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ibot® USER MANUAL

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4. Add a Clear plastic cover.
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ibot®

by

MOBIUS MOBILITY LLC

User Manual

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CONTENTS

Indications For Use 7
- Contraindications 9
- Symbols 10
- Safety 12
  - Instructions for You 12
  - Instructions for Assistants 13
- ibot 4000 Adverse Events Reported . 14
  - Adverse Events Reporting 16
- Warnings and Cautions 17
  - Driving 18
  - Transitioning 21
  - Electromagnetic Interference 22
  - Component 23
  - Battery and Charging 24
- Conventions 26
- Terminology 27

ibot Components 29
- Seating System 30
- Power Base 31
- Rear View 32
- Accessories 33
- User Controller 34
- Freewheel Lever (brake release) 35
- Armrests 36
- Legrests 37

User Controller Functions 39
- Display 41
  - Notification Banner 41
  - Home Screen 43
  - Driving Mode and Speed Gauge 43
  - Action Required Prompt 44
  - Fault and Power Conditions 45
  - Battery Charging Status 46

Battery Status 47
Power/Quick Stop Button 47
Power ON 48
Quick Stop 48
Power OFF 49
Menu Button 49
Driving Mode 50
Transitioning Flow Chart 53
Seat Adjustments 54
Seat Adjustment Accessibility 56
Standard Mode Adjustments 57
4-Wheel Mode Adjustments 57
Balance Mode adjustments 57
Stair Mode Adjustments 57
Speed Setting 58
Speed Adjustment Wheel 59
Settings Menu 60
Service Information 61
Service Code 62
Brightness 62
Auto Brightness 62
Manual Brightness 64
Silence Feature 64
Service Update 65
Forced Power OFF (FPO) 66
Power On Passcode 67
Hill Charge 70
Horn/Mute Button 71
Joystick 72
Driving Mode Shortcut Controls 73
To Transition UP or DOWN ONE MODE: 73
To Transition UP or DOWN Between Standard and Balance: 74
Seat Adjustment Shortcut Controls . 74
Driving Modes and Techniques 75
iBalance Technology 76
Overview 77
Environments For Use 78
Slopes and Obstacles 80
Surfaces to Avoid 82
All modes avoid: 82

All modes except 4-Wheel mode avoid: 82
4-Wheel mode avoid: 82
Stair mode avoid: 83
Standard Mode **84**
4-Wheel Mode **84**
Terrain Following 85
4-Wheel Driving Technique **85**
Climbing Up Obstacles 86
Climbing Down Obstacles 86
Balance Mode **87**
Balance Driving Technique **88**
Stability 90
Automatic Transition 90
Balance Toe Stuck 91
Stair Mode **92**
Stair Assessment **93**
Handrails 94
Stairways and Landings **95**
Step Geometry **97**
Step Shape and Size Requirements 98
Low Rise 99
High Rise 99
Long Treads 99
Stair Climbing Technique **100**
Entry to Stairs - Solo Stair 101
Cluster Safety Lock **101**
Solo Stair Climbing **102**
Solo Climbing Upstairs 103
Solo Climbing Downstairs 106
Assisted Stair Climbing **109**
Assisted Climbing Upstairs 111
Assisted Climbing Downstairs 114
Remote Mode **117**
Handling **119**
Driving Range **120**
Freewheel Mode **121**
Transfer In and Out of the ibot **122**
Transport **123**
Securing to A Vehicle 124
Traveling by Air with the ibot 125
Lift The Unoccupied ibot 126

Warnings, Cautions, and Alerts 127
About Warnings, Cautions and Alerts 128
Auditory Alerts 130
Low Battery 131
Overheating 131
Service Required 132
Maintenance 135
Maintenance Frequency 136
Battery Charging 138
Remove Battery Packs 141
Install Battery Packs 142
Seat Component Adjustments 143
Legrest Length 144
Legrest Wedge 144
Install the Legrest Wedge 145
Remove the Legrest Wedge 145
Heel Loop 146
Footplate Angle 146
Armrest Height 147
Armrest Forward/Back 147
Lateral and Lumbar Backrest Wedges .148
Lateral Supports 149
Installing and Adjusting Lateral Supports 149
Swing Away Feature 151
Contoured Headrest 151
Installing and Adjusting 151
Calf Panel 153
User Controller Remove and Reinstall 153
Swing User Controller Out 154
Swing User Controller IN 155
Remove User Controller from Swing Arm 155
Disconnect User Controller Cable 156
Connect User Controller Cable 157
Reinstall User Controller 158
Daily Inspection 159
Cleaning 161
Cleaning Metal and Painted Parts 161
Cleaning The Display 161
Cleaning Upholstery 162
Cleaning Methods to Avoid 162

Tire Care 163
Check Tire Pressure and Condition 164
Replace Tire or Tire Inner Tube 164
Storage 168
Troubleshooting 169
Restart 169
Battery Charging Fault 170
Operation at Low Temperature 171
Communication Lost 171
Display Frozen 172
ibot Tipped Over 173
Total System Shutdown 174
Standard Mode Recovery 175
Stair Mode Recovery 176
Method 1 176
Method 2 176
Method 3 176
Mode Unavailable 180
Processor Error 180
Technical Support 181
Customer Replacement Parts 182
Repair of defective units 182
Warranty 183
Appendix 187
Technical Specifications 188
Electromagnetic Interference (EMI) Specifications 194
GLOSSARY 195
INDEX 198

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INDICATIONS FOR USE

The ibot by MOBIUS MOBILITY LLC is intended to provide indoor and outdoor mobility to persons restricted to a sitting position who meet the requirements of the user assessment and training certification program. The device is intended to climb stairs. Companions who are required to provide assistance during Assisted Stair Climbing Mode must meet the requirements of the training certification program.

Read the User Manual

Do not operate the ibot without reading and understanding the User Manual.

Do not attempt to install components or maintain the device without reading and understanding the User Manual.

If you do not understand the warnings and caution instructions, contact Technical Support before using the device.

The ibot is the next generation of the ibot Mobility System family. The ibot leverages the innovative technology introduced by the ibot 3000 and 4000 mobility systems, allowing you to go places and do things not possible with any other single mobility device.

Your clinician will program the ibot for your specific needs. Once programmed, the ibot is intended for use only by the user it was programmed for.

Changes to body shape and adjustments to your seating may occur over the lifetime of your ibot. If either of those occurs, refitting of your center of gravity (CG Fit) may be needed, and you should contact your clinician.

Total weight capacity is greater than 50 lbs. (22.5 kg), and should not exceed 300 lbs. (136 kg), including a maximum of 20 lbs. (9 kg) for carrying items.

Training is provided when your customized device is delivered. This training is essential in teaching you safe driving techniques, proper use, and device maintenance.

CONTRAINDICATIONS

Do not use the device if you:

- Weigh less than 50 lbs. (25 kg) or more than 300 lbs. (136 kg).
- Have lost consciousness or had a seizure in the past 90 days (there are some exceptions, ask your Clinician for details).
- Have a condition where jarring forces could cause fractures.
- Have not successfully completed the user training program.
- Need a mechanical ventilator.

WARNING

Heart Condition:

If you have heart problems, the use of both arms to solo climb stairs may induce strain that produces fatigue, palpitations, shortness of breath, or angina (chest pain). You should get clearance from your clinician before using the ibot. You may need to have an assistant help you with stair climbing.

WARNING

Pulmonary Condition:

If you have breathing problems, the use of both arms to solo climb stairs may produce shortness of breath. You should get clearance from your doctor before using the ibot. You may need to have an assistant help you with stair climbing.

WARNING

Health Changes:

If you have a significant change in your vision, strength, or balance, this may affect your ability to drive the ibot. See your clinician to discuss if this product is still appropriate for you.

SYMBOLS

The following table lists and defines any symbols that may appear on the device or the device packaging.

Table 1: *Symbols*

Symbol	Definition
Rx Only	This symbol indicates the device is available by prescription only.
	This symbol indicates the maximum occupant mass.
RoHS	This symbol indicates the device is RoHS compliant.
	This symbol indicates a device should be recycled.
	This symbol is used to instruct you to refer to this manual prior to using the system.
	This symbol indicates the medical device manufacturer.
	This symbol indicates the date when the medical device was manufactured.
LOT	This symbol indicates the manufacturer's lot code so that the lot can be identified.
REF	This symbol indicates the manufacturer's catalog number so that the medical device can be identified.

Symbol	Definition
SN	This symbol indicates the manufacturer's serial number so that a specific medical device can be identified.
	This symbol indicates a medical device that needs to be protected from moisture.
	This symbol indicates that equipment is Type BF which indicates it is electrically isolated and can safely contact a person's skin without risk of electric shock.

Symbol	Definition
	This symbol indicates that equipment should not be disposed of in the trash. • Do not dispose of this device as unsorted municipal waste. • Collect this device separately. • Use the collection and return systems available to you.
⎓	This symbol indicates direct current. The symbol can indicate either the type of output current or the required input current.
MR	This symbol indicates that a device is not safe to have near an MRI.

SAFETY

Every Mobility System must be operated with appropriate safety considerations. There are additional safety rules you must follow to obtain full mobility and value from your ibot.

This User Manual contains two types of safety messages:

⚠ WARNING

Indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.

⚠ CAUTION

Indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

Additional and reinforcement of warnings, and cautions appear throughout the User Manual where appropriate.

INSTRUCTIONS FOR YOU

You play the central role in the safe operation of the ibot and the safety of others around you. Safe operation of the ibot depends upon your good judgment. There are important safety duties that must be performed by you and the people who may assist you.

The device offers significantly more capability than a traditional power wheelchair and requires more training and awareness to operate safely. When you drive the device, you need to assess situations and make decisions. If you fail to take proper and timely action, you risk injuring yourself or others around you and damaging the device.

1. Drive safely and follow the operating procedures, safety rules, and driving guidelines provided in this manual.

2. Heed all caution and warning messages printed in this manual. Use the procedures and guidelines provided in this manual to respond quickly and correctly to caution and warning signals you see or hear when driving the device.
3. Always select the driving mode best suited to your current driving needs, the terrain, and any other driving conditions.
4. Keep your device in good working condition. Maintain and service it according to the procedures in this manual and warranty recommendations. If the device appears damaged or unsafe to operate, do not drive and contact Technical Support.
5. Do not attempt to modify the hardware, software, components, or programming of your device.

INSTRUCTIONS FOR ASSISTANTS

Assistants must be trained for assisted stair climbing.

Stair climbing assistants must become familiar with the device, including thorough understanding of operating procedures and safety rules.

Stair climbing assistants must demonstrate ability to perform both the physical and decision making tasks you request of them.

IBOT 4000 ADVERSE EVENTS REPORTED

A review of the FDA's MAUDE database was performed and the following device-related adverse events were reported for the iBOT 4000 Mobility System:

Table 2: *Adverse Events Report*

Known Use Problem	Description
Improper stair climbing technique	Multiple users reported improper stair climbing technique leading to a fall.
Loss of traction	Multiple users reported a loss of traction either in balance mode or while attempting curbs leading to a fall.
Inadequate space for transition	Multiple users reported performing a transition in limited space and the device getting caught on the environment leading to a fall.
Drove into object	Users have reported driving into or over objects like a bike or a stack of bricks leading to a fall.
Sudden CG shift	Users reported a sudden change in center of gravity (trying to catch a falling object) leading to an auto transition on an object and a subsequent fall.
Stuck joystick	Users have reported a stuck joystick leading to driving into an object.

Known Use Problem	Description
Attempted obstacle in mode other than 4-Wheel	Users have reported driving over an obstacle (e.g. a curb) in a mode other than 4-wheel mode leading to a fall
Struck by vehicle while in device	Users have reported being hit by cars.
Improper ramp slope	Users have reported driving on a slope that was too steep leading to fall.
Improper seating position	Users have reported improper seating positions leading to a pressure sore
Operating with broken or modified equipment	Users have reported operating with a broken or modified device leading to a fall or their feet slipping off the footrests.

Known Use Problem	Description
Device pushed over	Users have reported that the device was intentionally pushed or rocked leading to a fall.

ADVERSE EVENTS REPORTING

If an event occurs while you are using your ibot please contact (Customer Service Information goes here). Please be prepared to provide as much information as possible related to the event. This will be a great help for us.

To increase the product quality and to ensure that our device is safe through the whole life cycle we need you to let us know if any reportable event occurs.

To meet that requirement and to ensure that our products remain safe in your hands we need your assistance.

We hope you never need to use the information on this page but if there is an event please contact us.

The FDA encourages healthcare professionals, patients, caregivers and consumers to submit voluntary reports of significant adverse events or product problems with medical products to MedWatch, the FDA's Safety Information and Adverse Event Reporting Program or through the MedWatcher mobile app.
https://www.fda.gov/MedicalDevices/Safety/ReportaProblem/#voluntary

WARNINGS AND CAUTIONS

CAUTION

Federal law restricts this device to sale by or on the order of a practitioner licensed by the law of the State in which they practice.

WARNING

Pediatric Use:

The safety and effectiveness of the ibot® has not been established for patients or assistants less than 18 years of age.

WARNING

Unexpected Behavior:

If the device exhibits unexpected behavior such as unintentional movement, turn the device OFF as soon as it is safe to do so.

WARNING

No Unauthorized Drivers:

The device may only be operated by the person for whom the ibot has been configured and CG Fit. Personal injury could result from operation by unauthorized persons.

WARNING

Weight Capacity:

Never operate the device if the combined weight of you, your accessories, and your personal effects exceeds 300 pounds (136 kg) or if you weigh less than 50 pounds (25 kg).

WARNING

Weight Capacity:

Never add more than a total of 20 pounds (9 kg) of personal effects to the device. The iBalance Technology may not function properly.

WARNING

Refitting Center of Gravity:

CG fit must be done with your clinician in the event you lose or gain significant weight.

DRIVING

WARNING

Driving a Motor Vehicle:

The ibot has not been evaluated as a seat in a motor vehicle. Do not sit in the ibot while a motor vehicle is in operation.

WARNING

Obey Pedestrian Traffic Laws:

Be aware that it may be difficult for motorists to see you in the ibot. Follow pedestrian traffic laws when driving outdoors.

CAUTION

Impaired Judgment:

Never operate the device under the influence of alcohol, drugs, or medication that might impair your judgment.

WARNING

No Riders:

Never operate the ibot with another person on the device or in your lap. The device has been CG Fit to your weight and body size. Different weights and distributions could affect device stability.

WARNING

Entanglement:

Never allow body parts, personal effects, or the positioning belt to touch moving components when you are driving or stair climbing.

Entanglement of the wheels or wheel clusters could cause the device to tip.

WARNING

Escalators and Moving Sidewalks:

Never operate the device at any time or in any mode on moving surfaces such as escalators or moving sidewalks.

Motion may cause unexpected device movement.

WARNING

Operation in Moving Environments:

Use only Standard mode when in a moving environment (i.e. Train or Boat). Motion of the environment may result in a dynamic response of the iBOT in other modes which could cause the device to tip.

WARNING

Environments of Use:

Do not operate the device outside of its claimed safe usage environment for slopes and obstacles. Use caution when driving near unprotected ledges, drop-offs, or elevated surfaces.

The device may tip over.

WARNING

Debris in the Wheel Cluster:

It may be possible for a piece of debris to become wedged between the wheel rim and wheel cluster housing, or the wheel cluster housing and the power base. This could cause the device to tip.

Be aware when driving through loose, deep terrain, such as rocks or gravel.

WARNING

Remote Mode Operation:

Never sit in the device or place items on the device when operating in Remote Mode.

WARNING

Hazardous Obstacles:

Never climb obstacles that are unstable, irregular, slippery, or that cannot support the weight of the device, you, and your personal effects.

WARNING

Climbing Obstacles:

To avoid getting stuck against an obstacle in standard or balance mode, approach obstacles at a steady, moderate speed or transition to 4-wheel mode.

Only climb in the forward direction perpendicular to obstacles.

WARNING

Driving on Slopes

Drive straight up or straight down slopes. Driving across or turning on slopes may cause the device to tip.

WARNING

Stair Geometry

Do not attempt to climb stairs that are outside of the specified geometry. The device could fall over. Personal injury or death could result.

WARNING

Stair Climbing

Risk of falling down stairs. You could be seriously injured or killed if you lose control while stair climbing. Stair-climbing entails a higher degree of risk and requires greater ability of you or your assistant than driving in other modes. Stair-climbing is dangerous if you or your assistant is not aware of, or does not follow, the manufacturer's instructions for use. Always use proper stair climbing technique. Do not attempt to climb stairs that are outside of the specified geometry. Make sure you or your assistant is not distracted.

WARNING

Exiting Stair Climbing

Do not switch to 4-Wheel mode until at least one set of wheels is on the landing. The device can fall over if you drive down stairs in 4-Wheel mode. Personal injury or death could result.

TRANSITIONING

WARNING

Entering Freewheel

Do not put your iBOT in freewheel mode while on an incline. This could cause the device to roll on its own, causing injury

Do not attempt to put the device in freewheel mode by yourself while seated in it. In order to avoid personal injury do not use freewheel mode without an attendant present.

CAUTION

Moving parts can pinch and crush:

Do not adjust the seat position or any device components if the immediate area of movement is not clear.

WARNING

Transition between Modes:

Make sure you have adequate surrounding space and you transition on level, slip-resistant surfaces.

ELECTROMAGNETIC INTERFERENCE

WARNING

EMC Requirements:

Electromagnetic interference may affect powered mobility device control.

EMI sources such as radio stations, TV stations, amateur radio (HAM) transmitters, two-way radios, and cellular phones can affect powered mobility products.

Be aware of nearby transmitters, such as radio or TV stations, and try to avoid close contact with them to reduce the chance of unintended movement.

WARNING

Modifications to Device:

Be aware that adding accessories or components to or modifying the device may make it more susceptible to EMI interference. There is no easy way to evaluate their effects on the overall immunity of the device.

WARNING

Driving through Theft Detectors:

Due to the frequency used in some electronic article surveillance systems in store or library entrances, you must use Standard mode when driving through them. The device could fall over, shut down, or alarm in other modes.

COMPONENT

WARNING

Footplate Use:

Feet can get trapped or pinched between the wheels and the ground. When operating the device, your feet should always be placed on the footplates.

Care should be taken to avoid obstacles that could impact the footplate, which could cause personal injury.

WARNING

Positioning Belt Use:

Always wear your positioning belt and fasten it snugly when operating the device. You could fall from the device if you do not wear your positioning belt. Personal injury or death could result.

WARNING

Positioning Belt Unoccupied:

The positioning belt is long enough to interfere with the wheels and cluster, while driving unoccupied. When the belt is not in use, connect the two ends, tighten the belt, and stow the excess belt under the cushion.

WARNING

Modifications

Any unauthorized modifications to the ibot or its seating may increase the risk of personal injury.

All modifications to the device must be performed by a qualified service technician.

CAUTION

Adjustable or Removable Parts

Do not lift or move the device or transfer using any of its adjustable or removable parts. There is a risk of pinching or crushing.

WARNING

Transfer Support

Be sure that the power is turned OFF and the freewheel lever is in the locked position before entering or leaving the ibot. Never use the joystick as a handhold or point of support.

Do not use foot plates or armrests as supports when transferring into or out of the ibot. The footplates and armrests are not designed to be weight-bearing structures. Excessive force may cause them to give way, resulting in personal injury.

WARNING

Filling Tires

Check at regular intervals that the ibot's tires have the prescribed tire pressure. Incorrect tire pressure can cause deteriorating stability and maneuverability.

The prescribed tire pressure is 55 psi (380 kPa).

Note that overfilling causes a risk of explosion.

BATTERY AND CHARGING

WARNING

Off-board Battery Charger

Do not carry the charger on the ibot.

WARNING

Battery Charger Cold Storage:

Do not use the battery charger for a period of two to four hours after cold storage. If the charger shows condensation, do not use it and contact Technical Support.

