time, we recommend that you switch your pull device on every 4 weeks and allow the wheel to rotate for approximately 5 minutes at low speed in order to guarantee that the grease that is there is distributed over all bearing positions. This will prevent corrosion of the bearings.

6.7 Functions of the display

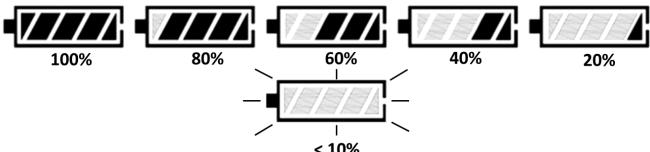


6.7.1 Lights

The lights can be switched on or off by pressing the left button for 2 seconds. This is displayed by the relevant symbol on the display (upper right corner).

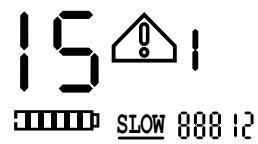
6.7.2 Battery capacity:

This is displayed by the battery symbol. As soon as the battery display starts to flash, the battery must be charged immediately.



6.7.3 Fault code display (Fig. 6.5):

When the electronics detect a fault in the system, a warning symbol (!) is shown next to the fault code.



Fault codes are shown in the center of the display.

Faults can arise once sporadically. Each time the device is restarted, the fault code is deleted. If the fault should arise again, we recommend that you make a note of the fault code and contact your Sunrise Medical authorized dealer.

DANGER!

Only carry out setting work when the device is stationary and never when driving.

6.0 OPERATION

Fig. 6.5

Display error code	Error description	Item	Notes
0	Undervoltage, low battery level (undervoltage protection)	Battery	Continue charging until fully charged.
1	Overvoltage, battery charge too high	Battery	Unplug the charger from the battery and contact Sunrise Medical technical support.
2	Controller failure	Controller	Contact Sunrise Medical technical support.
3	MOS tube temperature is too high (controller temperature is too high) (controller over temperature protection)	Controller	Stop using the device for 15 minutes, then power off and restart the device to see if the fault is recovered. If the fault cannot be cleared, contact Sunrise Medical technical support.
4	Display and controller communication failure	Controller & Display	Power off the F35 by the battery power button. Remove the fuse, wait 5 seconds, and plug the fuse back in. If the error code returns contact Sunrise Medical technical support.
5	Hall fault	Controller & Motor	Power off the F35 by the battery power button. Remove the fuse, wait 5 seconds, plug the fuse back in, and turn the device on. If the error code returns contact Sunrise Medical technical support.
6	Throttle Fault	Throttle	Check whether the throttle dial connection cable, plug, or throttle lever are damaged. If damaged, replace the dial. If the error code doesn't clear contact Sunrise Medical technical support.
7	E-brake fault	Throttle	Check the E-brake connection. If cable, plug, or E-brake lever are damaged replace the dial. If the error code doesn't clear contact Sunrise Medical technical support.
9	Motor stall (motor stall protection)	Controller & Motor	Stop using the device for 6 minutes, then power off and restart the equipment to see if the fault is cleared. If the error code doesn't clear contact Sunrise Medical technical support.
12	Communication failure between battery and controller	Battery & Controller	Power off the F35 by the battery power button. Remove the fuse, wait 5 seconds, plug the fuse back in, and turn the device on. If the error code returns contact Sunrise Medical technical support.
13	M-brake fault	M-brake	Check the Manual Brake electric wire connection. Replace the handle if any damage is visible or the error code doesn't clear. If the error code returns, contact Sunrise Medical technical support.
14	E-brake fault	Display/ Throttle	Check if the E-brake is not in the pressed state or replace the E-brake to see if the fault is cleared. If it cannot be cleared, contact Sunrise Medical technical support.
15	M-brake fault	Display/ M-brake	Check that the Manual Brake is not in the locked state, and check the cable for kinks. Ensure the brake cable is properly attached to both the brake lever handle and the wheel. Replace the brake cable if any damage is found. Replace the handle if any damage is visible or the error code doesn't clear. If the error code returns, contact Sunrise Medical technical support.
EC	Unknown failure		Power off the F35 by the battery power button. Remove the fuse, wait 5 seconds, plug the fuse back in, and turn the device on. If the error code returns contact Sunrise Medical technical support.

6.7.4 Settings

1. You can open the settings menu in order to carry out basic settings by simultaneously pressing the left and right button quickly.
2. To enter the menu please press left - right - left - right button on the display.

NOTE: When the Power on PIN is changed the PIN to enter the menu will also change. In case the PIN has been forgotten you can find the possible PIN combinations in the section PIN check below.

3. By single pushes on left or right button you can move up or down.
4. If the small star on the left is indicating the sub menu you would like to enter press left and right button in parallel for 2 seconds to select. The star on the left will turn into an arrow.
5. Using the left and right button again you can toggle between the values.
6. To confirm your selection please press left and right button simultaneously for 2 seconds.
7. When the settings are done press the right button for 2 seconds to exit the menu.