WARNING

Battery Charger Airflow:

Do not place items on or near the battery charger during charging.This could restrict airflow and cause overheating.

WARNING

Approved Battery Charger and Batteries:

Use only manufacturer supplied battery chargers and up to six 5 Ah Li-Ion batteries to charge the device. Using a different battery charger may damage the batteries and result in overheating and fire.

WARNING

Battery Charging Environment:

Charging must be done in a well-ventilated room. Charging must not be done in a bathroom or wet room.

WARNING

Damage to Battery:

If the battery pack is cracked or damaged, do not charge. Contact Technical Support

WARNING

Damage to Charger:

Do not attempt to open the battery charger case. If the battery charger does not appear to be working correctly, contact Technical Support.

WARNING

Battery Disposal:

Li-ion batteries must be recycled or disposed of properly. Do not incinerate the battery, the battery pack could explode. Personal injury or death could occur.

WARNING

Flammable Environments:

Never use the battery charger in or near flammable environments, materials, or atmospheres.

Explosion or fire may result.

CONVENTIONS

This table describes typographic conventions that may be used in this document.

Table 3: *Conventions*

Convention	Description
Boldface type	Emphasizes heading levels, column headings, and the following literals when writing procedures: • Names of options and elements that appear on the user controller screen. • Keys on the keyboard. • User input for procedures.
Italic type	Accentuates words or phrases that appear on the user controller screen.
`Courier New`	Used for identifying code samples.
Hyperlink to website	Provides quick and easy access to cross-referenced topics. Hyperlinks to websites are highlighted in blue and underlined.
See "Conventions" above.	Hyperlinks to locations within the document are highlighted in blue and italicized.

TERMINOLOGY

Table 4: *Terminology*

Convention	Description
Scroll	Used to instruct the user to move the joystick through a series of choices to highlight icons.
Select	Used to instruct the user to choose the highlighted option.
Press	Used to instruct the user to press down on a physical button.
Push	Used to instruct the user to push forward on the joystick or the device.
Move	The action word used when referring to movement of the joystick or the shortcut buttons.

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IBOT COMPONENTS

This section describes the standard components that are included with your ibot.

Seating System 30
Power Base 31
Rear View 32
Accessories 33
User Controller 34
Freewheel Lever (brake release) 35
Armrests 36
Legrests 37

SEATING SYSTEM

The ibot can be divided into two essential parts:

- A *Seating System*, which includes all the components designed to support you in a seated position.
- A *Power Base*, which includes all the components that provide mobility such as the wheels, batteries, motors, and user controller.

POWER BASE

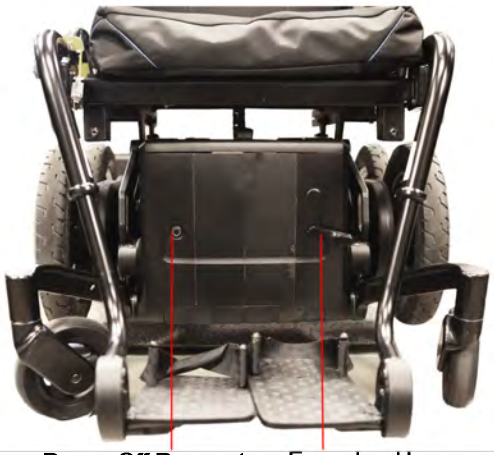


Table 1: *Power Base Components*

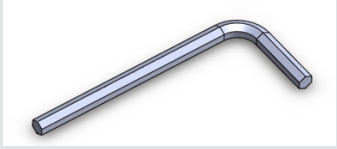
Component	Description
Power Off Request Button	This button is located on the front of the power base below the seat. It flashes red and allows the device to be powered OFF if communication to the user controller is lost. This button does not allow the device to be powered ON. *See "Communication Lost" on page 171.*
Freewheel Lever (brake release)	The freewheel lever (brake release) is located on the front of the power base. This lever allows the device to freewheel by physically engaging and releasing the braking system. *See "Freewheel Mode" on page 121.*

REAR VIEW

Table 2: *Rear View Components*

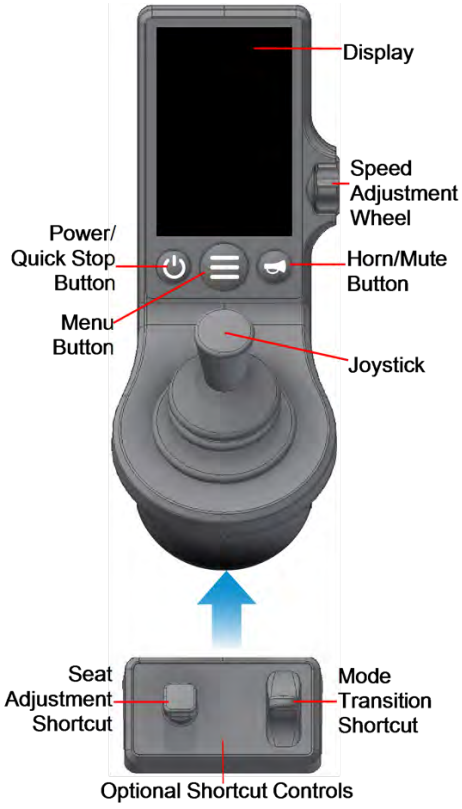
Component	Description
Assist Handle	The assist handle is used for assisted stair climbing by a trained assistant
Battery Packs	Four or six Lithium-ion battery packs power the device.
Wheel Clusters	The clusters are the structures that join the front and rear drive wheels. The cluster is attached to the main chassis of the device.

ACCESSORIES

Description	Accessory
Battery Charger	
5 mm Hex Wrench	

USER CONTROLLER

The *User Controller* is the main user interface that displays and controls all driving and menu functions. *See "User Controller Functions" on page 39.*



FREEWHEEL LEVER (BRAKE RELEASE)

The *Freewheel Lever (brake release)* is located on the front of the power base. It can be moved to a locked or unlocked position. *See "Freewheel Mode" on page 121.*

CAUTION

To avoid pinching or scraping your fingers, be careful when releasing or engaging the freewheel lever (brake release).

WARNING

Never release the freewheel lever (brake release) on slopes. The device may roll unexpectedly when the brake is released on slopes.

ARMRESTS

The *Armrests* are used to comfortably rest your arms while seated in the ibot. They can be raised up and down on both sides of the seat to allow for ease of transferring in and out of the device.

1. To raise an armrest, press down the **Armrest Receiver Latch**.

2. Lift up on the armrest until it stops.
3. To return the armrest to its original position, lift up on the **Armrest Receiver Latch**.
4. Lower the armrest until it rests in the receiver and ensure that the armrest is latched by lifting up on it.

⚠ CAUTION

Do not subject the armrest to load when latching. This can cause a pinch or crush injury.

LEGRESTS

The *Legrests* are used for placement of your legs when the ibot is in motion. They can be swung out of the way or removed completely for transfers and transportation of the ibot.

1. Depress the **Legrest Release Lever**.

2. Swing the legrest out to the side.
3. In this position, the legrest can be lifted off the device.

To reinstall the legrest:

1. Insert the legrest by lining up the post over the receiver.
2. Lower the post into the receiver.

Note: Caster wheels may interfere with installation. Rotate the caster wheel as needed.

3. With the post in the receiver , swing the legrest forward until it locks into place.
4. Check that the legrest is locked into position by trying to swing out to the side.
5. If there is movement, push the legrest to the center of the device again to lock the legrest into place.

CAUTION

Do not subject the legrest to load when latching. This can cause a pinch or crush injury.

USER CONTROLLER FUNCTIONS

Display 41
- Notification Banner 41
- Home Screen 43
- Driving Mode and Speed Gauge 43
- Action Required Prompt 44
- Fault and Power Conditions 45
- Battery Charging Status 46

Battery Status 47
Power/Quick Stop Button 47
- Power ON 48
- Quick Stop 48
- Power OFF 49

Menu Button 49
Driving Mode 50
Transitioning Flow Chart 53
Seat Adjustments 54
- Seat Adjustment Accessibility 56
- Standard Mode Adjustments 57
- 4-Wheel Mode Adjustments 57
- Balance Mode adjustments 57
- Stair Mode Adjustments 57

Speed Setting 58
- Speed Adjustment Wheel 59

Settings Menu 60
- Service Information 61
- Service Code 62
- Brightness 62
  - Auto Brightness 62
  - Manual Brightness 64
- Silence Feature 64
- Service Update 65
- Forced Power OFF (FPO) 66
- Power On Passcode 67
- Hill Charge 70

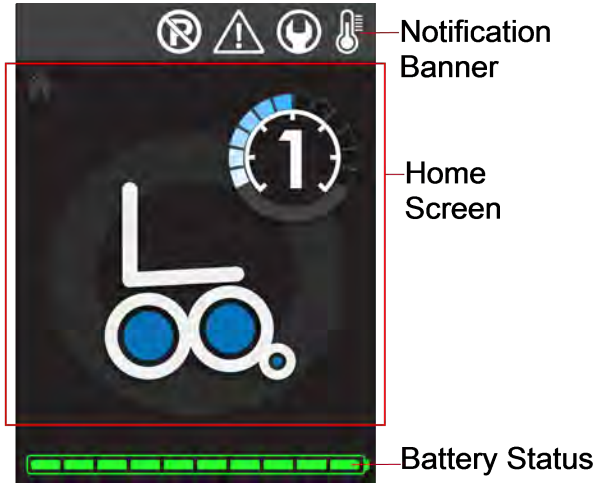
Horn/Mute Button 71

Joystick 72
Driving Mode Shortcut Controls 73
To Transition UP or DOWN ONE MODE: 73
To Transition UP or DOWN Between Standard and Balance: 74
Seat Adjustment Shortcut Controls 74

DISPLAY

The *Display* can be broken into three sections:

- Notification Banner
- Home Screen
- Battery Status



NOTIFICATION BANNER

The *Notification Banner* icons are presented across the top of the user controller display and indicate when:

- Freewheel Lever (brake release) is Unlocked.
- Warnings, Cautions or Alerts are present.
- Service is required.
- The ibot temperature is too high or low.

The *Notification Banner* icons are not displayed under normal operating conditions. If a notification icon is presented, an action may be required to resolve the condition.

Table 1: *Notification Banner Icons*

Icon	Description
	Freewheel Lever (brake release) This icon indicates that your freewheel lever (brake release) is in the unlocked position and the device will freewheel if powered off.
	Warnings, Cautions and Alerts One of these icons may display alone or with another notification banner icon. The color of the icon indicates the severity of the fault. *See "About Warnings, Cautions and Alerts" on page 128.*

Icon	Description
	Service Required The service wrench icon indicates that your ibot requires service. *See "Service Required" on page 132.*
	Overheating The thermometer icon indicates that the internal device temperature is too high. *See "Overheating" on page 131.*

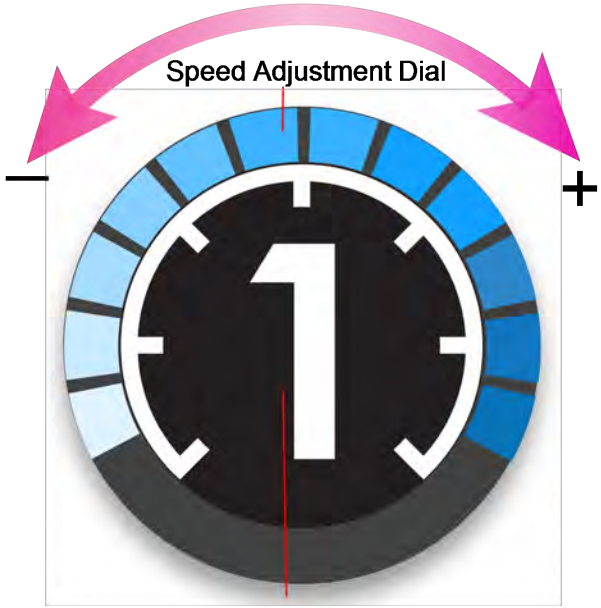
HOME SCREEN

The *Home Screen* displays:

- Driving Mode and Speed Gauge
- Any Action Required Prompts
- Fault and Power Conditions
- Battery Charging Status

DRIVING MODE AND SPEED GAUGE

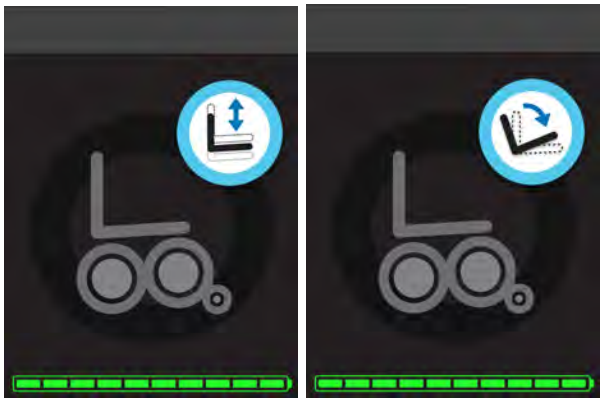
The *Driving Mode* and *Speed Gauge* are displayed together to indicate driving is active.



Current Speed Setting
When the speed number is greyed out the joystick is disabled.

ACTION REQUIRED PROMPT

A prompt appears in the top right corner of the *Home Screen* when action is required to resume driving. The inability to drive is indicated by the greyed-out driving mode icon.



FAULT AND POWER CONDITIONS

Table 2: *Fault and Power Icons*

Icon	Description
	Total System Shutdown *See "Total System Shutdown" on page 174.*
	Communication Lost *See "Communication Lost" on page 171.*
	Power ON *See "Power ON" on page 48.*
	Power OFF *See "Power OFF" on page 49.*
	Forced Power OFF (FPO) *See "Forced Power OFF (FPO)" on page 66.*

BATTERY CHARGING STATUS

Table 3: *Battery Charging Icons*

Icon	Description
	Battery Charging *See "Battery Charging" on page 138.*
	Battery Charging Fault *See "Battery Charging Fault" on page 170.*
	Battery Charging Complete

Icon	Description
	Battery Charging - Hill Charge
	Battery Charging Fault - Hill Charge
	Battery Charging Complete - Hill Charge

BATTERY STATUS

The *Battery Status* icon is your *fuel gauge* made up of ten bars which indicate the remaining battery level. When the battery level is low, the battery icon will flash and a tone will be sound to let you know it's time to charge the batteries. You can temporarily mute the tone by pressing the **Horn/Mute** button.

⚠ WARNING

Do not operate with depleted batteries. If you do not respond to warnings, you could run out of power and be stranded.

Table 4: *Battery Status*

Indicator	Status
	Battery level is Good
	Battery level is Low
	Battery level is Critically Low

POWER/QUICK STOP BUTTON

The *Power/Quick Stop* button has a dual purpose that turns the ibot power ON and OFF or stops all movement and disables the joystick for driving.

POWER ON

1. Verify the battery charger cable is disconnected from the device and stored safely.
2. Verify the freewheel lever (brake release) is in the locked position.
3. Press the **Power/Quick Stop** button.

   The user controller will boot up to the *Home* screen.

QUICK STOP

Quick Stop can be used to prevent unintentional movement as a result of accidental bumping of the user controller.

A quick press of the *Power/Quick Stop* button stops all movement and disables the joystick for driving. Your speed setting will change to 0.

Press the **Power/Quick Stop** button again to resume driving. Your speed setting will return to the previous speed setting.

⚠ WARNING

Avoid sudden stops or starts which can cause you to lose your position or fall from the device. This can lead to personal injury, Where possible, stop by releasing joystick rather than by turning the power off or activating quick stop. Be sure to keep all recommended positioning belts securely fastened at all times.

POWER OFF

The power can be turned OFF in Standard and Remote modes.

1. Make sure the device is in *Standard or Remote Mode*.
2. Make sure freewheel lever (brake release) is in the locked position.
3. Press and Hold the **Power/Quick Stop** button until the white progress indicator is complete.

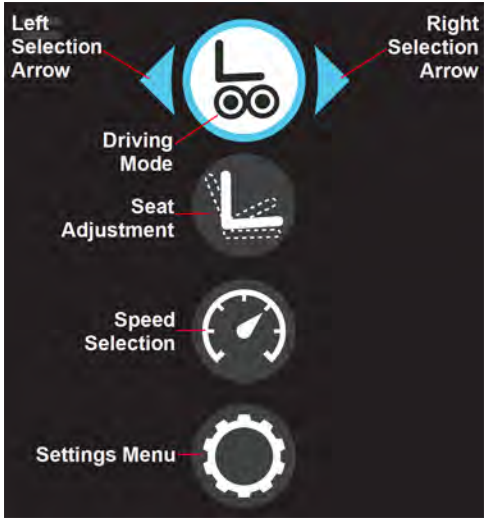
MENU BUTTON

The *Menu Button* opens the menu screen where you can use the joystick to scroll through and choose the available:

- Driving Modes
- Seat Adjustments
- Speed Settings
- Settings Menu

The menu button also returns you to the *Home* screen.

1. Press the **Menu** button on the user controller.
2. Move the joystick FORWARD and BACK to scroll through the menu functions.
3. Move the joystick LEFT and RIGHT to select the menu function.



If at any time during your selections you want to return to the *Home* screen, press the **Menu** button.

DRIVING MODE

The *Driving Mode* menu allows you to scroll through and select your accessible *Driving Modes*. The *Driving Mode* menu is also used to select Standard or Stair Mode Recovery options when an error occurs and you perform a Forced Power Off (FPO).

Table 5: *Driving Modes*

Icon	Description
	Standard Mode
	4-Wheel Mode
	Balance Mode

Icon	Description
	Stair Mode
	Remote Mode

Table 6: *Recovery Modes*

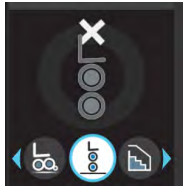
Icon	Description
	Standard Mode Recovery
	Stair Mode Recovery

1. Push the **Menu** button.
2. Move the joystick **LEFT** or **RIGHT** to select the driving mode.

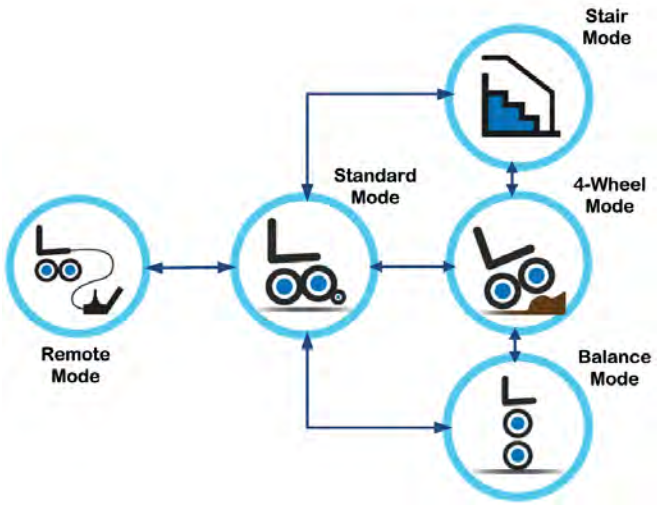
   For Stair Mode *See "Stair Mode" on page 92.*

3. Move the joystick **FORWARD** and **HOLD** to transition to the selected mode.

   In the event that you need to cancel the transition you can move the joystick BACK.

Icons with a check mark indicate the current driving mode selected.	
Icons with an up arrow indicate the driving mode can be selected.	
Icons displayed with an *X* indicate the driving mode cannot be selected.	

TRANSITIONING FLOW CHART



⚠ CAUTION

Make sure the area between the seat bottom and the power base is clear. Crushing items or body parts could result in personal injury. Lower the seat only when you are sure there are no obstructions between the seat bottom and the power base.

SEAT ADJUSTMENTS

Adjusting the seat tilt and height is accessible through the *Menu*. The joystick is used to control the position of the seat. *See also "Seat Adjustment Shortcut Controls" on page 74.*

Table 7: *Seat Adjustments*

Icon	Description
	Seat Height Adjustment
	Seat Tilt Adjustment

1. Push the **Menu** button.
2. Using the joystick, scroll to highlight the **Seat Adjustment** icon.

3. Move the joystick **LEFT** or **RIGHT** to highlight the **SEAT TILT** icon or **SEAT HEIGHT** icon.

4. Move the joystick **FORWARD** and **BACK** to make the adjustment.

   If the seat adjustment option has an X above the icon, the adjustment is not available for that mode.

5. To return to the *Home* screen, press the **Menu** button.

SEAT ADJUSTMENT ACCESSIBILITY

Table 8: *Seat Adjustment Accessibility*

	Seat Tilt Forward	Seat Tilt Back	Seat Height Up	Seat Height Down
Standard Mode	✓	✓		
4-Wheel Mode			✓	✓
Balance Mode	✓	✓	✓	✓
Stair Mode			✓	✓

STANDARD MODE ADJUSTMENTS

In Standard mode, seat tilt is only available when you are not driving. The seat tilt feature is designed for your comfort. When the seat is tilted back in Standard Mode, the casters lift off the ground and the four drive wheels are in contact with the ground.

4-WHEEL MODE ADJUSTMENTS

The seat can be raised in 4-Wheel mode to increase seat height and the ground clearance of the caster wheels. Raising the seat height raises your center of gravity. For safety, the device speed is reduced when the seat is elevated. Recommended safe driving guidelines include moving the seat height to its lowest position when driving. When raising or lowering your seat, be mindful of objects behind you, such as doorknobs or shelves, which may get caught in the assist handle.

BALANCE MODE ADJUSTMENTS

The seat can be tilted or raised in Balance mode. For safety, the device speed is reduced when the seat is elevated. Raising the seat allows you to reach high objects. Recommended safe driving guidelines include moving the seat height to its lowest position when driving.

STAIR MODE ADJUSTMENTS

The seat height can be adjusted for comfort when using the handrail in solo or assisted stair climbing.

SPEED SETTING

The *Speed Setting* controls how slow or fast you can drive. It also allows you to deactivate the joystick to prevent any movement.

It is important to match your speed to the driving conditions. Remember to slow down when turning and allow enough time and space for braking. You can stop quickly by moving the joystick in the direction opposite to your travel or by pressing the **Power/Quick Stop** button.

Table 9: *Speed Settings*

Icon	Description
	Speed Setting 0 deactivates the joystick and optional shortcut controls. This can be used to prevent unintentional movement as a result of accidental bumping of the user controller.
	Speed Setting 1 is limited to slower speeds. This setting is more suitable for indoor use. The device does not exceed 4 mph (6 km/hr) in any mode.
	Speed Setting 2 is faster and better suited for outdoor environments.

1. Press the **Menu** button .

2. Using the joystick, scroll to highlight the **Speed Setting** icon .

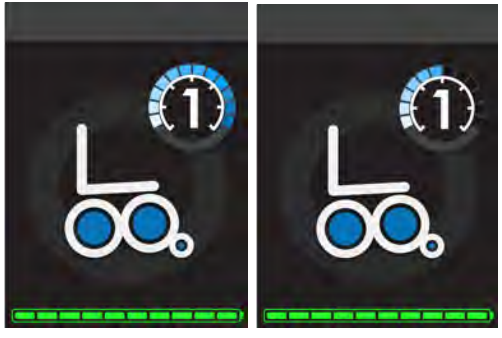
3. Move joystick **LEFT** or **RIGHT** to scroll through the available speeds.
4. Move the joystick **FORWARD** to select the speed.

   After your selection is made, you are returned to the *Home* screen.

SPEED ADJUSTMENT WHEEL

The *Speed Adjustment Wheel* allows you to adjust your speed within each speed setting.

Speeds can only be adjusted while the driving mode and speed gauge are visible on the *Home* screen.



1. Rotate the speed wheel **Down** to gradually reduce the maximum speed within the current speed setting.
2. Rotate the speed wheel **Up** to gradually increase the speed within the current speed setting.

This is now your maximum speed when you use the joystick to drive.

SETTINGS MENU

The *Settings Menu* provides access to the following functions:

1. Push the **Menu** button.
2. Move the joystick **BACK** to scroll to the *Settings* icon .
3. Move the joystick **LEFT** or **RIGHT** to select the *Setting*.

Table 10: *Settings*

Icon	Description
	Service Information
	Brightness

Icon	Description
	Service Update
	Power On Passcode
	Forced Power OFF (FPO)
	Silence Feature
	Hill Charge

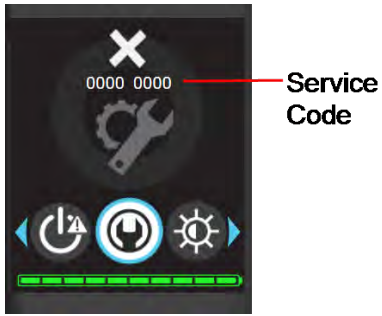
SERVICE INFORMATION

This setting provides access to service related information.

It is recommended you take note of any service code displayed prior to calling Technical Support.

SERVICE CODE

The service code is a numeric code that appears across the top of the *Service Information* screen.



If a service code other than 0000 0000 appears *see "Service Required" on page 132*

The code provides technical service with information and device status to help diagnose the system.

BRIGHTNESS

The Brightness of the display can be set for automatic or manual adjustment to accommodate user preference.

AUTO BRIGHTNESS

1. To enable the automatic *Brightness* setting, press the **Menu** button on the user controller.
2. Using the joystick, scroll to the **Settings** icon.

3. Move the joystick **LEFT** or **RIGHT** to highlight the **Brightness** icon.
4. Move the joystick **FORWARD** to select *Brightness*.
5. Move the joystick LEFT or RIGHT to check the *Auto Brightness* check box.

6. To return to the *Home* screen, press the **Menu** button.

MANUAL BRIGHTNESS

1. To change the *Brightness* manually, press the **Menu** button on the user controller.
2. Using the joystick, scroll to the **Settings** icon .
3. Move the joystick **LEFT** or **RIGHT** to highlight the **Brightness** icon .
4. Move the joystick **FORWARD** to select *Brightness*.
5. Move the joystick **FORWARD** or **BACK** to increase or decrease the *Brightness*.
6. To return to the *Home* screen, press the **Menu** button.

SILENCE FEATURE

The *Silence* feature is used to *mute* non-critical cautions and alert tones. *See "About Warnings, Cautions and Alerts" on page 128.*

1. Press the **Menu** button on the user controller.
2. Using the joystick, scroll to the **Settings** icon .

3. Move the joystick **LEFT** or **RIGHT** to turn silencing ON or OFF.

   When silencing is turned ON, the *Horn/Mute* button will still flash red during an alert condition.

4. Move the joystick **FORWARD** to select.
5. To return to the *Home* screen, press the **Menu** button.

Note: A power cycle cancels the silencing.

SERVICE UPDATE

The *Service Update* menu function is used by technicians for service related tasks by establishing a connection between the ibot and the *Product Interface* application.

WARNING

The Product Interface application is for use by Service Technicians and Clinicians only. Unauthorized modification to the system permissions could lead to personal injury or death.

FORCED POWER OFF (FPO)

Forced Power OFF (FPO) is used only in a situation where the device is not operating properly and you cannot power off. This may be required if there is an issue with the ibot transitioning and powering down is necessary.

WARNING

Operating the Forced Power OFF when in Balance or Stair mode can cause the device to fall over.

The device will fall unless someone is capable of keeping it upright in Balance mode or you or your assistant can hold onto the handrail or assist handle in Stair mode.

If you are in Balance mode, before using FPO, attempt a controlled auto transition using Communication Lost. *See "Communication Lost" on page 171.*

1. To force the power off, press the **Menu** button on the user controller.
2. Using the joystick, scroll to the **Settings** icon .
3. Move the joystick **LEFT** or **RIGHT** to select the **FPO** icon .
4. Move the joystick **FORWARD** to select **FPO**.
5. Move the joystick **FORWARD** and **HOLD** until the white progress indicator is complete.
6. The ibot will power OFF.
7. When you power ON follow steps for Recovery. *See "Standard Mode Recovery" on page 175.*

POWER ON PASSCODE

The ibot has a *Power On Passcode* feature that can be programmed by your Clinician to require a passcode upon powering on the device and help prevent others from operating the device.

After the *Power On Passcode* feature is programmed with your unique passcode sequence, you have the ability to lock and unlock the device from within the *Settings* menu.

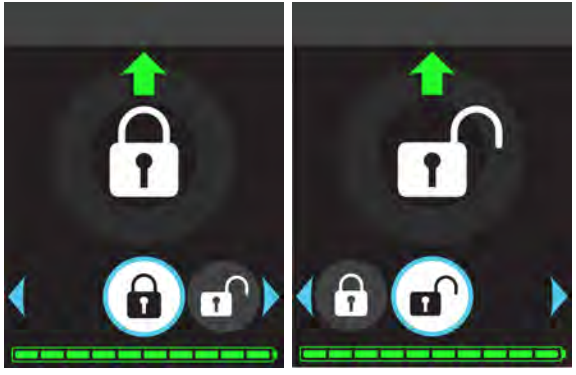
If at any time you forget your *Power On Passcode* sequence, contact your clinician.

Table 11: *Power On Passcode Icons*

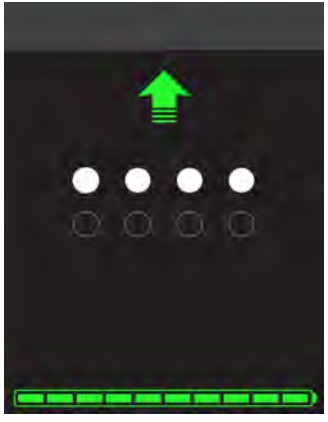
Icon	Description
	Lock: Passcode active
	Unlock: Passcode inactive

1. To activate the *Power On Passcode* feature, make sure your device is powered ON.
2. Press the **Menu** button on the user controller.
3. Using the joystick, scroll to the **Settings** icon.

4. Move the joystick **LEFT** or **RIGHT** to highlight the *Power On Passcode* icon.
5. Move the joystick **FORWARD** to select **Power On Passcode**.



6. Move the joystick **LEFT** or **RIGHT** to highlight the **Lock (activate)** or **Unlock (deactivate)** icons.
7. Move the joystick **FORWARD** to select.



8. Enter your passcode using the joystick or shortcut controls in the sequence that was set up with your clinician.
9. Move the joystick **FORWARD** and hold to accept the sequence.

When the *Power On Passcode* is active, the next time the device power is turned on, the **Lock** icon is displayed on the *Home Screen*, and the passcode sequence must be entered to operate the device.

10. Move the joystick in any direction to bring up the passcode screen and then start your *Power On Passcode* sequence.

HILL CHARGE

Hill Charge is a feature for users who frequently drive downhill. Typically when you drive downhill, on a fully charged battery, your speed is restricted to protect the batteries from over voltage.

Once charged with the Hill Charge feature enabled, your speed downhill will not be restricted and the battery is charged to only 90%.

1. To enable *Hill Charge*, press the **Menu** button.
2. Move the joystick **FORWARD** or **BACK** to scroll to the *Settings* icon .

3. Move the joystick **LEFT** or **RIGHT** to highlight the *Hill Charge* setting.
4. Move the joystick **FORWARD** to select **Hill Charge**.

5. Move the joystick LEFT or RIGHT to highlight the enable or disable *Hill Charge* setting.
6. Move the joystick **FORWARD** to select **the Hill Charge setting**.
7. To return to the *Home Screen*, press the **Menu** button.

HORN/MUTE BUTTON

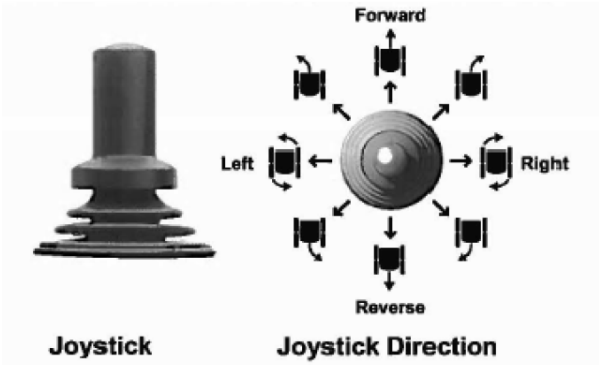
The *Horn/Mute* button has a dual purpose that sounds the *Horn* or temporarily *Mutes* a warning, caution, or alert.

The *Horn/Mute* button flashes red when there is a warning, caution, or alert until the *Horn/Mute* button is pressed and then turns to a solid red.

At the same time, an alert tone is sound and pressing the *Horn/Mute* button temporarily mutes the tone. For more information *see "About Warnings, Cautions and Alerts" on page 128*.

JOYSTICK

The *Joystick* is used to drive and maneuver the ibot as well as navigate and make selections on the *Menu* screens.



WARNING

Do not just use the joystick as a support. Fast turns and driving on uneven surfaces can interfere with your ability to handle the device safely.

If the device moves in an unexpected way, release the joystick.

When you release the joystick it automatically moves back to its neutral position and the motors will slow you to a stop.

In Standard, 4-Wheel, and Balance modes it is possible to make rapid stops by moving the joystick in the direction opposite to your direction of travel or by pressing the *Quick Stop* button.

Unintended movement of the joystick will result in unintended movement of the device.

DRIVING MODE SHORTCUT CONTROLS

Driving Mode Shortcut Controls transition between Standard, 4-Wheel and Balance modes. If you are in any other mode the driving mode shortcut control will be disabled.

Driving mode transition shortcuts are available, relative to one another, in the order shown.

TO TRANSITION UP OR DOWN ONE MODE:

When you are using the driving mode shortcut, an icon of the shortcut button is pictured in the bottom left corner of the transition screen.

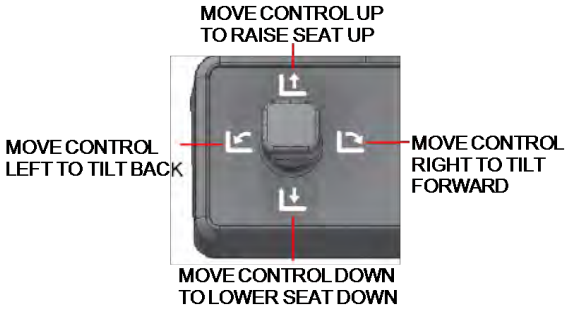
Push and **Hold** the driving mode shortcut control **UP or DOWN** until the transition is complete.

TO TRANSITION UP OR DOWN BETWEEN STANDARD AND BALANCE:

Push the driving mode shortcut control UP or DOWN once, quickly followed by a Push and **Hold** sequence in the same direction until the transition is complete.

SEAT ADJUSTMENT SHORTCUT CONTROLS

Seat Adjustment Shortcut Controls allow instant access to tilting your seat forward and back as well as raising and lowering your seat height. Be aware that some driving modes will have limited access to the seat tilt and height adjustments.



DRIVING MODES AND TECHNIQUES

iBalance Technology 76
Overview 77
Environments For Use 78
Slopes and Obstacles 80
Standard Mode 84
4-Wheel Mode 84
4-Wheel Driving Technique 85
Balance Mode 87
Balance Driving Technique 88
Stair Mode 92
Stair Assessment 93
Stairways and Landings 95
Step Geometry 97
Stair Climbing Technique 100
Cluster Safety Lock 101
Solo Stair Climbing 102
Assisted Stair Climbing 109
Remote Mode 117

IBALANCE TECHNOLOGY

Stability is one of the most important features of any Mobility System because it prevents you from tipping over. There is more than one way to achieve stability.

The iBalance technology in the ibot Mobility System uses a computer system with gyroscopes and other sensors. Gyroscopes are sensors that monitor changes in motion. The gyroscopes and other sensors send signals to the computer. The computer processes the information and tells the motors how to move the wheels to maintain stability and balance.

The iBalance technology maintains balance in the forward and backward directions. This means the device will keep your seat relatively level when driving straight up or down curbs or inclines. It does not electronically maintain side-to-side (lateral) stability.

The ibot has multiple operating modes that use the iBalance technology. Each mode uses the core technology in a slightly different way.

WARNING

During transitions between Standard, 4-Wheel, Balance, and Stair modes avoid excessive body movement since the iBalance technology is not active until the transition is complete.

OVERVIEW

Driving Modes are selected dependent upon your need as you go about your day. The ibot provides multiple driving modes to accommodate various terrains.

Your Clinician will recommend and enable only those driving modes that you can operate safely.

For normal driving, the technique is simple. Move the joystick in the direction you want to go and the device then moves in the direction in which the joystick is pointing.

Drive as gently as possible and try to avoid sudden braking and evasive maneuvers.

⚠ CAUTION

Do not take the first test drive on your own. The test drive is intended to establish how you and the device work together and you may need assistance. Before driving, check that the freewheel lever (brake release) is in the locked position.

ENVIRONMENTS FOR USE

The ibot is a powered mobility device for individuals who have mobility impairments. The device provides:

- Mobility on smooth surfaces and inclines at home, at work, and in other environments.
- Movement across obstacles, uneven terrain, curbs, grass, gravel, and other soft surfaces.
- Mobility in a seated position at an elevated height.
- Ascent and descent of stairs with or without assistance.
- Mobility and transportation

Table 1: *Driving Mode for the Terrain*

Terrain Condition	Standard	4-Wheel	Balance	Stair
Smooth Surfaces - tiled, concrete, or wood floors	✓	✓	✓	✓
Secured Carpeted Floors	✓		✓	
Outdoor - grass, gravel, sand, snow, mud		✓		
Climbing Stairs				✓
Steep Slope		✓		
Water up to 3 in (76 mm) deep*		✓		

*** If you must drive through water, ease your way through as it is difficult to determine water depth or if there are obstacles below the surface.**

SLOPES AND OBSTACLES

Due to the difficulty of assessing slope angles, care should be taken on any surface with an obvious slope. Consider proceeding at a slower speed when traveling on slopes within the specified limits.

- Approach slopes straight on, so both front wheels line up with the edge of the slope.
- Drive straight up and straight down.
- It is advised not to turn the device on slopes. If you need to turn on a slope, use caution and lower seat height to provide greater stability.
- When driving in Remote mode, an unoccupied ibot must always face up the slope when ascending and descending.
- Care should be taken driving over any obstacles. The obstacle heights listed are for curb or threshold-type obstacles. Where possible avoid any uneven obstacles, if approaching an uneven obstacle (ie roots) do so in 4-Wheel mode.

Table 2: *Rated Slopes and Obstacles*

Driving Mode	Degrees	Max. Obstacle
Standard	8	1 in (25 mm)
4-Wheel	10	5 in (127 mm)
Balance	8	1 in (25 mm)
Stair	N/A	N/A
Remote	20*	1 in (25 mm)

*** With the front of the device facing uphill.**

SURFACES TO AVOID

Driving on certain surfaces may cause the device to tip over. To avoid this from happening, be aware of the surfaces to avoid.

ALL MODES AVOID:

- Loose floor coverings such as throw rugs. They can become tangled in the wheels and cause the device to tip.
- Surfaces with cracks or gaps where the drive wheels or casters can become stuck.
- Moving surfaces such as moving walkways or escalators.
- Unstable or slippery obstacles that may shift as you go over them. Shifting may cause the device to slip or tip over.
- Steep side slopes that may cause the device to tip to the side.

ALL MODES EXCEPT 4-WHEEL MODE AVOID:

- Soft or unstable surfaces such as unpacked dirt, sand, and loose gravel.
- Wet, icy or slippery surfaces.
- Uneven surfaces such as stone walkways and bumpy yards.

4-WHEEL MODE AVOID:

- Water deeper than 3 in (76 cm).