NOTE: These settings can only be carried out when stationary.

1. Changing the units:

1. KM-MPH Km/h

2. Acceleration 0

3. PIN Check Y

Using the "left" and "right" buttons you can toggle between "US" (miles/mph) and "EU" (kilometer/kph).

2. Acceleration:

In order to adjust the acceleration, you can select between three acceleration levels (0, 1, and 2) using the "left" and "right" buttons (2=high acceleration / 0=low acceleration).

0 Low acceleration

1 Standard acceleration

2 High acceleration

1. KM-MPH Km/h

2. Acceleration 0

3. PIN Check Y

3. PIN check:

NOTE: In case the L – R – L – R Password is not working you can find the 16 possible Password combinations below:

L	L	L	L
L	L	L	R
L	L	R	L
L	L	R	R
L	R	L	L
L	R	L	R
L	R	R	L
L	R	R	R
R	L	L	L
R	L	L	R
R	L	R	L
R	L	R	R
R	R	L	L
R	R	L	R
R	R	R	L
R	R	R	R

4. Software version read out:

Controller SW:

C6517

Display SW:

D651516

If the indicator is next to the PIN check, press the button once again to move to the software version readout screen.

7.0 BATTERY AND CHARGER

7.1 Introduction

The battery delivered with the product must only be used to drive the Empulse F35 from Sunrise Medical. No other components may be connected to it.

This operating manual only describes the use of the above-mentioned battery and corresponds to the state of the art at the time of print.

The manufacturer reserves the right to make changes resulting from further development of the mechanics, software, or legal requirements. The manufacturer regards uses including the following as misuse of the battery:

- Use of the battery that contravenes the instructions and recommendations in this operating manual.
- Exceeding the technical limits stated in this operating manual.
- Technical modifications to the battery.
- Changes to the software of the battery.
- Unauthorized attachments or use of the battery.
- The manufacturer shall not be liable for any damage caused by improper use of the battery.

7.2 Safety instructions for the battery and charger

WARNING!

Read and observe the following safety instructions and precautions before activating the battery and before starting the charging process.

DANGER!

1. Failure to comply with the safety precautions and instructions may damage the product or result in electric shock, fire, and/or serious injuries.
2. The lithium-ion battery contains chemical substances, which may cause hazardous reactions if the safety instructions specified here are disregarded.

CAUTION!

The manufacturer accepts no liability for damage resulting from non-compliance with these instructions.

Safety instructions and precautions on the use of the battery:

DANGER!

1. Before using for the first time, the battery should be fully charged.
2. The battery must only be used at temperatures between -20 °C (-4°F) and 60 °C (140°F).
3. The battery must not be exposed to heat (e.g. radiators) or fire. External heat exposure can lead to the battery exploding.
4. In the (unlikely) event of the battery overheating or catching on fire, you must ensure that the battery does not come into contact with water or other liquids. The only suitable extinguishing agent that is recommended by the cell manufacturers is sand.
5. If possible, charge the battery after every use.
6. The battery must not be opened or taken apart. Improper opening or willful destruction of the battery involves the danger of serious injury. In addition, opening the battery voids any warranty claim.
7. Never connect the battery contacts in the charging socket to metallic objects, or ensure that the contacts never come into contact with metallic objects (for example with metal filings).
8. If the charging socket is dirty, clean it with a clean and dry cloth.
9. Never immerse the battery in water.
10. The useful life of the battery depends, among other things, on its storage location. Consequently, never leave the battery in hot locations for prolonged periods. In particular, use the trunk of a car parked in the sun only for transport rather than as a storage location.
11. The battery must not be subjected to mechanical impact. However, if this should happen, the battery must be checked by the manufacturer. Contact your Sunrise medical authorized dealer. You must not continue to use a damaged battery.
12. If damaged or defective, the battery must be singled out and checked. Please contact your Sunrise Medical authorized dealer and discuss with them the next steps with regard to return and repair. The defective/damaged battery must not be used again or opened.
13. Always ensure that the battery is kept clean and dry.
14. Charge battery on a fire-and-heat-resistant surface. Do not place easily flammable or flammable objects close to the battery.
15. Mishandling can lead to overheating, fire, or explosions.

Safety instructions and precautions on how to store the battery:

WARNING!

1. Protect the battery immediately upon separating from the battery charger. Never allow any moisture or foreign particles (e.g. metal fragments, small nails, filings, or other conductive metals) to get into the battery.
2. Do not expose the battery to moisture of any kind during storage (water, rainwater, snow, etc.).
3. Before storing it, charge the battery and check its charge status every 3 months.
4. Store the battery in a dry location where it is safe from damage and unauthorized access.
5. To achieve the optimum battery service life, it should be stored at a temperature from 10°C (50°F) to 25°C (77°F) and at a humidity of 20% to 75%.
6. Battery storing conditions can be found in Section 12 Technical Specifications.
7. Avoid direct sunlight.
8. When the battery is not in use, recharge it at least every 12 weeks to prevent damage.

Safety instructions and precautions on the charging process:

NOTE: Occasional use of the wheelchair prior to complete charging indication is acceptable if the need is urgent.

WARNING!

1. The battery charger is intended for indoor use and is not to be exposed to rain or other sources of moisture.
2. Only charge the battery in a space at least twice its volume with sufficient ventilation so that there is no hazard due to build-up of flammable gas.
3. Do not charge the battery in the presence or vicinity of flammable liquids or gases.
4. Do not expose the battery to moisture of any kind during charging (water, rainwater, snow, etc.).
5. Do not carry out the charging process in rooms where moisture may affect the battery.
6. The battery must only be charged at temperatures between 0°C (32°F) and 40°C (104°F). If you attempt to carry out a charging process outside of this temperature range, the battery mechanism automatically switches off the charging process.
7. Only use the designated charger to charge the battery. Your Sunrise Medical authorized dealer can provide the relevant information.
8. Off-board battery chargers are not to be carried on wheelchairs.
9. Only batteries of the specified type and capacity are to be charged. See Section 12 Technical Specifications for battery type.

DANGER!

1. Using an unsuitable battery charger can lead to malfunction and result in the battery having a limited service life. There is also a danger of fire and explosion.
2. When the charging process is complete, disconnect the charger from the electrical socket first before disconnecting it from the battery.
3. Ensure adequate air circulation as soon as the battery is charged. In principle, only charge the battery under supervision.
4. Damaged batteries must not be recharged or used any further.
5. Damaged battery chargers (damage to the plug, housing, cable) must not be used.
6. The charger casing will get hot during its normal operation.

Safety information and precautions on how to transport and ship the battery:

⚠️ WARNING!

1. Lithium-ion cells are used in the battery. Transport and shipping of the battery are, therefore, subject to all applicable statutory requirements, which must be strictly observed. For instance, a defective battery must never be transported by plane.
2. If your battery is defective, take it personally to your Sunrise Medical authorized dealer as shipping lithium-ion batteries by post or other carriers is subject to strict rules and regulations. Once again, we recommend that you contact your Sunrise Medical authorized dealer.
3. As transport regulations may change annually, we strongly recommend that you consult your travel operator, airline, or shipping line before you set out on your trip in order to learn about the current applicable regulations. A defective battery must not be taken on a plane or put in your luggage.

NOTE:

- If your battery is fitted to the pull device when being transported, transport regulations apply in accordance with UN3481.
- Discuss transportation with your Sunrise Medical authorized dealer prior to shipping.

Safety information and precautions on the charger:

⚠️ WARNING!

1. Before starting the charging process, read and follow all instructions and precautions enclosed with the charger and the following precautions and safety information.
2. Only use the designated charger to charge the battery. Your Sunrise Medical authorized dealer can provide the relevant information.
3. When the charging process is complete, we recommend disconnecting the charger from the electrical socket first before disconnecting it from the battery.
4. Do not expose the charger to moisture of any kind during charging (water, rain water, snow, etc.).
5. Do not carry out the charging process in rooms where moisture may affect the charger.
6. Be aware of condensation. If the charger is brought from a cold room into a warm room, condensation may form. In this case, refrain from using the charger until all condensation has dissipated. Please note that this may take several hours.
7. Never carry the charger by its power cable or the charger cable.
8. Never tug at the power cable to disconnect the charger from the electrical socket.
9. Never subject cable and plug to any pressure. Overstretching or bending the cable, pinching a cable between a wall and a window frame or placing heavy objects on a cable or a plug may result in electric shock or fire.
10. Lay the power cable and the attached charging cable so that nobody can step on it or trip over it and so both cables are protected against any other harmful effects or stress.
11. Do not operate the charger if the power cable, the charging cable, or the plugs attached to the cables are damaged. Damaged parts must be replaced immediately by the Sunrise Medical authorized dealer.
12. Do not use or disassemble the charger when it has received a hard blow or was dropped or damaged in another way.
13. The charger must not be used by children.
14. Never attempt to disassemble or modify the charger.
15. Do not cover the charger during the charging process or place any objects on top of the device.
16. Never connect the terminals of the charging plug with any metal objects.
17. Ensure that the plug is firmly inserted in the socket.
18. Never touch plugs with wet hands.
19. Do not use the plug of the charger and/or the electrical plug if they are wet or dirty. Before inserting it, clean the plug using a dry cloth.

7.3 Waking up the battery

After 7 days of not using the F35 the battery will go into storage mode to save energy and protect the battery from self-discharge.

To wake up the battery from storage mode please press the On button on the left side of the tube then charge the battery to 100%.



7.4 Charging the battery

Fully charge the battery before its first use. The battery can be charged at any capacity without adversely impacting its service life. The battery achieves its maximum service life when it is charged at an ambient temperature of between +10°C and +25°C (+50°F and +77°F).

1. To charge, connect the battery to the charger delivered with the product. Remove the cap from the charging socket of the battery, then plug the charging plug into the charging socket.
2. Now plug the main plug of the charger into a socket.
3. When charging, a single green LED light on the charger indicates that the charger is powered on.
4. It takes approximately 2 hours to fully charge a battery that has less than 20% charge.