STAIR MODE AVOID:

- Weak or visibly deteriorated stairs.
- Sloped stairs or stairs with a significantly sloped landing or approach.
- Stairs without a handrail if unassisted.
- Slippery stairs or stairs with a slippery handrail. (footnote Remember, weather conditions will affect the acceptability of outdoor stairs and handrails for climbing. Stairs and handrails that become slippery due to rain, snow, or ice should be avoided. Inspect even familiar stairs if weather conditions are poor.
- Stairs with unsecured carpet.
- Circular, spiral or pie-shaped stairs.

STANDARD MODE

Standard Mode fulfills your routine driving needs for indoor and outdoor conditions with reasonably level surfaces, ADA compliant ramps, and driving over very low obstacles such as door thresholds.

The seat is at its lowest level to access a table or desk.

In Standard mode the device drives on the rear drive wheels and front caster wheels.

⚠ CAUTION

In Standard Mode, the front drive wheels are raised off of the driving surface; however, they are still driven by the motors.

Be aware of this condition when driving in tight spaces, as it is possible for the front drive wheels to contact and potentially climb an obstacle, causing the device to fall over.

4-WHEEL MODE

4-Wheel Mode gives you the advantage of four-wheel drive and makes it possible to drive across soft or loose terrain such as dirt, grass, and gravel as well as over obstacles and curbs. 4-Wheel mode is intended mainly for outdoor use.

In 4-Wheel mode the device drives on all four drive wheels with the caster wheels elevated. Because the casters are not in use in 4-Wheel mode driving, turning is not as smooth.

⚠ WARNING

Always be mindful of objects in front of and behind you when transitioning into and out of 4-Wheel mode. Both your seat height and legrest height will adjust during the transition, and could become stuck under objects. Personal injury can occur.

TERRAIN FOLLOWING

4-Wheel Mode uses the iBalance technology to keep the seat relatively level at all times. The device will adjust as necessary to compensate for changes due to slopes, obstacles, and curbs.

Always be aware of your surroundings, as these actions are an automatic response of the device. Make sure there is clear space available when negotiating obstacles or stopping quickly.

Adjustments in wheel speed and cluster position may occur under certain conditions such as leaning forward or backward, picking up objects in front of the device, or climbing down an obstacle.

4-WHEEL DRIVING TECHNIQUE

When turning, be aware of your available space, specifically for legrests and the assist handle. These components can get caught on objects in the environment.

If the device gets stuck while turning in 4-Wheel mode, lower the seat height or transition to Standard mode to release the device. Then move to an area with greater turning space.

CLIMBING UP OBSTACLES

1. Make sure the obstacle you are about to climb are within the acceptable obstacle height. *See Table 2 on page 81*
2. Raise the seat until the casters and/or footplates are high enough to clear the obstacle.
3. Approach the obstacle straight on. Remember, the iBalance technology does not provide side-to-side stability.
4. Start from about an inch away and use a steady, moderate speed to climb up the obstacle.
5. If you have a hard time driving up an obstacle, back up a few inches and try again. If you continue to have difficulty, find another route.

CLIMBING DOWN OBSTACLES

1. Approach the obstacle straight on. Remember, the iBalance technology does not provide side-to-side stability.
2. Releasing the joystick after the first set of wheels has dropped off the obstacle creates the smoothest movement and minimizes forward travel.
3. Slowly drive forward until the second set of wheels drops off to maintain the smooth climb down.

BALANCE MODE

Balance Mode enables you to reach things at greater height and enjoy conversations with people at eye level. You may use Balance mode when you want to move and interact at eye level with people who are walking or standing as long as you are operating within appropriate balance mode environments. *See "Environments For Use" on page 78.*

WARNING

Avoid obstacles that can lead to a footrest being stuck in Balance Mode.

WARNING

Never transition into, or drive in Balance Mode on wet, uneven, unstable or slippery surfaces. The ibot uses traction to maintain its balance, and could slip on some surfaces.

WARNING

When transitioning into or out of Balance mode, make sure you have at least 6 feet (1.8 meters) of clearance space in the front, and back and adequate head clearance. If the device is obstructed during transition, unexpected movement may occur.

Dithering is the slow, continuous, back-and-forth movement of the drive wheels in Balance mode. The iBalance technology makes small changes to keep you balanced.

Note these features:

- The iBalance technology is active.
- The ibot balances you in the forward and backward directions on two of four drive wheels.
- The clusters rotate the drive wheels to a vertical position.
- You steer, control speed, and stop by using the joystick.

When carrying personal items on the back of the seat, the ibot may transition from 4-Wheel to Balance Mode as soon as the seat is tilted backward. Make sure all items are clear of the wheels and wheel clusters, and don't drag on the ground during transition.

BALANCE DRIVING TECHNIQUE

Before transitioning into *Balance Mode* take a few seconds to scan your environment as the device will change position as you transition. Device components such as your assist handle and legrests may be at the height of obstacles.

The iBalance technology does not control your side-to-side stability. You are only stabilized in the forward and backward directions when you are on two wheels.

If you are in Balance mode in an area with many other people, recognize that your *personal space* is greater than when you are in other modes. In Balance mode, your *space* needs to accommodate the device and enough room to *dither* or react to your shifting weight.

You can turn the ibot in a tight circle in *Balance Mode*. Before turning, be sure to check the environment. In Balance mode, your feet are higher off the ground and may get caught on obstacles. You may want to adjust your seat in Balance mode before turning to reduce the potential of getting your feet or assist handle stuck. *See "Balance Toe Stuck" on page 91.*

If you are not driving, it is recommended that you use the **Speed Setting 0** to deactivate the joystick to prevent any unintentional movement.

WARNING

Avoid rapid body movements while in Balance Mode.

In Balance mode be aware that the device will move without joystick input as it responds to changes in your body position. Rapid movements forward and backward (dancing) may cause the device to react automatically to keep you upright and automatically transition from Balance mode to 4-Wheel mode.

WARNING

Balance mode requires a greater stopping distance than other modes. Braking without considering the required stopping distance, could result in personal injury. Always be aware of the needed braking distance and reduce your speed in congested or confined areas.

WARNING

Be careful when using Balance Mode in small spaces. Your feet and device parts are higher than usual, and are now at shelf and table height. Avoid getting your feet or parts of the device stuck. If stuck, personal injury or death could result.

STABILITY

When driving in Balance mode, be particularly aware of your side-to-side stability. You are now riding in a position higher above the ground, which raises your center of gravity so that you are not as stable as when the seat is in Standard mode. Balance Mode relies on traction to keep you upright, so you must be aware of the surfaces you drive on.

It is recommended that you adjust your seat to the lowest position when driving in Balance mode. The ability to raise your seat in Balance mode is designed to assist you in reaching objects. As a safety precaution, your driving speed will be reduced when the seat is in elevated positions. To resume normal driving speed, lower the seat height to its lowest position.

AUTOMATIC TRANSITION

An *Automatic Transition* occurs when the product automatically changes its operation from *Balance Mode* to *4-Wheel Mode*. It will automatically lower the raised set of drive wheels to the ground in an effort to maintain stability.

⚠ WARNING

Auto Transitions out of Balance Mode can be jarring. Frail users should not use Balance Mode.

Automatic Transitions may occur in the following situations:

- Warning conditions, such as low battery power and overheating.
- Loss of stability due to unacceptable terrain. If you try to drive in Balance mode on surfaces that are not level or slip-resistant, the product may lose stability.

- A large shift in center-of-gravity. This could result from someone pushing or pulling on the product. Carrying a heavy object, either on the back of the seat or in one's lap, could cause an automatic transition.

WARNING

Avoid obstacles, slick surfaces, or excessive rocking when in Balance Mode. The device may transition automatically to 4-Wheel mode if you run into an obstacle, lose traction, or if a large change in your center of gravity takes place while moving (excessive rocking forward and back).

WARNING

Respond promptly to warnings when in balance mode. The device may automatically transition if the battery is too low or another fault occurs.

WARNING

An automatic transition will occur without warning or regard for environmental factors. You or others near you could be injured during an automatic transition.

BALANCE TOE STUCK

If your legrest or assist handle becomes stuck under an object in balance mode, follow these steps to resolve the issue.

1. Use the seat tilt adjustment to lean forward or back as necessary to help free you from the object.
2. If the seat tilt adjustment reaches its end of travel, and you are still not free, release the joystick or shortcut control and then reapply the seat tilt adjustment.

   There may be an audible tone while this occurs and, if you hold continuously, the device will transition to 4-Wheel mode.
3. If you are still stuck, seek external assistance to stabilize the device and initiate a **Forced Power Off**.

Note: If you are in Balance mode follow instructions from *Communication Lost* to transition onto four wheels. *See "Communication Lost" on page 171.*

WARNING

Operating the Forced Power OFF when in Balance or Stair mode can cause the device to fall over.

The device will fall unless someone is capable of keeping it upright in Balance mode or you or your assistant can hold onto the handrail or assist handle in Stair mode.

4. Contact Technical Support.

STAIR MODE

Stair Mode allows you to climb up and down indoor and outdoor stairs.

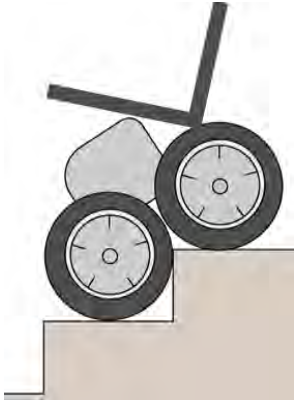
Your Clinician will set your ibot to climb stairs only after training. The Clinician can configure the chair with any of the following settings:

- Stair Off
- Solo Stair Climbing Mode
- Assistant Stair Climbing Mode.

When you solo stair climb, you may need occasional assistance. It is strongly recommended that a trained assistant be available to help you as needed.

Note these features:

- The iBalance technology is active.
- The clusters rotate the drive wheels over each other in order to climb.



- The joystick is not active. The device relies on you or your assistant's input depending on the system configuration (Solo or Assist).

WARNING

Go Up or Down Stairs Only in Stair Mode.

The device could fall down the stairs in any mode other than Stair Mode.

STAIR ASSESSMENT

It is important to assess your stairways, landings, handrails, and steps to determine if they are suitable for safe stair climbing.

Here are some questions you should consider before climbing stairs.

1. Do you require a trained assistant for climbing?
2. When assisted stair climbing, is there additional space to accommodate for the assistant and moving to the next flight of stairs?

HANDRAILS

For all *Handrail* types you will need to assess the following:

- Handrails must be strong and fastened securely.
- Handrails must extend beyond the top step approximately 6 in (152 mm).
- The handrails must not have gaps large enough to interfere with safe stair climbing.
- Handrails should not be slippery.

WARNING

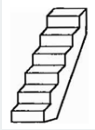
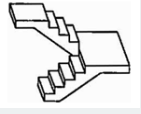
Never go up or down stairs unassisted if there is not at least one strong, secure handrail throughout the ascent or descent. Inability to safely use at least one acceptable handrail when solo-stair climbing may result in loss of control of device. Personal injury or death could result.

STAIRWAYS AND LANDINGS

For all *Stairway* and *Landing* types you will need to assess the following:

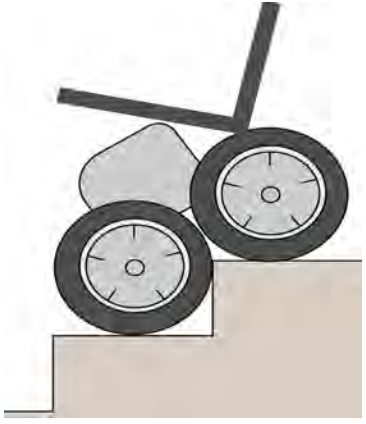
- Stairway is flat and level and at least 30 in (762 mm) wide
- Landing is flat and level and at least 52 in (1320.8 mm) deep
- Stairs are strong enough to support you, the device, your accessories, and an assistant (if needed).

Table 3: *Stairway and Landing Assessment*

Stairway Type	Illustration	Specifications	Landing	
Straight		Straight stairways are where each flight of stairs continues in the same direction as the previous flight.	At least 52 in (1321 mm) deep	N/A
L-Shaped		L-shaped stairways are where each flight of stairs are perpendicular to the previous flight.		45 in (1143 mm) wide
U-Shaped		U-shaped stairways are where the next flight of stairs are parallel to the previous flight.		80 in (2032 mm) wide
Winding, Spiral, Pie-Shaped and Circular		Winding stairways cannot be climbed with the ibot and you should seek an alternate route.	N/A	N/A

STEP GEOMETRY

Many outdoor stairs and even some indoor stairs present different geometry, e.g., high risers and low risers. It is important to understand the device's response to climbing, the effect of different stair geometry on the orientation of the device to a step, and the adjustment in your technique when climbing a variety of stairs.



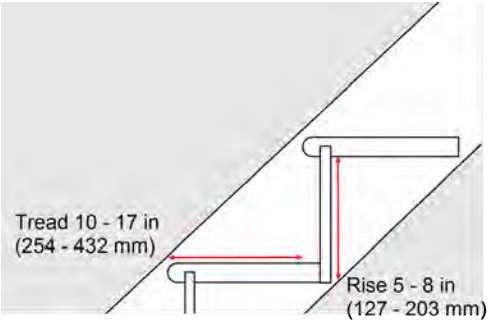
Several factors affect your stair climbing technique:

- Wheel position relative to the riser
- Tread length
- Riser height

⚠ WARNING

Do not attempt to climb stairs that are outside of the specified geometry. The device could fall over. Personal injury or death could result.

STEP SHAPE AND SIZE REQUIREMENTS



- The **Rise** (height) of each step must be 5 - 8 in (127 - 203 mm).

Note: Risers are not required, as long as the stair height is within specifications and are in good condition.

- The **Tread** (depth) of each step must be 10 - 17 in (254 - 432 mm) from front to back.

WARNING

Only climb steps that are flat and level. Avoid sloped stairs, as they may cause the wheels to roll forward on the step. Climbing sloped steps can cause the wheels to fall off the stair.

If you ever have a question about the size of a step you are approaching, you can use drive wheel tire diameter as a *ruler*. This will help you estimate the stair geometry. The diameter of drive wheel tires is approximately 12 in (305 mm).

WARNING

Never face up the staircase when climbing stairs. The device is designed to go up and down stairs safely, only when your feet are facing down the staircase. Climbing stairs while facing up the staircase will cause the device to tip over. Personal injury or death could result.

⚠ WARNING

Never climb stairs with items hanging on the back. The items could become stuck between the backrest and the stairs or fall off and cause the device to fall down the stairs. Place items securely in your lap. Personal injury or death could result.

LOW RISE

The cluster position is closer to horizontal, so it has a longer arc of rotation. It may require more effort (a slightly bigger CG shift) to raise the cluster to the vertical position.

You need to control the cluster longer before it reaches the next step.

HIGH RISE

The cluster position is closer to vertical. The cluster will take less effort to start climbing. You will need to shift your weight back more quickly to slow down the cluster and ensure a smooth landing.

LONG TREADS

With longer tread lengths, >17 in (432 mm), the four drive wheels almost fit on the stair tread.

Climbing up, you need to snug the wheel up against the riser before initiating cluster rotation.

Climbing down, you need to let the front drive wheel move down to the next step. If the front drive wheel does not move, do not force the front drive wheel over the edge. The stair tread is too long and you should proceed in 4-Wheel mode.

STAIR CLIMBING TECHNIQUE

Stair climbing works by rotating the clusters so that one set of wheels rotates over the other. The clusters rotate based on the position of your center of gravity, which you control using the handrails (or an Assistant controls using the assist handle). When you lean back, shifting your center of gravity backward, the cluster will rotate back keeping a set of wheels beneath you. You control the speed of cluster rotation by how much and how fast you lean.

Keep in mind the ibot will not climb stairs on its own and requires you or an assistant to manually guide the device while the device does the work of lifting the weight. Letting go of the handrail or not balancing the device will cause the device to fall over.

You should always use a head support while stair climbing.

You will develop your own techniques for stair climbing over time, but the general principle remains: you (or an assistant) must be in control of the ibot at all times.

WARNING

Always maintain hold of the handrail during transition into and out of Stair mode, because the automatic brakes on the device are no longer engaged. Letting go of the handrail (solo) or assist handle (assistant) during this transition could result in the device rolling if the landing is sloped. Personal injury or death could result.

WARNING

Maintain control while solo stair climbing. Never attempt assisted stair climbing without a properly trained assistant. Stair Mode is Manually Stabilized. The device can fall over if you do not use proper stair climbing technique. Personal injury or death could result.

ENTRY TO STAIRS - SOLO STAIR

⚠ WARNING

Avoid sloped landings or stair entries. While the device will prevent you from entering stair mode on some slopes, On landings or entries that are slightly sloped, you may be able to enter *Stair Mode*.

Accidentally entering stair mode on a slope can result in unintentional rolling. The device can fall over if you enter stairs without adequate control. Personal injury or death could result.

If there is an obstacle or lip on the landing, be cautious when pulling/pushing back. The front wheels may begin to rotate. Follow solo stair climbing instructions to continue.

> If the wheels start to rise off the ground, stop pulling/pushing back and lean forward to place the wheels on the ground and seek an alternate route.

CLUSTER SAFETY LOCK

The ibot has a climbing pattern in *Stair Mode*. The device is leaned (forward or back) to get the wheel clusters to rotate, then brought back close to the normal starting position to slow the cluster down when the moving wheels are close to the next step.

The ibot is programmed to expect this climbing pattern. If you do not bring the angle of the backrest to the normal starting position when the wheels are close to the next step, the ibot will bring the cluster to a stop and sound a tone. The clusters stay locked in that position until you return the seat angle back to the normal starting position. You will need to lean back or pull forward until the tone stops to return the device to the normal start position. Maintain your hold on the handrail(s) (or Assistant on the assist handle); otherwise, the device may fall.

If *Cluster Safety Lock* is activated it may be a signal that you need to improve your stair climbing technique.

If you are having difficulty with climbing stairs, contact Technical Support. Service will assist you with a review of stair climbing procedures or arrangements for additional training.

SOLO STAIR CLIMBING

WARNING

When solo stair climbing, never let go of the handrail. The device does not balance itself during stair climbing, so letting go of the handrail could cause the device to fall. When solo stair climbing, always maintain hold of at least one handrail when climbing the stairs and when transitioning into and out of Stair Mode. Personal injury or death could occur.

WARNING

While solo stair climbing in Stair Mode, maintain two hands on the handrail when the clusters are rotating. The device relies on your input and control.

WARNING

Never operate the device on escalators at any time or in any mode. Personal injury or death could result. Seek an alternate route.

WARNING

Avoid climbing up or down stairs that are crowded. Personal injury or death could result. Make sure the path to climb up or down is clear before starting to climb.

WARNING

Weak stairs may collapse. Never operate the device on stairs that show any signs of weakness or cannot support 550 lbs. (249 kg), including the device, you, your accessories, and personal items. Personal injury or death could result.

WARNING

Use only handrails that extend beyond the top step by at least 6 in (152 mm). Do not attempt to go downstairs unassisted if you cannot comfortably reach the handrail(s) with your seat leaning back, and the front edges of the drive wheel tires at least 6 in (152 mm) from the edge of the top landing.

WARNING

Do not switch to 4-Wheel mode until at least one set of wheels is on the landing. The device can fall over if you drive down stairs in 4-Wheel mode. Personal injury or death could result.

SOLO CLIMBING UPSTAIRS

1. Check stair and handrail condition and geometry before you start to climb.
2. Place items securely in your lap while ascending.
3. Verify you are in **Standard** or **4-Wheel Mode**.
4. Drive the device towards the bottom step so that both rear drive wheels are about 1 in (25 mm) away from the bottom step.

   If you plan to use just one handrail, position yourself within comfortable reach of the handrail.

   If you use two handrails, center yourself between the two handrails.
5. Grasp the handrail with one hand.
6. With the other hand push the **Menu** button .
7. Move the joystick **LEFT** or **RIGHT** to highlight **Stair mode** .

8. Move the joystick **FORWARD** and **HOLD** to transition to *Stair mode*.

At this point you need to confirm whether you are holding the handrail or not.

9. Hold the handrail and select the **Handrail with the Check Mark** icon.

   If you select the *handrail with an X* icon, the chair will automatically transition back to 4-Wheel mode.

10. Maintain your grasp on the handrail to prevent any rolling.

11. Use the handrail to slowly pull straight back in order to roll the rear wheels snug against the rise of the step.
12. Be aware of hand placement. With one hand, grasp the handrail from underneath (palm facing up), and with the other hand grasp the handrail from the top (palm facing down). This hand placement should be used for both one-rail and two-rail climbing.

WARNING

Do not switch handrails while solo stair climbing in Stair Mode.

13. Shift your center of gravity back by leaning against the backrest, and while pushing against the handrail(s) with one hand, pull with the other. The clusters will rotate in response.
14. As the clusters rotate to the point where one set of wheels is nearly on top of the other, lean slightly forward and pull on the handrail (s) to shift your center of gravity forward.

    Leaning slightly forward will cause the clusters to complete the rotation with the wheels landing softly on the next step. A smooth and continuous rotation of the clusters is required when climbing up stairs.
15. Slide your hand up along the handrail until you are in a comfortable position. Repeat *Step 13* to continue climbing up the stairs.
16. On the last step, when the rear set of wheels is on the landing, it is important to check the landing for bumps or thresholds.

    If the device doesn't roll back smoothly onto the landing, stop, climb downstairs, and find an alternate route.

WARNING

Landings should be flat. Bumps or thresholds on a landing may be treated as another step by the ibot. The cluster could begin to rotate over the bump (as if it were another step). If the device does not roll smoothly, stop and find another route.

17. Use the handrail to help slowly pull back (not down) onto the landing.

The front wheels will roll onto the landing.

18. Continue to push and roll the device back until the 4-Wheel mode is displayed on the user controller.
19. Select **Speed 1** or **2** or press the **Power/Quick Stop** button to continue driving.
20. Carefully drive away from the stairs.

SOLO CLIMBING DOWNSTAIRS

1. Check stair and handrail condition and geometry before you start to climb.
2. Place items securely in your lap while descending.
3. Verify you are in **Standard** or **4-Wheel Mode**.
4. Stop when the casters or front drive wheels are 6 - 8 in (152 - 203 mm) from the edge of the top landing.

   If you plan to use just one handrail, position yourself within comfortable reach of the handrail.

   If you use two handrails, center yourself between the two handrails.

5. Grasp the handrail with one hand.
6. With the other hand push the **Menu** button .
7. Move the joystick **LEFT** or **RIGHT** to highlight **Stair mode** .

8. Move the joystick **FORWARD** and **HOLD** to transition to **Stair mode**.

At this point you need to confirm whether you are holding the handrail or not.

9. Hold the handrail and select the **Handrail with the Check Mark** icon.

   If you select the *handrail with an X* icon, the chair will automatically transition back to 4-Wheel mode.

10. Go down the first step by moving the device slowly forward using the handrail(s) as a guide.
11. Allow the front wheels to roll off the landing so they are on the step, while the rear wheels remain on the landing.
12. Be aware of hand placement. One hand position needs to grasp the handrail from underneath (palm facing up), while the other hand grasps from on top (palm facing down).

⚠ WARNING

Do not switch handrails while solo stair climbing in Stair Mode.

13. To go down the next step, shift your center of gravity forward by leaning slightly forward and pulling/pushing on the handrail.

    The clusters will rotate in response to your forward lean.

14. Use the handrail(s) to help you control your lean.
15. As the clusters rotate to the point where one wheel is nearly on top of the other, shift your center of gravity backward by leaning against the backrest.

    Leaning against the backrest will cause the clusters to complete the rotation with the wheels landing softly on the next step.

    A smooth and continuous rotation of the clusters is required when climbing down stairs.

16. Slide your hand down along the handrail until you are in a comfortable position.
17. Repeat from *Step 13* to continue going down the stairs.
18. When you come off the last step to the ground, slow the cluster rotation. This can help prevent a bounce when landing.

    If you have difficulty preventing the bounce at the last step, you are able to transition to 4-Wheel mode while on the final step and drive off.

WARNING

Do not switch to 4-Wheel mode until at least one set of wheels is on the landing. The device can fall over if you drive down stairs in 4-Wheel mode. Personal injury or death could result.

19. When you have finished descending the stairs, all four wheels should be on the ground and you can transition to 4-Wheel or Standard mode.
20. Select **Speed 1** or **2** or press the **Power/Quick Stop** button to continue driving.
21. Carefully drive away from the stairs.

ASSISTED STAIR CLIMBING

Assistants should be trained to fully understand how the ibot climbs stairs and be able to perform their stair climbing tasks.

The assistant uses the assist handle to guide stair climbing by shifting the device's center of gravity. The assistant does this by tilting the device slightly forward and backward at appropriate times.

WARNING

The assistant may get caught on the riser of the step if the device is allowed to lean too far back. The device could fall down the stairs. Personal injury or death could result. Make sure there is clearance between the assist handle and the steps when leaning back.

WARNING

The assistant must never let go of the assist handle when climbing or going down stairs. The device could fall over. Personal injury or death could result. Hold the assist handle continuously when guiding the ibot in stair climbing.

WARNING

Never operate the device on stairs that show any signs of weakness or cannot support the combined weight of the device, you, the assistant, your accessories and packages. Weak stairs may collapse. Personal injury or death could result.

WARNING

Never operate the device on escalators at any time or in any mode. Personal injury or death could result. Seek an alternate route.

WARNING

Avoid climbing up or down stairs that are crowded. Personal injury or death could result. Make sure the path to climb up or down is clear before starting to climb.

WARNING

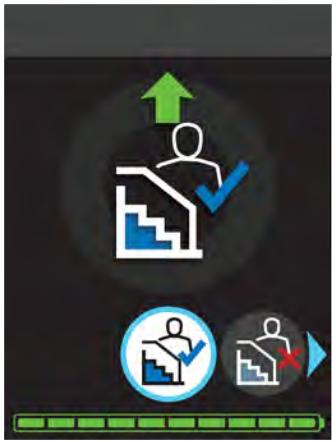
Do not switch to 4-Wheel mode until at least one set of wheels is on the landing. The device can fall over if you drive down stairs in 4-Wheel mode. Personal injury or death could result.

CAUTION

Components in the seat or base can pinch or trap an assistant's hand while assisted stair climbing. The assistant should keep their hands only on the assist handle.

ASSISTED CLIMBING UPSTAIRS

1. Check stair condition and geometry before you start to climb.
2. Place items securely in your lap while ascending.
3. Verify you are in **Standard** or **4-Wheel Mode**.
4. Drive the device towards the bottom step so that both rear drive wheels are about 1 in (25 mm) away from the bottom step.
5. The assistant should grasp the assist handle in one of three ways, based on his/her comfort:
   - Both hands pronated (palm down).
   - One hand supinated (palm up), the other pronated.
   - One hand on top of handle, the other on the upright tube of the handle.
6. The assistant should maintain a firm grasp on the assist handle throughout stair climbing to prevent any unintentional rolling.
7. Push the **Menu** button .
8. Move the joystick **LEFT or RIGHT** to highlight **Stair mode**.



At this point you need to confirm whether your assistant is ready or not.

9. Highlight the **Assisted Stair with the Check Mark** icon.

   If you select the *Assisted Stair with an X* icon, you will return to the mode selection screen.

10. Move the joystick **FORWARD** and **HOLD** to transition to **Stair mode**.

11. The assistant slowly pulls the device straight back to roll the rear wheel snug against the rise of the step.
12. Adjust your seat height to the position that allows the assistant to control the device safely.
13. The assistant should position themselves comfortably and at least one step away from where the drive wheels will land next.
14. The assistant tilts the backrest and slowly shifts the device's center of gravity backwards.

    The clusters will rotate in response to tilting the seat back.

15. As the clusters rotate to the point where one wheel is nearly on top of the other, the assistant tilts the seat slightly forward to shift the device's center of gravity forward.

    Tilting the seat forward will cause the clusters to complete the rotation, with the wheels landing softly on the next step.

16. Repeat from *Step 14* to continue climbing the stairs.
17. On the last step, when the rear set of wheels is on the landing, it is important to check the landing for bumps or thresholds.

    If the device does not roll back smoothly onto the landing, stop, climb downstairs, and find an alternate route.

18. The assistant should use the assist handle to slowly pull backwards (not down) to cause the front wheels to roll onto the landing.

    During assisted stair climbing on a landing that is limited in size, the assistant should stand to the side of the device when coming off and onto a landing. It is important that the assistant maintain control during these maneuvers.

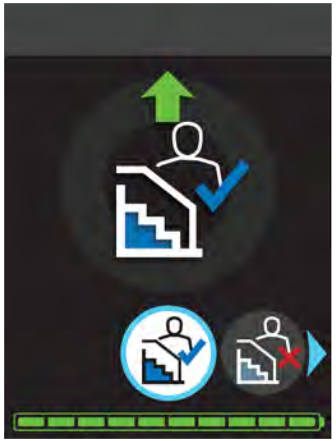
19. The assistant should maintain hands on the assist handle until you transition to 4-Wheel mode.
20. Inform the assistant that you are ready to drive so they move away from the device.
21. Select **Speed 1** or **2** or press the **Power/Quick Stop** button.
22. Carefully drive away from the stairs.

ASSISTED CLIMBING DOWNSTAIRS

1. Check stair condition and geometry before you start to climb.

   Handrails are not required for Stair Assist.

2. Place items securely in your lap while descending.
3. Verify you are in **Standard** or **4-Wheel Mode**.
4. Drive the device towards the stairs, stopping when the casters or front drive wheels are 6 - 8 in (152 - 203 mm) from the edge of the top landing.
5. The assistant should grasp the assist handle in one of three ways, based on his/her comfort:
   - Both hands pronated (palm down).
   - One hand supinated (palm up), the other pronated.
   - One hand on top of handle, the other on the upright tube of the handle.
6. The assistant should maintain a firm grasp on the assist handle throughout stair climbing to prevent any unintentional rolling.
7. Push the **Menu** button .
8. Move the joystick **LEFT or RIGHT** to highlight **Stair mode**.



At this point you need to confirm whether your assistant is ready or not.

9. Highlight the **Assisted Stair with the Check Mark** icon.

   If you select the *Assisted Stair with an X* icon, you will return to the mode selection screen.

10. Move the joystick **FORWARD and HOLD** to transition to **Stair mode**.
11. The assistant will enter the stairs by pushing the device slowly forward.

    This allows the front wheels to roll off the landing so that they are on the step while the rear wheels remain on the landing.

12. To go down the next step, the assistant shifts your center of gravity forward by using the assist handle to tilt the seat forward.

    The clusters will rotate in response to your forward tilt.

13. As the clusters rotate to the point where one wheel is nearly on top of the other, the assistant shifts your center of gravity back by using the assist handle to tilt the backrest.

    Tilting the seat back will cause the cluster to complete the rotation, with the wheels landing softly on the next step.

14. Repeat from *Step 12* to continue going down the stairs.

15. When you come off the last step to the ground, the assistant will slow the cluster rotation. This can help prevent a bounce when landing.

    If the assistant has difficulty preventing the bounce at the last step, you are able to transition to 4-Wheel mode while on the final step and drive off.

WARNING

Do not switch to 4-Wheel mode until at least one set of wheels is on the landing. The device can fall over if you drive down stairs in 4-Wheel mode. Personal injury or death could result.

    When you have finished descending the stairs, all four wheels should be on the ground.

16. The assistant should maintain hands on the assist handle to prevent unintentional rolling and allow you to transition to 4-Wheel mode.
17. Inform the assistant that you are ready to drive so they move away from the device.
18. Select **Speed 1** or **2** or press the **Power/Quick Stop** button.
19. Carefully drive away from the stairs.

REMOTE MODE

Remote Mode is used to move the ibot via the joystick when it is unoccupied. This mode is useful when maneuvering the device into a vehicle. An assistant may be needed to use Remote mode to move the ibot into the back of the vehicle.

CAUTION

Use care when loading the device using ramps as the device could slip.

Additionally, the speed and acceleration of the device is restricted to well below normal driving speeds when the device is in remote mode.

Note these features:

- The iBalance technology is not active in *Remote Mode*.
- The caster wheels are raised off the ground.
- The 4 drive wheels are on the ground.

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HANDLING

Driving Range 120
Freewheel Mode 121
Transfer In and Out of the ibot 122
Transport 123
Securing to A Vehicle 124
Traveling by Air with the ibot 125
Lift The Unoccupied ibot 126

DRIVING RANGE

Driving Range is dependent upon how you use your ibot by MOBIUS MOBILITY LLC. Always drive in the driving mode and setting best suited to the terrain and obstacles you encounter. *See "Environments For Use" on page 78.*

The length of time (or distance) you can expect from a single battery charge will be reduced by driving on slopes, rough ground or frequently climbing curbs. Powered seat adjustments can also impact the battery level.

On fully charged batteries, your ibot can go up or down at least ten flights of 20 steps.

All batteries develop a reduced capacity as they age. A battery that is near its end of life will also operate for a steadily decreasing time (or distance). This behavior is normal and will indicate to you that your battery may need to be replaced depending on your usage habits.

In all cases you should follow the instructions provided in this User Manual with respect to how to react to battery warnings.

FREEWHEEL MODE

The ibot can be moved manually by pushing the device in *Freewheel Mode*.

1. **Power OFF** the device.
2. Unlock the brake by turning the freewheel lever to the **Unlock** position.
3. Using the assist handle, push or pull the device to the desired location.
4. Lock the brake by turning the freewheel lever to the **Lock** position immediately after moving the device.

WARNING

Never leave the freewheel lever (brake release) disengaged after moving the device manually. If you fail to engage the brake, the device may roll.

WARNING

Make sure you enter freewheel mode on a level slip-resistant surface.

TRANSFER IN AND OUT OF THE IBOT

Transferring into and out of your ibot requires a good sense of balance. Always have an assistant or healthcare professional present while learning to properly transfer yourself.

To reduce the possibility of a fall, you should follow these steps before attempting a transfer:

1. Verify you are in *Standard Mode* and **Power OFF**.
2. Ensure your ibot is not in freewheel mode. *See "Freewheel Mode" on the previous page.*
3. Make sure both armrests are flipped up or removed.
4. Be careful of the footrests. If you can, remove or swing them out of the way. This will help to keep your feet from getting caught during the transfer.
5. Move your ibot as close as you can to the seat you are transferring to. If possible, use a transfer board.

⚠ WARNING

Always transfer into or out of the ibot in Standard Mode with the device powered OFF.

If the casters are not on the ground, or if the power is ON, the device could become unstable during the transfer. Personal injury could result.

⚠ WARNING

Do not use the foot plates or arm rests as supports when getting into or out of the device. The foot plates and armrests are not intended to support heavy loads.

An unnecessarily high load could cause them to give way, which could result in personal injury.

TRANSPORT

This section explains the different ways in which you might transport your ibot.

WARNING

The ibot has not been evaluated as a seat in a motor vehicle. Do not sit in the ibot while a motor vehicle is in operation.

WARNING

The device should only be transported as indicated in the User Manual.

Contact Technical Support if you have questions regarding transport of the device in a motor vehicle.

WARNING

When transporting, the ibot must be facing forward and secured by the tie-downs in accordance with the User Manual.

Do not use the vehicle's seat belt system to anchor the device. The device does not come with tie-down straps for motor vehicle use. You must anchor the device using SAE J2249-compliant tie-down strap assemblies.

Personal injury or death could result.

WARNING

Sharp edges could be exposed if the device is in a vehicle involved in an accident. Personal injury could result. Use care when handling a device that has been involved in an accident.

SECURING TO A VEHICLE

You can drive the device into a vehicle either by sitting in the device using Standard or 4-Wheel mode (depending on the degree of incline), or by transferring out and using *Remote* mode for angles up to 20 degrees.

The ibot must only be transported in a vehicle that is approved for such purposes.

1. Check that the all components are secured to or removed from the device.
2. The ibot must be locked into position by running tie-down straps through the securement points at the front and rear, marked with the following hook labels:

3. Secure the device according to the manufacturer of the vehicle restraint systems instructions. Always make sure that the fastening points on the transport vehicle are well-anchored.
4. Confirm the that the freewheel lever (brake release) is in the locked position and the device is powered off.
5. Call Technical Support if you have questions about securing the device in a motor vehicle.

TRAVELING BY AIR WITH THE IBOT

When planning to travel by air with your ibot, ask your airline if it carries wheelchairs equipped with lithium-ion batteries. The ibot must be carried as checked baggage. When checking in, inform airline personnel that the ibot is a wheelchair equipped with lithium-ion batteries. You should bring this manual, or copies of the relevant pages, with you for reference by airport personnel.

The following design features help the ibot to comply with transportation regulations:

- The batteries are of the type proven to meet the criteria in part III, sub-section 38.3 of the UN Manual of Tests and Criteria.
- All electrical circuits are isolated. Battery terminals are enclosed in their housings. They are protected from short circuits when the batteries are securely attached to the ibot.
- Removal of the user controller prevents unintentional activation. The user controller may be stowed in separate baggage for protection.
- Locking the freewheel lever (brake release) helps to prevent unintentional motion.

WARNING

Risk of short circuit.

Before arriving at the airport, ensure that visual inspection of the ibot reveals no obvious defects, such as loose or damaged batteries or cables.

CAUTION

Risk of damage or injury caused by unintentional activation or other unintentional motion.

- When presenting the ibot to be carried as checked baggage, disconnect the user controller as described in the *"Disconnect User Controller Cable" on page 156* section of this manual.
- Show airport personnel how to unlock and lock the freewheel lever as described in the *"Freewheel Mode" on page 121* section of this manual.

LIFT THE UNOCCUPIED IBOT

WARNING

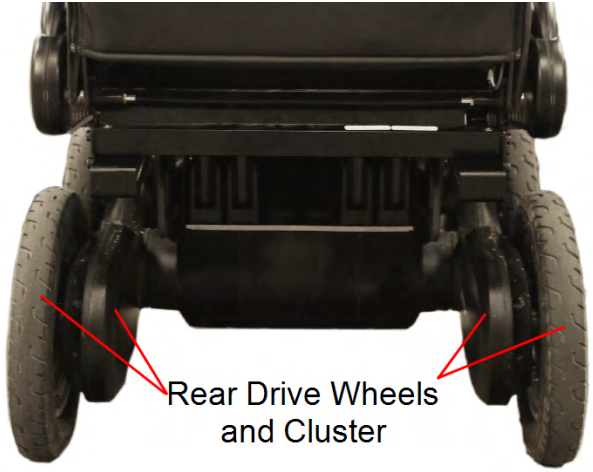
Always lift or move the device while it is powered OFF.

Attempting to move the device while it is powered ON may result in unintended movement. Personal injury could result.

CAUTION

Placing your hands near moving components or tight spaces may result in pinching or trapping hazards. Only place your hands in the identified areas.

To lift the unoccupied device, lift from the rear drive wheels or clusters and the front caster arms.



WARNINGS, CAUTIONS, AND ALERTS

The ibot User Controller is programmed to display *Warnings*, *Cautions*, and *Alerts* for your safety.

About Warnings, Cautions and Alerts 128

Auditory Alerts 130

Low Battery 131

Overheating 131

Service Required 132

ABOUT WARNINGS, CAUTIONS AND ALERTS

The ibot will notify you whenever a fault or diagnostic condition is detected. Respond to any warnings, cautions, and alerts as soon as it is safe to do so. Do not wait until the problem escalates or the ibot may take action.

When the *Horn/Mute LED light* flashes or you hear a tone, the display on the user controller will indicate the type of condition.

The ibot may take automatic safety action when it cannot continue to operate such as:

- Bringing itself to a stop.
- Turning the power OFF.
- Not allowing you to raise, lower, or tilt your seat.
- In *Balance Mode*, the ibot may transition automatically from *Balance Mode* to *4-Wheel Mode*.