NOTE:

- Before inserting the plug in the socket, ensure that both parts are clean and there are no metallic particles on them. If you detect such particles, use a dry and clean cloth to remove them.
- During the charging process, the pull device cannot be used.

⚠️ WARNING!

1. The charging process ends automatically as soon as the battery is fully charged. This avoids overcharging.
2. Do not leave the F35 unattended while charging.
3. Do not leave the charger connected to the electrical socket any longer than necessary.
4. When the charging process is complete, disconnect the charger from the electrical socket first before disconnecting it from the battery.
5. Before using the device, always check the charge status of the battery.
6. The battery should be fully charged prior to use in order to provide motorized support at all times.
7. The battery may only be charged in a dry room at temperatures between 0°C (32°F) and 40°C (104°F).
8. We recommend charging the battery fully before longer periods of storage, eg, before a winter break and re-charge regularly (approximately every 12 weeks).

7.5 Troubleshooting

1. Battery is not charging:
 - Check the connection from the charger to the electrical socket.
 - Check the connection from the charger to the battery.
 - Ensure that the battery is charged within the specified environment temperature range.

8.0 TRANSPORTATION AND SECURITY

8.1 Transport in a car

DANGER!

The pull-device is not tested and approved according to ISO 7176-19. It is therefore not allowed to transport the user in the wheelchair with the F35 docked in a car. When transporting a combined unit made up of a pull device and wheelchair vehicle, the user must transfer onto the vehicle seat and must not sit on the combined unit. The combined unit itself (without user) must be tied down during transportation and secured against slipping.



This label on the product indicates that the pull device is not tested and approved according to ISO 7176-19. It is therefore not allowed to transport the user in the wheelchair with the F35 docked in a car.

Failure to heed this warning could result in damage to the device or the wheelchair, and result in risk of injury or death to the user or other occupants in the vehicle.

WARNING!

1. Always use a properly secured vehicle seat.
2. The product and all its components must be secured during transport so that they are not damaged (e.g. by falling over) and do not become any risk to other people.

CAUTION!

1. When loading make sure that the cables are not caught up, become kinked, or otherwise damaged.
2. The pull device may not be used with damaged cables.

8.2 Foldable handlebar for transport and storage:

1. The handlebar of the F35 can be folded by pulling the release pin (Fig. 8.1 - A) on the front and back of the handlebar at the same time.
2. The handles will lock in folded position (Fig. 8.2). To unfold please pull the release pin again.



Fig. 8.1

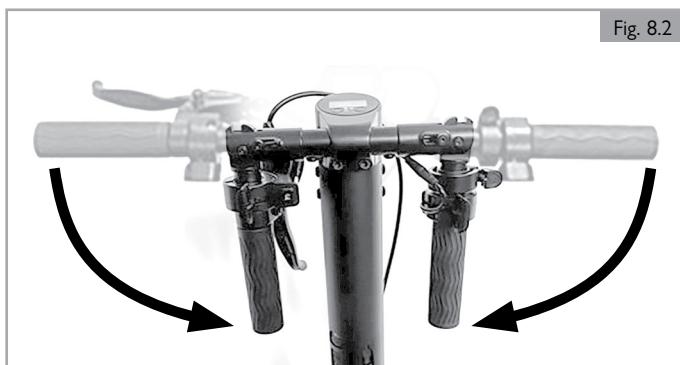


Fig. 8.2

8.3 Security

1. To protect your pull device against theft and also against unauthorized use, please use a suitable lock, such as those designed for bicycles.
2. For extra security activate the password protection in the menu (see section settings PIN check).

8.4 Transport in an airplane

Shipping lithium-ion batteries or taking them with you on airplanes is strictly regulated. The guidelines may vary depending on the airline. In all cases, contact your airline or carrier, before you transport or want to send a device which operates on lithium-ion batteries on an airplane.

WARNING!

1. The battery of the Empulse F35 contains lithium-ion cells. For shipping or transportation, you must comply with the relevant legal guidelines.
2. The guidelines for shipping lithium-ion batteries or transportation in an airplane may change. It is essential that you contact your airline or travel operator in order to obtain information about the current guidelines before you start a trip or plan shipping.
3. Defective batteries cannot be transported in an airplane under any circumstances.
4. If your battery is defective, please contact your Sunrise Medical authorized dealer to find out how to proceed. In this case, special conditions apply for transporting hazardous products.
5. In all cases switch the battery off for transportation and protect the contacts on the underside of the battery against short circuiting.

8.5 Switching the battery off for transportation in a passenger airplane

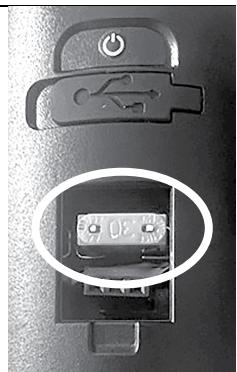
WARNING!