WARNING

Respond to warning signals and tones immediately. A red warning icon and flashing LED light indicates the device may attempt to take an automatic safety action. Warnings indicate serious conditions that can affect your safety and the safety of people around you. Personal injury or death could result.

WARNING

A warning condition may cause the device to come to a sudden stop and cause you to lose your position or fall from the seat. Proper use of the positioning belt can reduce this risk.

Table 1: *Warnings, Cautions and Alert Symbols*

Symbol	Description
	Warnings - HIGH RISK • Red *Warning* icon in notification banner. • Continuous tone until muted and then a reminder tone every 6 seconds as the condition persists. • Flashing red Horn/Mutebutton until pressed turns to solid red. • If not corrected in a timely manner, the device may be powered OFF.
	Cautions - MEDIUM RISK • Yellow *Caution* icon in notification banner. • Tone every second until muted and then a reminder tone every 6 seconds as the condition persists. • Flashing red Horn/Mutebutton until pressed turns to solid red. • Cautions may lead to warnings if not addressed in a timely manner.

Table 1: *Warnings, Cautions and Alert Symbols*

Symbol	Description
	Alerts - LOW RISK • White *Alert* icon displays in notification banner. • Tone every second until muted. • Flashing red Horn/Mutebutton until pressed and turns to solid red. • Alerts may lead to cautions or warnings if not addressed in a timely manner.

Sometimes more than one notification or fault icon may be displayed, requiring appropriate action for each icon that is displayed. For example, if the warning and service wrench symbols are both displayed, you should transition to *Standard Mode* and contact Technical Support.

AUDITORY ALERTS

The device provides you with a tone to draw your attention to the following situations where there may not be a notification or fault icon displayed:

- You made an incorrect selection on the user controller.
- You are approaching the device's operating limits. Evaluate your surroundings to ensure you are driving within the operational limits.
- Your battery is depleting.

These conditions are not as critical as cautions or warnings but you should still respond appropriately.

LOW BATTERY

When the battery status lights are yellow or red, the *Low and Critically Low Battery* icons display on the *Home* screen along with a warning, caution or alert icon in the notification banner.

If the battery is too low, you will not be able to transition to 4-Wheel, Balance, or Stair modes.

1. If not in *Standard mode*, move to an environment that is safe and suitable to transition.
2. Transition to **Standard mode.**
3. **Power OFF** the device.
4. Plug battery charger into the device. *See "Battery Charging" on page 138.*
5. Charge the battery until it is fully charged.

OVERHEATING

When certain components are hot from driving the ibot the *Overheating* icon displays on the notification banner.

In a warning or caution condition, the device will reduce your speed.

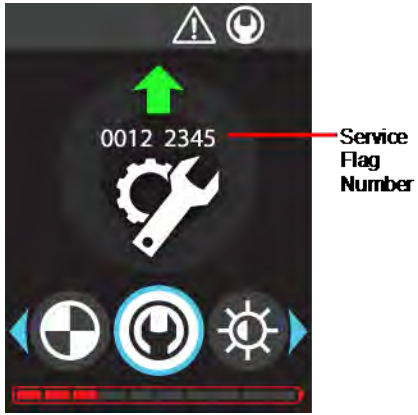
1. Stop driving if it is safe to do so or reduce activity to allow the device to cool.

   Do not climb a curb during an Overheating notification.
2. Wait until the *Overheating* icon disappears.
3. Resume driving.

SERVICE REQUIRED

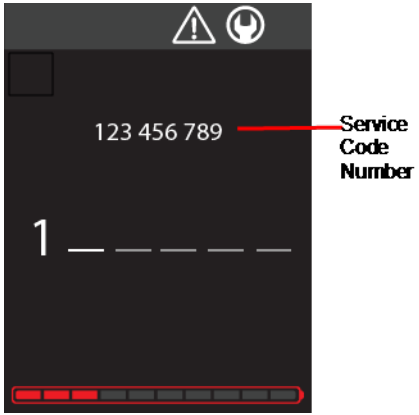
When a fault condition occurs, causing an error that needs to be fixed by a technician, the *Service Required* icon displays on the notification banner along with a warning, caution or alert icon.

1. Press **Menu**.
2. Scroll to **Settings**.
3. Select the **Service Wrench** icon.



An 8-digit *Service Flag* number is displayed.

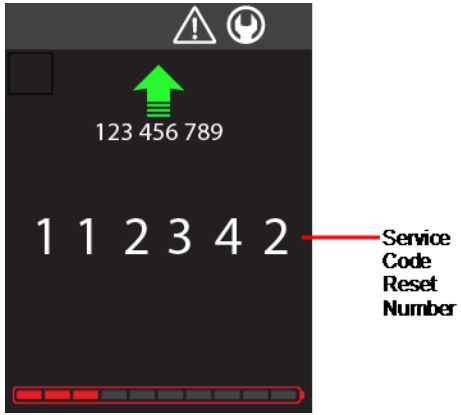
4. You may still able to drive but you will need to contact Technical Support.
5. Technical Support will direct you to enter the remote service function by moving the joystick **FORWARD** to select the green arrow.



A 9-digit *Service Code* number is displayed.

6. Technical Support will analyze the service code and provide you with a sequence of joystick movements.

   Upon completion, a 6-digit service code reset number displays.



7. Read the 6-digit service code reset number to Technical Support.
8. When instructed, move the joystick **FORWARD** and **HOLD** to clear the service code and return to the *Settings* menu.
9. If there are any errors made during the service code reset process, you will need to repeat from *Step 6*.
10. Upon three failed attempts, a new service code will be generated and you will need to repeat from *Step 5*.

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MAINTENANCE

Maintenance Frequency 136
Battery Charging 138
Remove Battery Packs 141
Install Battery Packs 142
Seat Component Adjustments 143
- Legrest Length 144
- Legrest Wedge 144
- Heel Loop 146
- Footplate Angle 146
- Armrest Height 147
- Armrest Forward/Back 147
- Lateral and Lumbar Backrest Wedges 148
- Lateral Supports 149
- Swing Away Feature 151
- Contoured Headrest 151
- Calf Panel 153

User Controller Remove and Reinstall 153
- Swing User Controller Out 154
- Swing User Controller IN 155
- Remove User Controller from Swing Arm 155
- Disconnect User Controller Cable 156
- Connect User Controller Cable 157
- Reinstall User Controller 158

Daily Inspection 159
Cleaning 161
- Cleaning Metal and Painted Parts 161
- Cleaning The Display 161
- Cleaning Upholstery 162
- Cleaning Methods to Avoid 162

Tire Care 163
- Check Tire Pressure and Condition 164
- Replace Tire or Tire Inner Tube 164

Storage 168

MAINTENANCE FREQUENCY

This section explains how to keep your ibot in proper running order. It includes information about charging the batteries and general maintenance.

You should visually inspect the device every time you use it to assess the need for service and ensure safe operation.

For repairs not described in this section, you will need to contact technical support.

In addition to your ibot, you will receive the following accessories and tools:

- ibot battery charger and power cable
- 5 mm hexagonal wrench

It is recommended that you acquire a tire gauge and tire pump.

Table 1: *Maintenance Frequency*

Action	Daily	Weekly	Monthly	Yearly
Charge Batteries	X			
Inspect Tires	X			
Check all Visible Moving Parts for Wear	X			

Action	Daily	Weekly	Monthly	Yearly
Check for Oil Leaks or Dirt Build-up	X			
Clean Product		X		
Check Upholstery for Wear		X		
Inspect Fasteners and Verify they are NOT loose			X	
Inspect Charging and USB connectors for wear and corrosion.				X
Preventive Maintenance Check Performed by the Approved Service Provider				X

BATTERY CHARGING

WARNING

Read this section completely before attempting to use the battery charger.

WARNING

Indoor Use Only:

Do not expose the battery charger to rain or other sources of moisture.

The device uses Li-ion batteries.

- Never run your battery completely flat.
- Don't top off the battery with frequent charging

Fully depleted batteries will need to be charged up to six hours. Plan to charge the batteries when you have enough time to get a full 100% charge.

Occasional use of the ibot, before the display indicates that the batteries are fully charged, is acceptable if the need is urgent.

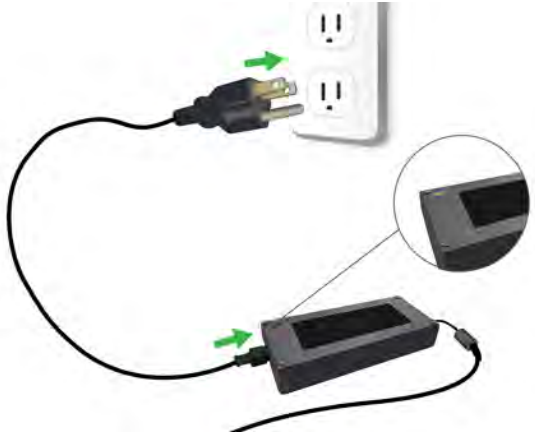
Table 2: *Recommended Battery Charging Frequency*

User Type	Frequency
Daily Users	Charge Nightly
Occasional Users	Charge your batteries before an outing and after active use.

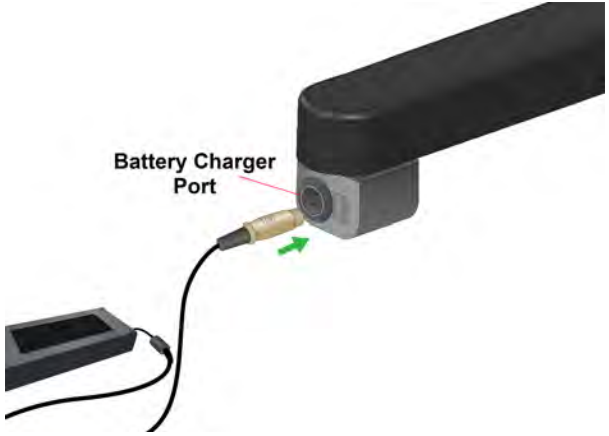
The batteries can only be charged when the power is OFF. If the battery charger is connected to the device while its power is ON, an audible beep sounds and the batteries do not charge.

Charge the batteries in a dry, well-ventilated indoor area at a room temperature 50 - 104 °F (10 - 40 °C).

1. Power OFF the device.
2. Transfer out of the device.



3. Plug the power cord into a standard AC wall outlet (single-phase 100-240V).
4. Connect the power cord to the battery charger.
5. Verify the green LED light is visible on the battery charger.



6. Plug the battery charger cable into the battery charging port by aligning the pins.

7. Verify the charging icon shows on the user controller.

8. When the batteries are fully charged, a battery fully charged icon displays on the user controller.
9. Disconnect the battery charger cable from the device by pulling back on the cable connector.
10. Unplug the power cord from the wall outlet.

If you see a *Battery Fault* icon on the user controller while charging, *see "Battery Charging Fault" on page 170*

REMOVE BATTERY PACKS

1. The device must be powered off and unoccupied before removing the battery packs.
2. Disconnect battery charger cable from the device.
3. Remove the fastener holding the battery in place.

4. Gently lift the battery from its connector and slide it towards the back of the device to remove.

   Be careful not to damage the raised battery connector on the device.

5. Repeat *Step 3* and *Step 4* for the all other batteries if required.

WARNING

Only remove a battery pack in environments that do not allow water or other contaminants into the device or battery pack through the connectors. This can cause shock hazards.

Always ensure all battery connectors are covered by manufacturer approved parts.

INSTALL BATTERY PACKS

1. The device must be powered off and unoccupied before installing the battery packs.
2. Hold the back of the battery above the power base battery connector and slide the front nose into the front retainer.
3. Line up the mounting hole and gently press the battery pack onto its electrical connection.
4. Install and tighten the fastener that holds the back of the battery.

   Be careful not to cross-thread.

5. Repeat for the other battery packs, if required.
6. Fully charge the battery packs. *See "Battery Charging" on page 138.*
7. Power ON the device to verify operation.

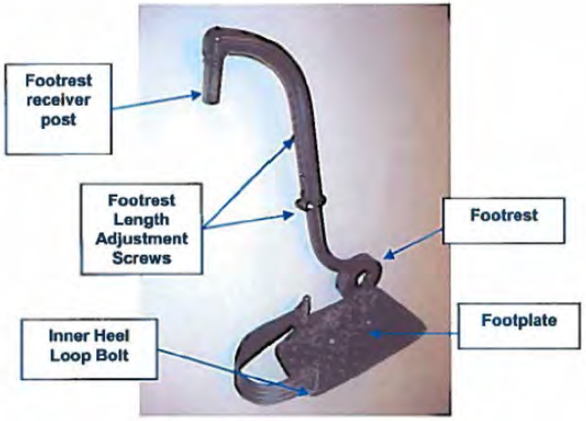
SEAT COMPONENT ADJUSTMENTS

Your seating was configured for you by your clinician. When making adjustments to your ibot, you should:

- Make all adjustments with the device **powered OFF** in *Standard Mode*.
- Consult with your clinician to ensure the adjustments do not compromise your seating requirements.
- Contact Technical Support if any unusual device behavior occurs after any adjustments. You may need to be CG Fit to the device at the new settings.
- Fully complete each procedure. Do not operate the device without all fasteners and parts properly installed.
- Contact Technical Support if you do not fully understand how to make the adjustments outlined in this section.
- Use caution when working with tools and when working in tight areas to avoid cuts and pinched fingers.

LEGREST LENGTH

1. Using a 5 mm hex wrench, loosen the upper bolt on the legrest tube and remove.
2. Loosen the collar bolt and slide the lower tube and footplate to the desired length.



3. Align holes, re-insert and tighten the bolts.

LEGREST WEDGE

The legrest angle is adjustable with a removable wedge. If the wedge is in place, it positions the legrest at 70 degrees; with no wedge it is 85 degrees.

INSTALL THE LEGREST WEDGE

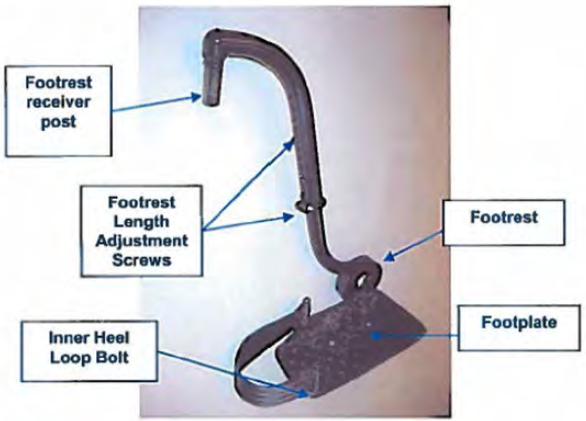
1. Remove the legrest. *See "Legrests" on page 37.*
2. Use the legrest receiver block to rotate the crossbar upward, opening the housing for the wedge.
3. Insert the wedge with the threaded hole facing forward.
4. Align the holes and install the bolt with a 5 mm hex wrench.
5. Repeat for the opposite side.

REMOVE THE LEGREST WEDGE

1. Remove the legrest. *See "Legrests" on page 37.*
2. Use a 5 mm hex wrench to remove the fastener located on the front of the crossbar, securing the wedge.
3. Use the legrest receiver block to rotate the crossbar upward, opening the housing for the wedge.
4. Pull the wedge out of the bottom of the housing.
5. Repeat for opposite side.

HEEL LOOP

To adjust the heel loop position, use two 4 mm hex wrenches. Position one wrench in the top inner heel loop bolt, and position the second wrench in the bottom inner heel loop bolt. Remove the bottom inner heel loop bolt using the top wrench to prevent the whole bolt from spinning. Reposition, then reinsert and tighten the bolt.



FOOTPLATE ANGLE

To adjust the footplate angle, loosen the three bolts located around legrest. Manually move the footplate angle to the desired location and tighten the bolts.

ARMREST HEIGHT

To change the height of the armrest, use a 5 mm hex wrench. Remove the two bolts located on the side of the armrest. Move the armrest to the desired position, align holes, reinsert the bolts and tighten.

ARMREST FORWARD/BACK

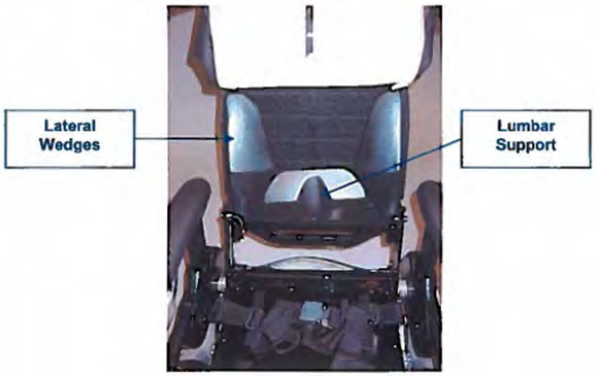
The armrest pad can be positioned either more forward or back depending on positioning needs.

To adjust, unzip the upholstery underneath the armrest. Using a 5 mm hex wrench, loosen the two bolts on the underside of the upper armrest tube.

Do not remove: one to two turns is sufficient to adjust. Move the armrest pad to the desired position and tighten the two bolts.

LATERAL AND LUMBAR BACKREST WEDGES

The lateral and lumbar support pads behind the backrest foam can be adjusted for comfort. From the back of the device, unzip the backrest upholstery on both sides. Unclip the upholstery J-hook that runs along the bottom of the backrest. Lift the backrest foam to gain access to the lateral and lumbar support pads. Adjust the lateral pad thickness by adding or removing sections, which are joined with Velcro® fasteners. The lateral and lumbar pads are attached to the backrest with Velcro® fasteners. Adjust the thickness or position of the pad, put the backrest foam back into position, and zip up the backrest upholstery. Clip the J-hook along the bottom of the backrest into place.

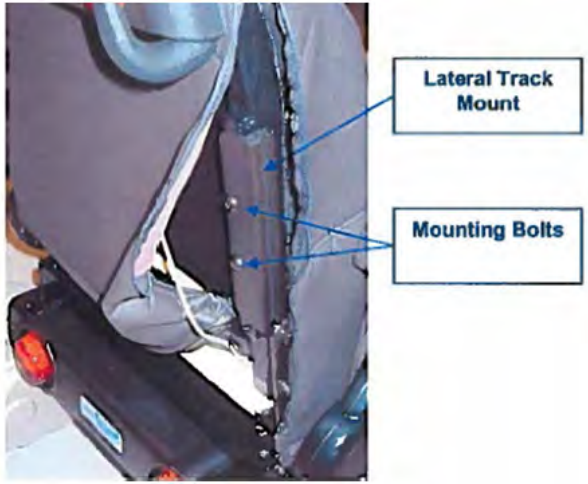


LATERAL SUPPORTS

If your device is equipped with optional lateral supports.

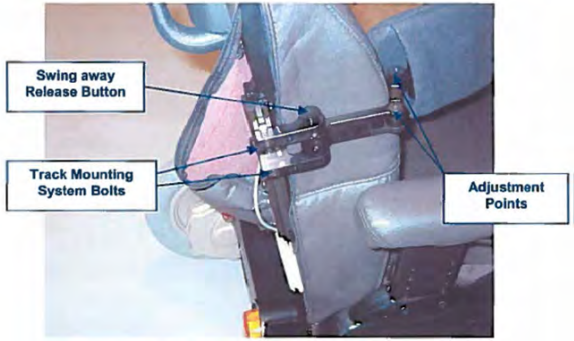
INSTALLING AND ADJUSTING LATERAL SUPPORTS

The lateral supports will come equipped with a track mounting system. Unzip the upholstery on both sides to reveal the right and left track mounts that are attached to the ibot back rest.



The height of the track can be adjusted to provide a range of placement of the lateral support. This is accomplished by using a 5 mm hex wrench. Remove the 2 mounting bolts, adjust the track, align holes, then reinsert the bolts and tighten.

The track mounting system of the lateral support will slide into the track mount, which provides upward and downward adjustment. When the proper position is achieved, tightening the two bolts will secure the lateral support at that position.