Make sure the device is switched off before removing the fuse.

For transporting the F35 with inbuild battery in an airplane, remove the rubber piece (FUSE) from the battery housing.



Then Remove the Fuse from the battery.



To add the fuse again please follow the removing instructions in reverse order.

WARNING!

When adding the fuse back again sparks could appear.

NOTE: Always switch the F35 off when not being used.

9.0 MAINTENANCE AND CLEANING

The device's lifespan is dependent on it being well maintained.

For information concerning specific settings, maintenance, or repair work, please contact your Sunrise Medical authorized dealer. Always ensure you mention the model and year of manufacture and identification number provided on the identification plate of the device when contacting your Sunrise Medical authorized dealer.

⚠ CAUTION!

The device should be serviced by your Sunrise Medical authorized dealer once a year or, in the case of intensive use, every six months. For a list of approved authorized dealers in your area please contact Sunrise Medical Customer Service.

The contact details of your local Sunrise Medical Service Center can be found on the inside front cover of this booklet.

Website addresses are on the back cover.

9.1 Fitting and repairing the tire

The Empulse F35 is equipped with a special tire which requires special tools to replace. If the tire is worn, please contact your Sunrise Medical authorized dealer to send the device back to Sunrise Medical for tire replacement.

⚠ DANGER!

Make sure you use the right torque for the wheel nuts on the left and right of the fork (40 Nm [29.5 ft-lbs]).

9.2 Regular maintenance

Your pull device is subject to high levels of stress when being used, and requires regular checks in order to guarantee your safety

⚠ WARNING!

1. Loose fasteners should be re-tightened according to the assembly instructions.
2. If a broken or loose component is found, discontinue use immediately and contact your Sunrise Medical authorized dealer for replacement.

⚠ WARNING!

1. If you are in any doubt about the performance requirements of your device, contact your Sunrise Medical authorized dealer.
2. After performing any maintenance or repairs on the device you must ensure that it is functioning correctly before it is used.
3. All fasteners must be replaced like for like using the correct length, tensile strength, and materials.

4. When replacing self-locking nuts, or nuts/studs secured with a thread locking solution, ensure that a suitable thread locking solution is reapplied to the fastener.
5. Failure and cracking can happen due to aging. Inspect the device regularly in order to detect any damage due to aging.
6. Do not reuse fasteners.

Daily checks

Perform the daily check routine before driving as described in section 3.3.

Monthly checks

Perform the monthly check routine before driving as described below.

⚠ DANGER!

Carry out the visual inspections/maintenance as described below regularly, at least every month, and ideally before you set off each time:

1. Make sure that all screws and fasteners are secure.
2. Functional and safety check of all lights (if fitted).
3. Functional/safety check of the docking system (pull device and wheelchair) to make sure they are secure and check for wear.
4. Check the brake pads for wear and that the brakes work properly. The disc brake must be re-adjusted/maintained regularly by a dealer.
5. Check function of the disc brake (get your dealer to replace cables and brake pads if needed).
6. Visual inspection of the fork and intermediate subframe for damage (e.g. cracks, corrosion, deformation, etc.).
7. Visual inspection of the wheelchair frame and back tubes for damage (e.g. cracks, deformation, etc.).
8. Check tires (tread, cracks, damages) and replace if needed.
9. Check the spoke tension and the rim and hub of all wheels (including wheelchair wheels) for damage.
10. Check all cable and electrical connectors.
11. Check that the steering head and handlebar are secure.

9.3 Electrical system

If fault codes arise, or the electrical system of the pull device does not function as intended:

1. Contact your Sunrise Medical authorized dealer.
2. Switch the pull device on and push it forwards 39-in (1 m) by hand – check that it is working again.
3. Check all freely-accessible plug connections for dirt or moisture. If necessary, clean the contacts with a clean, dry cloth. Use contact spray if necessary, but do not use lubricating or penetrating oil to clean the contacts under any circumstances.

	End User / Caregiver		Sunrise Medical Authorized Dealer
	Daily*	Monthly	Annually
Maintenance and Inspection Schedule			
Daily Check routine as described in Section 3.3	<input checked="" type="checkbox"/>		
Monthly Check routine as described in Section 9.2		<input checked="" type="checkbox"/>	
Complete inspection, safety check, and service should be made by a Sunrise Medical authorized dealer			<input checked="" type="checkbox"/>

* Daily = Before each use of the device.

If fasteners are found to be loose a Sunrise Medical authorized dealer should tighten the fastener to the torque setting per size detailed below, unless stated otherwise in all appropriate owner's manuals or instruction sheets (if applicable).

- M6 Fasteners = 7 Nm [62 in-lbs]
- M5 Fasteners = 5.8 Nm [51 in-lbs]
- M4 Fasteners = 2.2 Nm [19.5 in-lbs]
- M3 Fasteners = 1.0 Nm [8.9 in-lbs]
- M2 Fasteners = 0.9 Nm [8.0 in-lbs]

9.0 MAINTENANCE AND CLEANING

9.4 Cleaning

1. The pull device should be cleaned regularly and after each bigger journey with commercially-available, household cleaning agents and a little water.
2. The display, battery, and all other electronic components may only be cleaned by wiping with a damp (not wet) cloth.
3. The drive wheel can be cleaned with a soft sponge or a soft brush.
4. The clamps and the docking system can be cleaned with water, a soft sponge, or a soft brush (recommended after each ride).
5. After cleaning a penetrating oil can be used to lubricate the moving parts of the docking mechanism.

⚠ CAUTION!

1. Never use steam or high pressure to clean the device.
2. Never use any abrasive cleaning agents or aggressive, acidic cleaners.
3. Make sure that water will not get into contact with the electrical connectors.

⚠ CAUTION!

Ensure that you dry all parts of your device if it becomes wet or damp after cleaning or if it is used in a wet or damp environment.

⚠ WARNING!

Regular cleaning is important to avoid unwanted odor and to prevent contaminants from spreading.

⚠ CAUTION!

Do not apply too much cleaning fluid or chemical as an excessive amount of cleaning fluid can result in corrosion, degradation, or impair the structural integrity of the device.

⚠ DANGER!

It is important that should the device be used by more than one person it is cleaned thoroughly to ensure there is no cross infection.

Hygiene measures when being re-used

When the device is to be reused, it should be prepared carefully and be wiped and treated with spray disinfectant on all surfaces which could come into contact with the user. Use a liquid, alcohol-based disinfectant which is suitable for medical products and devices. Please pay attention to the manufacturer's instructions of the disinfectant you are using.

⚠ CAUTION!

1. Do not use solvents, bleaches, abrasives, synthetic detergents, wax polishes, or aerosols.
2. Disinfectants may be used in dilution as specified by the manufacturer.
3. Ensure surfaces are rinsed with clean water and dried thoroughly.

⚠ WARNING!

1. Always read the label on any commercial or domestic cleaning substances.
2. Always follow the instructions carefully.

9.5 Storage

Battery:

1. Protect the battery immediately upon separating from the battery charger. Never allow any moisture or foreign particles (e.g. metal fragments, small nails, filings, or other conductive metals) to get into the battery.
2. Avoid storage in humid areas to prevent corrosion on the plug contacts.
3. Do not expose the battery to moisture of any kind during storage (water, rainwater, snow, etc.).
4. Before storing it, charge the battery and check its charge status every 3 months.
5. Store the battery in a cool and dry location where it is safe from damage and unauthorized access.
6. To achieve the optimum battery service life, it should be stored at a temperature from 10°C (50°F) to 25°C (77°F) and at a humidity of 20% to 75%.
7. For short term storage (1 week), do not keep your battery in places where the temperature exceeds 50°C (122°F) or is less than -20°C (-4°F).
8. Avoid direct sunlight.
9. When the battery is not in use, recharge it at least every 12 weeks to prevent damage.

Pulling Device:

1. Store the pull device in a dry place, protected from rain and snow.
2. Cover the pull device during long-term storage in order to protect it from dust.
3. Do not store the pull device at temperatures above 60°C (140°F) or below -20°C (-4°F).
4. If you do not use your pull device for long periods of time, we recommend that you switch your pull device on every 4 weeks and allow the wheel to rotate for approximately 5 minutes at low speed in order to guarantee that the grease that is there is distributed over all bearing positions. This will prevent corrosion of the bearings.
5. After a long period of storage, check that the brakes are working and check the condition of the tires before setting off.

Medium to long term storage

When storing your device for long periods of time (in excess of one week), follow these simple instructions:

1. Fully charge the device.
2. Disconnect the charger.
3. Disconnect the battery fuse.

⚠ WARNING!

Never store your device:

1. Outside.
2. In direct sunlight (plastic parts may discolor).
3. Near a source of direct heat.
4. In a damp environment.
5. In a cold environment

Avoiding all of the above will minimize battery discharge and extend battery lifetime.

When returning the device to use, please reconnect the batteries and fully charge the device.

⚠ CAUTION!

At the end of the life of the device, it should be disposed of following your local disposal and recycling regulations.

10.0 TROUBLESHOOTING

10.1 Troubleshooting

If the device is not working as it should, check the following points:

1. Check whether the battery is charged.
2. Make sure that all the mounting hardware is properly installed and tightened and that the wheelchair casters are off the ground when the F35 is attached.
3. Check that the battery fuse is properly seated in the device, particularly after any airline transportation.
4. Check whether the battery power button has been turned on.
5. Ensure that neither of the brakes is engaged.

If the problem has not been resolved:

Contact your Sunrise Medical authorized dealer.

THIS GUARANTEE DOES NOT AFFECT YOUR LEGAL RIGHTS IN ANY WAY.

Sunrise Medical* provides a guarantee, as set out in the warranty conditions, for devices to its customers covering the following.