Adjustment of the pad inward and outward is achieved by loosening the bolts at each link point. When the desired position is achieved, tightening the bolts will secure that position.

SWING AWAY FEATURE

The lateral pad can be swung out of the way without requiring repositioning the pad, by pushing down on the release button and swinging the pad away. It is returned by pushing the pad back in so the button will pop up.

Note: It is recommended that you first swing away the user controller, and then raise the armrest before swinging away the lateral pad. This allows room for the armrest to be stowed in the rear-most position needed for a lateral transfer.

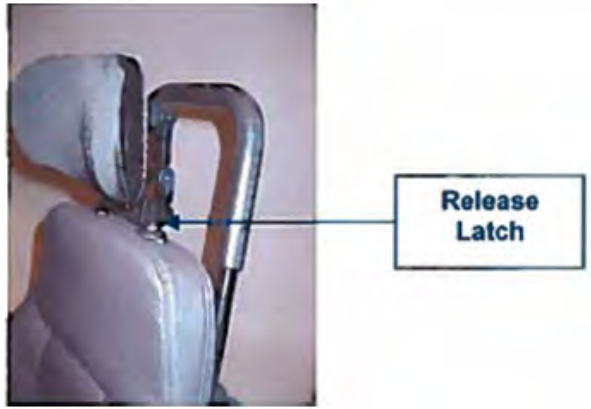
CONTOURED HEADREST

If your device is equipped with the optional contoured headrest:

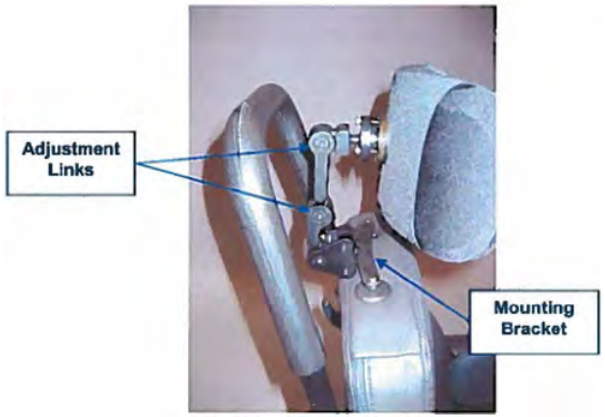
INSTALLING AND ADJUSTING

The *Contoured Headrest* will mount into the same receiver as the Standard Headrest. First remove the Standard Headrest, press the release latch, and pull out to remove from receiver.

Install by sliding the mounting bracket of the Optional Headrest into the two receiver holes while pressing the release latch on the outside of the Left Receiver.



To adjust the angle of the headrest, loosen the bolts located at each link point, adjust as desired, and then tighten the bolts.



Note: In some configurations, these links may protrude behind the *Assist Handle*. Be careful of your surroundings to avoid hitting obstacles.

CALF PANEL

If your device is equipped with the optional calf panel, remove the Velcro® attachment straps and place on the legrest tubes.

USER CONTROLLER REMOVE AND REINSTALL

The user controller is attached to a swing arm so that you can move it in and out of the driving position.

It can be removed from the swing arm mount for use during Remote mode and troubleshooting.

SWING USER CONTROLLER OUT

1. Power OFF or use Speed Setting 0 to deactivate the joystick.

2. Locate and pull back on the latch on the side of the user controller swing arm. This allows the swing arm to move.
3. Continuing to pull back on the latch, gently push the user controller with your opposite hand to swing the user controller out to the side.

⚠ CAUTION

Be careful of the cable connection interfering with the swing arm when retracting the user controller. Improper cable routing could cause the cable to be pinched.

SWING USER CONTROLLER IN

1. Gently push the user controller forward until it is locked in the driving position.

REMOVE USER CONTROLLER FROM SWING ARM

1. Power OFF.
2. Follow steps to *"Swing User Controller Out" on the previous page*
3. Push down on the user controller swing arm lever.

4. Slide the user controller forward to detach it from the mount.

   When removed, the user controller remains connected to the armrest through a cable.

DISCONNECT USER CONTROLLER CABLE

1. Power OFF.
2. Open the Velcro® strap located under the armrest.

3. Pull out the excess cable from inside the armrest cover.

4. Pull the excess cable through the user controller swing arm to expose the metal collar connection.

5. Twist the metal collar until the cable is free and pull to release.

CONNECT USER CONTROLLER CABLE

1. Align both ends of the metal collar connection according to the keyed plugs and push together.
2. Twist the metal collar clockwise to tighten the collars together.
3. Pull the excess cord through the swing arm and stow any excess cord under the cover of the armrest and secure with the Velcro® strap to prevent entanglement.

REINSTALL USER CONTROLLER

1. Slide user controller bracket into the receiver mount. Be sure that the user controller is locked in place.

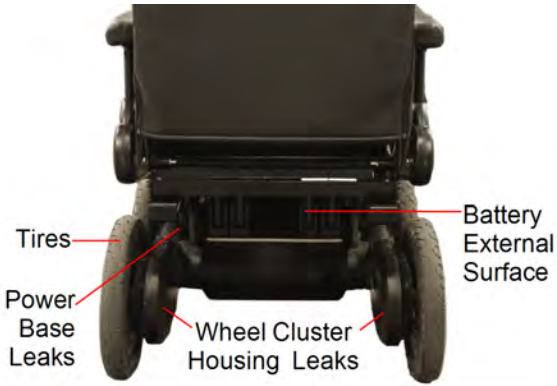
2. Pull excess cord through the swing arm and stow any excess cord under the cover of the armrest and secure with the Velcro® strap to prevent entanglement.

3. Return swing arm to the locked driving position.

DAILY INSPECTION

Daily inspections ensure the device is always in good operating condition. As part of your daily routine, visually inspect your device for signs of damage and wear.

1. Verify the power is OFF.
2. Check for oil leaks by inspecting:
   a. Power base
   b. Cluster housing
   c. The ground under the device for signs of oil drippings.
3. Check for parts that are bent, cracked, or damaged by inspecting:
   a. Seat lifting arms
   b. Caster assembly
   c. Footrests



4. Inspect the wheels for cracks, splits, and objects in the tread that can cause punctures.
5. Check that all battery slots are occupied and properly secured.

WARNING

Never operate the device if you detect oil leaks or damaged parts. Injury or death could result. Contact Technical Support immediately.

WARNING

Never operate the device if you detect worn or damaged tires or low tire pressure. These conditions may cause the device to become unstable and tip over. Personal injury or death could result. Replace damaged or worn inner tubes and tires.

CLEANING

It is recommended that you clean your device weekly. Cleaning the device helps keep it in top operating condition.

Make sure to clean the device after you driven through salt, sand, and other debris to prevent rust and corrosion.

The device meets IPX4M requirements for protection against harmful ingress of water. Clean the device or any of its parts only when the power is OFF.

Contact Technical Support immediately if you suspect the ingress of water into the device.

CLEANING METAL AND PAINTED PARTS

Clean with soap and water. Use a spray bottle to apply for minimal liquid dispersion on the device. Wipe all parts dry using cloth or paper towels. Do not use a hose, or a sponge and bucket of cleaning solution. Car polish can be used to polish painted surfaces.

CLEANING THE DISPLAY

Clean the user controller display with plastic and Plexiglas® cleaner such as Windex®. Always moisten the cleaning cloth or tissue with plastic cleaner, eyeglass cleaner, or other safe solution.

CLEANING UPHOLSTERY

The upholstery protects the core from moisture, abrasion, and wear. Wash the upholstery with soap and water. Wipe the upholstery with a damp cloth to dry.

Cleaning may reduce the fire retardant properties of upholstery fabric. Use care with potential ignition sources near seating upholstery.

CLEANING METHODS TO AVOID

Never use a garden hose or power washer to clean your device. You could force water past seals and into electronic and mechanical parts that must never be wet.

Do not use a dry cloth or abrasive cleaners on the display. They will scratch the display.

⚠ WARNING

Use only the cleaning methods recommended in this manual.

Using unacceptable cleaning methods may cause device damage, warranty violations, and possible safety problems.

⚠ WARNING

Never apply waxes, finishes or tire treatments to the tires. Doing so could cause loss of traction. Injury or death could result. Only clean the tires using scouring cleanser and a brush. Wipe the tires clean, using a moist towel.

TIRE CARE

Check drive wheel tire condition, wear, and pressure daily and any time they appear soft, worn, or damaged.

Inspect the caster wheels for wear and cracks. Check all tires for cuts, bulges, cracks, and other signs of damage or weakness.

Contact Technical Support if tires are damaged or weakened.

WARNING

Always turn the power OFF and lock the freewheel lever before performing any tire maintenance. Unintentional device movement could cause personal injury or death. Only perform tire maintenance with the device OFF, and the freewheel lever in the locked position.

WARNING

Only tip the device when the power is OFF and it is unoccupied. Use the backrest and assist handle to tip the device. Do not grasp the batteries, seat arms, electronic enclosures, shrouds, armrests, or the user controller.

CHECK TIRE PRESSURE AND CONDITION

Proper and equal tire pressure is needed in all tires for good performance, long tire life, and safety.

Tire pressure is 55 psi (380 kPa).

Visually inspect the tires daily to see if they have lost pressure.

- Do not over-inflate the tires. The tires are small and do not need much air. Use a tire pressure gauge to check the pressure periodically when inflating the tires. Be careful not to release air from the tire when checking pressure.
- Slow air leaks may be due to a damaged tire stem valve. Contact Technical Support if you think you have a damaged tire stem valve.
- If you experience a flat tire, always transition to Standard Mode as soon as it is safe to do so.

REPLACE TIRE OR TIRE INNER TUBE

The following tools are required to replace the tire inner tube:

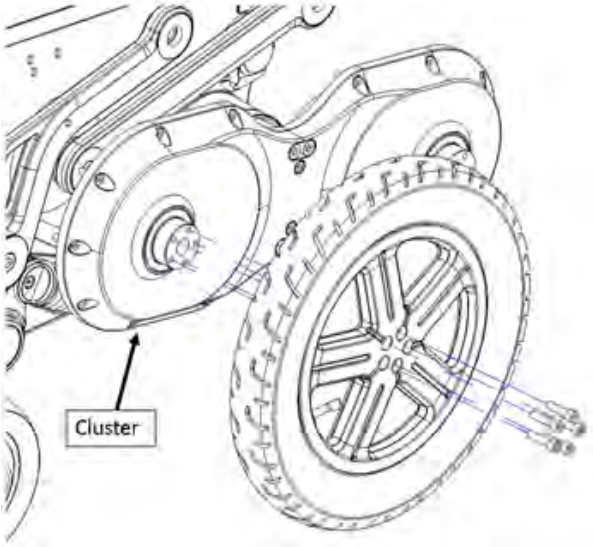
- 5-mm hex wrench
- Tire pump/air compressor
- Pressure gauge
- Small, flat head screwdriver or ballpoint pen
- Support pieces (ex. blocks of wood)
- Calibrated torque wrench. Range must include 133 in.-lbs. (15 Nm) and 177 in.-lbs. (20 Nm).
    - 5-mm hex bit

1. Ensure the device is powered OFF, unoccupied, and the battery charger is unplugged.
2. Use a support piece under the cluster to prop the device up until the wheel is off the ground.

WARNING

Never tip the device when the power is ON or when anyone is sitting on it. Improperly lifting drive wheels from the ground may cause drive wheels and the cluster to move rapidly and unexpectedly. Personal injury or death could result.

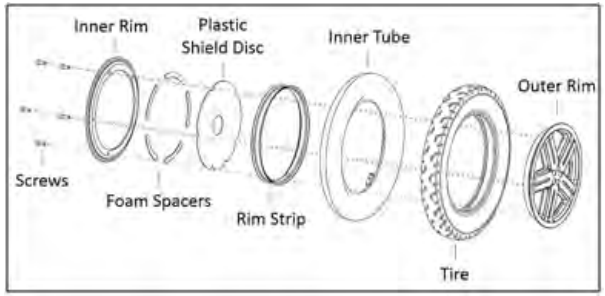
To tip the device confirm the power is OFF, then use the backrest and the assist handle.



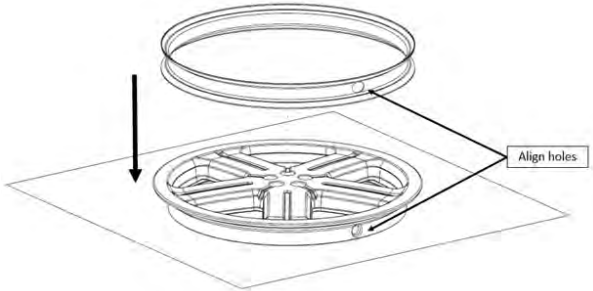
3. Use a 5 mm hex wrench to remove the five screws holding the wheel to the device.
4. Deflate the tire by pressing on the end of the valve stem with a small screwdriver or ballpoint pen.

⚠ WARNING

Failure to release air pressure prior to removing the inner rim may cause the tire to come off the rims suddenly and forcefully. Release pressure prior to disassembling the wheel or personal injury could result.



5. Use a 5-mm hex key to remove the five screws holding the inner rim to the outer rim.
6. Disassemble the inner rim, plastic shield disc, rim strip, inner tube, tire, and outer rim.
7. Place the new inner tube into the tire (inner tube replacement) or place the existing inner tube into the new tire (tire replacement) and inflate it slightly so that it holds its shape.



8. Install the rim strip onto the outer rim, making sure to align the valve stem hole.

   For easier installation, place the outer rim on a flat surface and stretch rim strip over the top.
9. Install the tire onto the outer rim by inserting the valve stem through the hole.

Valve stem must be angled towards the outside of the wheel and evenly seating the tire around the rim.

10. Place the plastic shield and then the inner rim onto the back of the tire.

    Make sure the cutout in the plastic shield aligns with the valve stem and the foam spacers are between the shield and the inner rim.

11. Secure the rims to each other using a torque wrench (5-mm hex bit) and five new shorter screws, tightening the screws in a star pattern.

    Tightening torque (star pattern): 133 in.-lbs. (15 Nm).

⚠ CAUTION

Do not reuse fasteners. Replace any used fasteners with new fasteners provided by the manufacturer.

⚠ WARNING

Ensure all fasteners have been securely tightened prior to putting the device back into service.

12. Check that the tire is evenly seated around the entire wheel and that it did not get pinched between the rims.
13. Inflate the tire to 55 psi (380 kPa).
14. Reinstall the valve stem cap.
15. Secure the wheel to the device using a torque wrench (5 mm hex bit) and five new longer screws, tightening the screws in a star pattern.

    Tightening torque (star pattern): 177 in.-lbs. (20 Nm).

Confirm the following:

1. Tire pressure inflated to 55 psi (380 kPa) and is not leaking air.
2. All five screws holding the drive wheel to device were installed with the correct torque and in a star pattern.

3. All five screws holding the rims together were installed with the correct torque and in a star pattern.

Verify the replacement was done correctly by performing the following performance checks:

1. With the device in ***4-Wheel Mode***, spin the device in place one full revolution to the left, then one full revolution to the right.
   a. Ensure wheel does not show visible wobble or make an audible rattling noise while driving.
2. With the device in *4-Wheel Mode*, drive around for a minute at varying speeds and turning to both sides.
   a. Ensure wheel does not show visible wobble or make an audible rattling noise while driving.

STORAGE

This section describes the procedure to use when storing the device for several months.

- Always store your ibot fully charged.
- Confirm the device is powered OFF.
- Store the ibot on a level surface in a clean, dry place between 50 - 104 °F (10 - 40 °C).
- Check batteries once a month and recharge as needed.
  - If you expect to store the ibot for more than 4 months, remove the batteries and store them separately.
- Do not store items on the ibot.

TROUBLESHOOTING

Restart 169
Battery Charging Fault 170
Operation at Low Temperature 171
Communication Lost 171
Display Frozen 172
ibot Tipped Over 173
Total System Shutdown 174
Standard Mode Recovery 175
Stair Mode Recovery 176
Method 1 176
Method 2 176
Method 3 176
Mode Unavailable 180
Processor Error 180

RESTART

In the case that your ibot is not performing as you expect and there are no visible warnings, cautions or alerts, a simple power cycle may be required to clear the issues.

Follow steps to transition to *Standard Mode* and **Power OFF** *"Power OFF" on page 49* and **Power ON** *"Power ON" on page 48*.

Frequent restarts may be an indication that the device needs service. Contact Technical Support *See "Technical Support" on page 181.*

BATTERY CHARGING FAULT

The *Battery Charging Fault* icon may appear in the following conditions:

- Power is not getting to the battery charger
- The batteries or charger are out of temperature range.
- The batteries or charger are damaged.

1. Disconnect the charger cable from the device and from the wall.
2. Verify the battery charging port is clear of debris.
3. Power ON the device to view battery status.
4. If battery status is fully charged, the device is ready to be used.
5. If battery status is less than fully charged, power OFF, plug into the wall, and reconnect the charger cable.
6. If the battery charging fault reappears, contact Technical Support.

OPERATION AT LOW TEMPERATURE

CAUTION

Reduced performance at low temperature.

If the product has been stored in temperatures below 32 °F (0 °C) for more than one hour, then you must EITHER place the product in an environment above 32 °F (0 °C) for one hour prior to usage OR operate in Standard Mode ONLY, until it has been operating in temperatures above 32 °F (0 °C) for more than one hour.

Note: At temperatures below 32 °F (0 °C), Speed 2 is not available.

COMMUNICATION LOST

When there is a failure in communication, the user controller screen may be blank or display the *Communication Lost* icon and the *Power Off Request (POR) Button* on the power base blinks red.

1. If in *Stair Mode* continue to a stable landing.
2. Check the cable connection to the user controller and reconnect if needed.

   If the cable was disconnected, the *Power Off Request Button (POR)* button blinks.

Note: This may be used to exit balance mode by intentionally disconnecting the cable connection to activate the POR button.

3. If the user controller is unresponsive, press the **POR Button** on the front of the power base to power OFF.

   If you are in Balance mode, the device will perform a controlled automatic transition to 4-Wheel mode before powering off.

4. Power ON using the power button on the user controller.
5. If the communication lost icon reappears, disconnect and reconnect the user controller cable and try again to power ON. *See "Disconnect User Controller Cable" on page 156.*
6. If the condition persists, Power OFF, unlock the freewheel lever (brake release) and have the device manually pushed.
7. For further assistance, contact Technical Support.

DISPLAY FROZEN

If your user controller display is unresponsive to commands, you will need to power cycle the device.

Note: If you are in Balance mode follow instructions from *Communication Lost* to transition onto four wheels. *See "Communication Lost" on the previous page.*

WARNING

Operating the Forced Power OFF when in Balance or Stair mode can cause the device to fall over.

The device will fall unless someone is capable of keeping it upright in Balance mode or you or your assistant can hold onto the handrail or assist handle in Stair mode.

1. Press and HOLD the **Menu** button for ten seconds to go directly to the *FPO icon*.

2. Move the joystick FORWARD to select **FPO**.
3. Move the joystick **FORWARD** and **HOLD** until the white progress indicator is complete.

4. The ibot will power OFF.
5. When you power ON follow steps for Recovery. *See "Standard Mode Recovery" on page 175.*

IBOT TIPPED OVER

1. Power OFF the device.
2. Assess your situation and guide assistants on the best way to help you transfer out of the device.
3. Guide assistants on steps to upright the device.
4. Once upright, power ON. *See "Standard Mode Recovery" on page 175.*
5. If the device is not functioning appropriately or shows any signs of damage, call Technical Support.

TOTAL SYSTEM SHUTDOWN

The *Total System Shutdown* icon displays when a fault occurs and the system is unable to operate in any mode. The ibot needs to be powered down safely.