SUNRISE GUARANTEE/WARRANTY

1. Sunrise Medical guarantees the F35 device against defects in material and workmanship for 24 months after delivery to the customer, then the affected part or parts will be repaired or replaced free of charge. The warranty will only cover manufacturing defects and does not apply if:
 - a. The device is subject to abuse.
 - b. The device is not maintained as recommended in the owner's manual.
 - c. The device is transferred to a different person from the original owner.
2. **FOR ONE (1) YEAR** - We warrant all Sunrise-made parts and components of this device including: motor and electronic components, against defects in materials and workmanship for one year from the date of first consumer purchase.
3. **FOR SIX (6) MONTHS** - We warrant batteries and chargers for six months from the date of first consumer purchase. Battery warranties are subject to periods set by the manufacturers. However, most of these warranties are subject to a wear and tear clause, and if you genuinely wear out your batteries in 6 months, it will not be possible to obtain a replacement under warranty.
4. **LIMITATIONS**
 - a. Claims from this warranty shall not arise, if a repair or replacement of a device or a part is required for the following reasons:
 - i. Normal wear and tear on items such as batteries, tires, brake shoes.
 - ii. Damage from neglect, accident, misuse, or from improper installation or repair.
 - iii. Changes or modifications made without Sunrise Medical's express written consent.
 - iv. Damage from exceeding the weight limit.
 - b. This warranty is VOID if the original serial number tag is removed or altered.
 - c. This warranty is non transferrable and only applies to the first consumer purchase of this device through a Sunrise Medical authorized dealer.
 - d. This warranty applies in the USA and Canada only. Check with your Sunrise Medical authorized dealer to find out if international warranties apply.
5. **WHAT WE WILL DO** - Our sole liability is to repair or replace covered parts. This is the exclusive remedy for consequential damages.
6. **WHAT AUTHORIZED DEALER MUST DO** - Obtain from Sunrise Medical, while this warranty is in effect, prior approval for return or repair of covered parts. Contact Customer Service for a Returned Material Authorization (RMA) number and information as to where to return the product. Upon contacting Customer Service please provide Model number, Serial number, description of what is required for service/repair, and any additional information as to reason for service being performed to the device.

7. NOTICE TO CONSUMER -

- a. You must pay the cost of labor to repair, remove, or install parts even if they are covered under warranty.
- b. If allowed by law, this warranty is in place of any other warranty (written or oral, express or implied, including a warranty of merchantability, or fitness for a particular purpose).
- c. This warranty gives you certain legal rights. You may also have other rights that vary from state to state or province to province.
8. This guarantee is subject to the law of the country in which the product was purchased from Sunrise Medical. Check with your supplier to find out if international warranties apply.

* Denotes the Sunrise Medical facility from which the product was purchased.

ADDITIONAL WARRANTY INFORMATION FOR AUSTRALIA ONLY

1. For goods provided by Sunrise Medical Pty Ltd in Australia, our goods come with a guarantee by Sunrise Medical that cannot be excluded under the Australian Consumer Law.
2. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage.
3. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.
4. The benefits to you given by this warranty are in addition to your other rights and remedies under a law in relation to the goods to which the warranty relates.

Record your serial number here for future reference:



(Serial Number Label is located on the frame, as shown.)

12.0 TECHNICAL SPECIFICATIONS

GENERAL DATA	
Operating Voltage	36 Volt
Range of action*	up to 15 km (9.3 miles)**
Maximum speed options	15 kph (9.3 mph)
Climbing power (nominal)	up to 11% (6°)
Flammability standards	Tested according to applicable parts of EN12184
Maximum load	110 kg (242 lbs)
Total weight (including battery and subframe)	From 9 kg (19.8 lbs) (transport weight 7.5 Kg (16.5 lbs))
Maximum dimensions	920mm x 584mm x 610mm (36.2-in x 23-in x 24-in) (height x width x depth). The total dimensions of a wheelchair/pull-device combination can exceed the dimensions of the wheelchair used by 765mm (30.1-in) (in length) and 130mm (5.1-in) (in width).
Protection rating	IPX4
MOTOR DATA	
Wheel size	6.5-in (165mm)
Rated voltage	36 Volt
Power	250 W (Nominal)
Maximum torque	15 Nm [11 ft-lb]
Motor noise	Max. 65±5 dbA in 1 m gap
Warranty	1 year
BATTERY DATA	
Dimensions	Length: 364.5mm +- 2mm (14.4-in +- .08-in) Diameter: 53mm +- 1mm (2.1-in +- .04-in)
Battery type	Lithium-ion, 21700
Rated voltage (nominal)	36 Volt
Capacity (nominal)	4 Ah
Electrical power	144 Wh
Discharge current	15A (continuous)
Charging time	2 hours (approximately at 2.0 A charging current)
Charging temperature range	0°C to 40°C (32°F to 104°F)
Operating temperature	-20°C to 60°C (-4°F to 140°F)
Storage temperature range	-10°C to 45°C (14°F to 113°F) (up to 1 month) -10°C to 35°C (14°F to 95°F) (up to 3 months)
Charging cycles	1000 (70% remaining capacity after 350 cycles of normal use)
Warranty	6 months
Functions	Wake up button from storage mode
USB port	USB A - 1,5A Max. Charging Current

BATTERY CHARGER	
Type	Off-Board Charger
Plug	NEMA 1-15 ungrounded (Type A)
Compatible batteries	Only applicable for Lithium-Ion batteries. Only use batteries intended for this product.
Input	100-240V AC
Output voltage	42 Volt
Charging current	2.0 A
Protection rating	IPX1
CONTROLLER	
Rated voltage	36 Volt
Maximum current	15 A
DISPLAY	
Displays	Charge level of battery
	Drive level
	Odometer
	Current speed in kph/ mph
	Error Codes
	Estimated remaining range
	Acceleration mode
	Light indication
	Cruise Control Indication
Function	Selection of drive levels (1, 2, 3, R), Acceleration mode, Light On/Off switch
FUSE	
Type	Mini Fuse
Ampere rating	30A
Voltage rating	58VDC

* Note: The range depends on terrain and the prevailing driving conditions. The specified maximum range of action is valid for optimum travel conditions (level terrain, a newly recharged battery, ambient temperature of 20°C (68°F), smooth travel, etc.). At lower temperatures, the range of the power assist device may be lower than the range specified.

** According to ISO 7176-4.

Sunrise Medical S.r.l.
Via Riva, 20 – Montale
29122 Piacenza
Italia
Tel.: +39 0523 573111
www.SunriseMedical.it

Sunrise Medical AG
Erlenauweg 17
CH-3110 Münsingen
Schweiz/Suisse/Svizzera
Tel: +41 (0)31 958 38 38
cs@sunrisemedical.ch
www.SunriseMedical.ch

Sunrise Medical AS
Delitoppen 3
1540 Vestby
Norge
Telefon: +47 66 96 38 00
post@sunrisemedical.no
www.SunriseMedical.no

Sunrise Medical AB
Neongatan 5
431 53 Mölndal
Sweden
Tel.: +46 (0)31 748 37 00
post@sunrisemedical.se
www.SunriseMedical.se

MEDICCO s.r.o.
H – Park, Heršpícká 1013/11d,
639 00 Brno
Czech Republic
Tel.: (+420) 547 250 955
Fax: (+420) 547 250 956
www.medicco.cz
info@medicco.cz
Bezplatná linka 800 900 809

Sunrise Medical Aps
Márkærvej 5-9
2630 Taastrup
Denmark
+45 70 22 43 49
info@sunrisemedical.dk
www.SunriseMedical.dk

Sunrise Medical Australia
11 Daniel Street
Wetherill Park NSW 2164
Australia
Ph: +61 2 9678 6600
Email: enquiries@sunrisemedical.com.au
www.SunriseMedical.com.au

Sunrise Medical (US) LLC
North American Headquarters
12002 Volunteer Blvd.
Mount Juliet, TN 37122, USA
Tel: 1-800-333-4000
Fax: 1-800-300-7502
www.SunriseMedical.com



©2025 Sunrise Medical (US) LLC
P/N 259900 Rev. B

Sunrise Medical GmbH
Kahlbachring 2-4
D-69254 Malsch
Deutschland
Tel.: +49 (0) 7253/980-0
Fax: +49 (0) 7253/980-222
www.SunriseMedical.de

Sunrise Medical Ltd.
Thorns Road
Brierley Hill
West Midlands
DY5 2LD
England
Phone: 0845 605 66 88
Fax: 0845 605 66 89
www.SunriseMedical.co.uk

Sunrise Medical S.L.
Polígono Bakiola, 41
48498 Arrankudiaga – Vizcaya
España
Tel.: +34 (0) 902142434
Fax: +34 (0) 946481575
www.SunriseMedical.es

Sunrise Medical Poland
Sp. z o.o.
ul. Elektronowa 6,
94-103 Łódź
Polska
Telefon: + 48 42 275 83 38
Fax: + 48 42 209 35 23
E-mail: pl@sunrisemedical.de
www.Sunrise-Medical.pl

Sunrise Medical B.V.
Defensiedok 20
3433 NE Nieuwegein
The Netherlands
T: +31 (0)30 – 60 82 100
F: +31 (0)30 – 60 55 880
E: info@sunrisemedical.nl
www.SunriseMedical.nl

Sunrise Medical HCM B.V.
Vossenbeemd 104
5705 CL Helmond
The Netherlands
T: +31 (0)492 593 888
E: customerservice@sunrisemedical.nl
www.SunriseMedical.nl
www.SunriseMedical.eu (International)

Sunrise Medical S.A.S
ZAC de la Vrillonnerie
17 Rue Mickaël Faraday
37170 Chambray-Lès-Tours
Tel : + 33 (0) 2 47 55 44 00
Email: info@sunrisemedical.fr
www.sunrisemedical.fr

Sunrise Medical Canada Inc.
1000 Creditstone Rd., Unit #2
Concord, ON, L4K 4P8
Canada
Phone: 1-800-263-3390
Fax: 1-800-561-5834
www.SunriseMedical.ca