1. **Power OFF** the device.
2. Assess your situation and guide assistants on the best way to help you transfer out of the device.
3. Move the device to a safe and level environment.
   - In Stair Mode, multiple people may be needed to move the device. Inform those willing to assist that the device weighs approximately 220 lbs (100 kg). *See "Stair Mode Recovery" on page 176.*
   - In Standard, 4-Wheel, Balance, and Remote modes, unlock the freewheel lever (brake release) and have the device manually pushed. *See "Freewheel Mode" on page 121.*
4. Once in a safe, level place, lock the freewheel lever (brake release).
5. Position the unoccupied device on all four wheels if possible. If not possible, then place the device on its back.
6. Power ON the device.
7. Follow *Recovery* from *Step 2*
8. If *Recovery* is unsuccessful or the *Total System Shutdown* icon persists, power OFF and call Technical Support.

   You will not be able to operate the device in any mode until the *Total System Shutdown* condition has been resolved.

STANDARD MODE RECOVERY

After a *Forced Power Off* using the controller or by pressing the ***Power Off Request*** button on the power base, the *Recovery* screen may appear when powering ON the device.

WARNING

The device is not actively stable in Recovery mode and can tip if leaned too far. Do not sit in the seat in Recovery mode.

Note: Do not follow *Standard Mode Recovery* instructions after an FPO on the stairs. Refer to *"Stair Mode Recovery" on the next page*instead.

1. Ensure the device is unoccupied.

2. Move the joystick according to the screen prompts to adjust the seat back to the *Standard Mode* position.
3. After completing the adjustment the *Home Screen* should return to normal driving in *Standard Mode*.
4. If you need additional assistance, contact Technical Support.

STAIR MODE RECOVERY

Call Technical Support if you have any questions or concerns and need assistance.

There are three methods to removing your ibot from the stairs.

METHOD 1

1. Ensure the device is powered OFF and unoccupied.
2. If possible, multiple assistants can lift the device and carry it to a safe location.

METHOD 2

1. Ensure the device is powered OFF and unoccupied.
2. Unlock the freewheel lever (brake release).
3. Using the assist handle, manually freewheel the device down the stairs one step at a time. Make sure to maintain control of the device at all times.

METHOD 3

This method allows the operator or assistant to use the controller joystick to manipulate the cluster/wheels to guide the ibot up or down the steps.

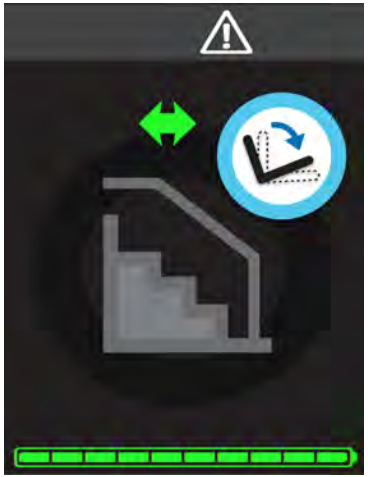
1. Ensure the device is powered OFF and unoccupied.
2. Determine your closest safe location. That may be upstairs or downstairs.
3. Power ON the device.

The *Recovery* mode screen display.

4. Push the **Menu** button.

5. Under the *Mode Selection* menu, move the joystick **LEFT** or **RIGHT** to highlight *Stair Mode Recovery*.
6. Move the joystick **FORWARD** to select **Stair Mode Recovery**.

   You are returned to the *Home Screen* displaying the *Stair Mode Recovery* screen.



7. Hold the assist handle in one hand ensuring that you are able to manipulate the user controller with your other hand.
8. Raise the backrest slightly from the stairs to where you can hold the chair comfortably.
9. Move the joystick according to the screen prompts.
10. Using the seat tilt adjustment, rotate the wheel cluster until the front wheels come down on the next step.
11. After each step, ensure the wheels are pulled tight against the riser.
12. Continuing to stabilize the chair with the assist handle, rotate the wheel cluster again until you are off the stairs.
13. Push the **Menu** button.

14. Under the *Mode Selection* menu, move the joystick **LEFT** or **RIGHT** to highlight *Standard Mode Recovery*.
15. Move the joystick **FORWARD** to select **Standard Mode Recovery**.

You are returned to the *Home Screen* displaying the *Standard Mode Recovery* screen.

16. Move the joystick according to the screen prompts to return to *Standard* mode driving.

MODE UNAVAILABLE

When the driving mode has an X above it in the driving mode menu, it could be due to:

- The mode is not available from your current mode
- The device is limiting mode options due to your environment (slope)
- Insufficient battery power
- The device is experiencing a fault condition, contact Technical Support

The mode can be selected after the limitation has been identified and resolved.

PROCESSOR ERROR

The *Processor Error* displays on the *Home Screen* when there is an internal error within the system.

The ibot will be disabled for driving. To resolve the error:

1. **Power OFF** the device using the Power/Quick Stop button or FPO process.
2. Power On the device.
3. If the Processor Error reappears, follow the *"Remove Battery Packs" on page 141* and *"Install Battery Packs" on page 142* steps.
4. If after powering on the *Processor Error* persists, power OFF and call Technical Support.

TECHNICAL SUPPORT

Customer Replacement Parts 182
Repair of defective units 182
Warranty 183

CUSTOMER REPLACEMENT PARTS

Customer Replacement Parts are components or accessories that you can replace and technical support is not typically needed. Replacement parts are shipped with illustrated instructions that describe how to remove the old part, and how to install and test the replacement part. You will also receive packing and shipping instructions for part returns, where applicable. A separate service manual is not available.

WARNING

Incorrect or poorly performed repair works may make it dangerous to use the device. The manufacturer accepts no liability for any personal injury or damage to the device and its surroundings that occurs on account of incorrect or poorly performed repair work.

REPAIR OF DEFECTIVE UNITS

Mobius Mobility LLC has a *Technical Support* department to meet the varied service needs of its customers. To contact Mobius Mobility LLC:

- (Customer Service Information goes here)

Contact Technical Support for part numbers and information on which parts are customer replaceable on the ibot.

Service to components that do not fall under customer replacement parts must be completed by your manufacturer approved service provider.

Only use Mobius Mobility LLC specified parts.

WARNING

Discontinue use of any system component and contact Technical Support in the event a component stops working as expected.

WARRANTY

ibot LIMITED WARRANTY

Mobius Mobility LLC provides the following Limited Warranty to the initial retail purchaser (“Original Purchaser”) of an ibot Mobility System or an ibot-manufactured accessory sold for use with an ibot ("Product”). This Limited Warranty is not transferable.

Mobius Mobility LLC warrants to the Original Purchaser that the Product will be free from defects in material and workmanship for the Applicable Limited Warranty Period as set forth below, which commences on the date the Product is delivered to the Original Purchaser. A loaner system is not available.

Product	Applicable Limited Warranty Period
Wear Items	30 days

Product	Applicable Limited Warranty Period
Batteries and Battery Charger	6 Months
Remainder of ibot and all other Products	24 Months

This Limited Warranty does not cover damage or malfunction of any Product directly or indirectly caused by: use of the Product not in accordance with ibot's instructions as set forth in the ibot User Manual; failure to maintain the Product as set forth in the ibot User Manual; fitting of the Product by a person other than an Mobius Mobility LLC-approved clinician; disassembly, modification of, or attempt to repair the Product by any person other than an Mobius Mobility LLC or a Mobius Mobility LLC-approved technical support person except to the extent the ibot User Manual describes the modification or repair as a modification or repair to be performed by the user of the Product; ordinary wear and tear, which, depending upon the amount of use of the Product, may result in Wear Items or Batteries needing replacement prior to expiration of the Applicable Limited Warranty Period and will not be covered by this Limited Warranty; factors external to the Product such as, without limitation, failure of or faulty electrical power, accidents, collisions, dropping, or objects striking the Product. To obtain warranty service, the Original Purchaser must, during the Applicable Limited Warranty Period, contact the Mobius Mobility LLC-approved clinician who fit the Product for the Original Purchaser or contact Mobius Mobility LLC directly at (Customer Service Information goes here). If (and only if) requested by Mobius Mobility LLC, the Original Purchaser must send the Product to Mobius Mobility LLC (or a Mobius Mobility LLC-designated clinician or technical support center) for warranty service in packaging provided by Mobius Mobility LLC. Mobius Mobility LLC will arrange for shipment, and return shipment, between Original Purchaser at an address in the United States and Mobius Mobility LLC or an Mobius Mobility LLC-designated clinician or technical support center. If requested by Mobius Mobility LLC, Original Purchaser shall return the packaging to Mobius Mobility LLC. The Original Purchaser retains title and has risk of loss or damage while the Product is in transit, so Mobius Mobility LLC recommends that the

Original Purchaser maintain adequate insurance coverage.

If Mobius Mobility LLC, in its reasonable discretion, determines that a Product is covered by this Limited Warranty, then Mobius Mobility LLC will, at Mobius Mobility LLCs' option, repair or replace the Product. Any repaired or replacement Product may, in Mobius Mobility LLCs' discretion, contain refurbished parts. Mobius Mobility LLCs' repair or replacement of a Product is the Original Purchaser's sole and exclusive remedy under this Limited Warranty. Title and ownership of any Product which is returned to Mobius Mobility LLC and replaced by Mobius Mobility LLC shall vest in Mobius Mobility LLC.

The Applicable Limited Warranty Period for the repaired or replacement Product is the longer of (i) the remainder of the Applicable Limited Warranty for the Product which received service under this Limited Warranty, or (ii) 30 days following return of the repaired or replacement Product to the Original Purchaser.

TO THE MAXIMUM EXTENT PERMITTED BY LAW, THIS LIMITED WARRANTY IS THE ONLY WARRANTY MADE BY MOBIUS MOBILITY LLC FOR IBOT PRODUCTS. MOBIUS MOBILITY LLC EXPRESSLY DISCLAIMS (OR, IF DISCLAIMER IS NOT ALLOWED, LIMITS IN DURATION TO THE DURATION OF THIS LIMITED WARRANTY) ANY IMPLIED WARRANTY OF MERCHANTABILITY, ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND ALL OTHER IMPLIED WARRANTIES. MOBIUS MOBILITY LLC MAKES NO WARRANTY THAT THE PRODUCT WILL: (A) MEET THE PARTICULAR OR SPECIAL NEEDS OF THE USER; (B) OPERATE IN COMBINATION OR CONJUNCTION WITH ANY NON-MOBIUS MOBILITY LLC APPROVED ACCESSORIES OR OTHER EQUIPMENT OR MATERIALS NOT PROVIDED BY MOBIUS MOBILITY LLC; (C) PROVIDE

UNINTERRUPTED OR ERROR FREE OPERATION; OR (D) THAT ANY DEFECT CAN BE CORRECTED AT ALL OR BE CORRECTED WITHIN ANY PARTICULAR TIME PERIOD. SOME STATES OR PROVINCES DO NOT ALLOW LIMITATIONS ON IMPLIED WARRANTIES AND/OR HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU.

TO THE MAXIMUM EXTENT PERMITTED BY LAW, IN NO EVENT WILL THE TOTAL LIABILITY OF MOBIUS MOBILITY LLC ARISING OUT OF OR IN CONNECTION WITH ANY PRODUCT EXCEED THE LESSER OF THE COST OF REPAIRING OR REPLACING THE PRODUCT OR THE PURCHASE PRICE PAID BY THE ORIGINAL PURCHASER. IN NO EVENT WILL MOBIUS MOBILITY LLC BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL, EXEMPLARY, PUNITIVE OR CONSEQUENTIAL DAMAGES, INCLUDING, WITHOUT LIMITATION, PERSONAL INJURY, LOST PROFITS, DAMAGE TO PROPERTY, LOSS OR DAMAGE TO OTHER ASSETS, WHETHER OR NOT FORESEEABLE, AND WHETHER OR NOT MOBIUS MOBILITY LLC HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES OR LOSSES OR MOBIUS MOBILITY LLC COULD FORESEE SUCH DAMAGES OR LOSSES. SOME STATES OR PROVINCES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

This Limited Warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

New Hampshire, USA law governs this Limited Warranty.

APPENDIX

Technical Specifications 188
Electromagnetic Interference (EMI) Specifications 194

TECHNICAL SPECIFICATIONS

This device complies with part 15 of the FCC Rules. Operation is subject 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.

Pursuant to FCC 15.21 of the FCC rules, changes not expressly approved by Mobius Mobility LLC might cause harmful interference and void the FCC authorization to operate this product.

This product complies with FCC OET Bulletin 65 radiation exposure limits set forth for an uncontrolled environment.

Mobius Mobility LLC's ibot system conforms to the following standards:

- Stair-climbing wheelchair requirements of ISO 7176-28:2012 based on the intended use of the device.

Note: Stability tests have been performed with test dummies and stability performance may vary in real life situations.

Table 1: *Technical Specifications*

Description	Specification
Wheelchair Class	Class B
Occupant Mass Group	Group II

Table 1: *Technical Specifications*

Description	Specification
Type of Stair-Climbing Device	Type C - assistant-operated, manually stabilized stair-climbing chairs; Type G - occupant-operated, manually stabilized stair-climbing chair
Theoretical continuous driving distance range	Standard: 28 km 4-Wheel: 30 km Balance: 35 km
Overall Length with Leg Support	1090 mm
Overall Width	685 mm
Stowage Length x Width x Height	875 x 660 x 700 mm
Total Mass	110 kg
Pivot Width	Standard: 1195 mm 4-Wheel: 1245 mm Balance: 1065 mm
Turning Diameter	Standard: 1715 mm 4-Wheel: 1245 mm Balance: 1270 mm
Ground Clearance	40 mm
Permissible range for stair dimensions (no riser needed)	Rise: Min 127 mm, Max 203 mm Going: Min 254 mm, Max 432 mm

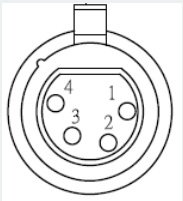
Table 1: *Technical Specifications*

Description	Specification
Maximum permissible slope of upper and lower landings	Level
Maximum speed for ascending and descending stairs	20 steps per minute
Theoretical number of steps up and steps down on one battery charge	200 steps up plus 200 steps down
Required width of angled corridor	860 mm
Required doorway entry depth	1155 mm
Required corridor width for side opening	1155 mm
Maximum speed	Standard: 10.8 km/h 4-Wheel: 8.3 km/h Balance: 5.4 km/h
Effective seat width	Min: 470 mm +/- 25 mm PD 450 mm Max: 521 mm +/- 25 mm PD 450 mm
Minimum stair width for straight stairs	762 mm

Table 1: *Technical Specifications*

Description	Specification
Minimum landing length and width for U-shaped stairs	1321 mm deep x 2032 mm wide
Maximum pitch of the stairs that can be negotiated safely	39°
Battery	Each battery pack has the following specifications: Nominal Voltage: 57.6 V Capacity (C_5): 5 Ah Chemistry: Lithium-Ion
Battery Service Life	One year
Battery Recycle	To recycle, return to Mobius Mobility LLC with supplied packaging from replacement battery or call 800-822-8837 for recycling locations.
Battery Charger type	Off-board. Model number ATS300T-A750
Battery Charger rated input power	Single-phase 100-240 V AC 50 or 60 Hz, 3.9 A
Battery Charger rated output power	75 V DC, 4 A
Types of batteries that can be charged	Li-ion

Table 1: *Technical Specifications*

Description	Specification
Rated capacity of batteries that can be charged	Up to six batteries, 5 Ah each
Battery charger environmental protection rating (IEC 60529)	IPX1
Battery charger connector circuit assignments	

Position	Function
1	+
2	-
3, 4	Inhibit

Table 2: *Bluetooth Radio Specifications*

Parameter	Range/Explanation
Transmit and Receive Frequency Range	2.4 – 2.5 GHz
Effected Radiated Power	< 5 mw
Modulation / Protocol	Bluetooth 4.2 LE
Effective Range (User Controller/ Dongle)	3m or less
Wireless Security	Bluetooth 4.2 LE
Quality of Service Requirements	Any lost connection or failure to connect will have no impact on the day-to-day use of the iBOT. The Bluetooth radio is used by the clinician or service technician when setting up or servicing the device. It is not used other than in a clinical or service setting.

ELECTROMAGNETIC INTERFERENCE (EMI) SPECIFICATIONS

Powered mobility products such as the ibot may be susceptible to electromagnetic interference (EMI). EMI can come from sources such as radio stations, TV stations, amateur radio (HAM) transmitters, two-way radios, and cellular phones.

In some cases EMI can cause unintended movement or damage the device's control system.

The intensity of the EMI can be measured in volts per meter (V/m). Each powered mobility device can resist EMI up to a certain intensity called the *immunity level*; the higher the immunity level, the greater the protection. The immunity level of the ibot is 20 V/m which provides useful protection from the more common sources of EMI.

Follow the warnings about EMI to reduce the chance of unintended movement that could result in serious injury.

Report all incidents of unintended movement to Technical Support and note whether there is an EMI source nearby.

GLOSSARY

4

4-Wheel Mode

4-Wheel Mode is used for driving outdoors across soft or loose terrain such as dirt, grass, and gravel.

A

Assistant

A trained person who helps you with use of the ibot

B

Balance Mode

Balance Mode is used to reach things above you and enjoy conversations with people at eye level.

Battery Charger

A hardware device used to charge the rechargeable batteries.

C

CG Fit

Center of Gravity (CG) Fitting is done to customize the ibot to your specific body size.

D

Drive Screen

The display portion of the user controller that tells you which driving mode you are currently driving in.

F

Forced Power Off (FPO)

FPO is used when there is an issue with the ibot transitioning and immediate power down is necessary.

I

ibot

Commercial name for the device

O

Operating Modes

The Driving Mode is the drive setting that can be chosen for various terrain conditions.

P

Pinch Points

Moving parts of the device that could pinch if not cautious.

R

Remote Mode

Remote Mode is used to move the ibot using the user controller when the ibot is unoccupied.

S

Seat Adjustment

A Menu setting that allows you to change the seat tilt and height.

Service Update

Service Update is used to establish a Bluetooth connection between the iBOT® and the clinician's iBOT® device interface application. It is also used by technicians for service related tasks.

Settings Menu

A Menu that provides access to maintenance and troubleshooting functionality.

Speed Setting

A Menu selection to control the driving speed of the device.

Stair Mode

Stair Mode is used for ascending and descending stairs.

Standard Mode

Standard Mode is used for your routine driving needs for indoor and outdoor conditions with reasonably level surfaces.

T

Transitioning

Transitioning is the action of moving the ibot between operating modes.

U

User Controller

The hardware interface that controls the driving and menu functions.

INDEX

4

4-Wheel Mode 84
- climbing down obstacles 86
- climbing up obstacles 86
- terrain following 85

A

Accessories 33
Action Required Prompt 44
Alerts 42, 127
- about 128

Armrests 36
Assist Handle 32

B

Balance Mode 87
- automatic transition 90
- stability 90

Balance Toe Stuck 91
Battery Charger 33, 46
Battery Charging 138
Battery Charging Fault 46, 169-170
Battery Critically Low 47
Battery Full 46
Battery Low 47
Battery Packs 32
Battery Status 41, 47
Bluetooth 65
Brake Release 121
Brightness 62

C

Cautions 42, 127
about 128
Cleaning 161
display 161
metal and painted parts 161
methods to avoid 162
upholstery 162
Communication Lost 45, 171
Components 29
power base 31
rear view 32
seating system 30
Contraindications 9
Conventions 26

D

Display 14, 41
Display Frozen 172
Driving Mode 43
Driving Modes 49
selecting 50
Driving Modes and Techniques 75
overview 77
Driving Range 120
Driving Technique
4-Wheel mode 85
balance mode 88
stair climbing 100, 102, 109

E

Electromagnetic Interference (EMI) Radio Specifications 194

Environments For Use 78

F

Forced Power OFF (FPO) 45, 66
Freewheel Lever (brake release) 31, 35, 42
Freewheel Mode 121

G

GLOSSARY 195

H

Handling 119
Handrails 94
Hex Wrench 33
Hill Charge 70
Home Screen 41, 43
Horn/Mute Button 71
    flashing 71

I

iBalance Technology 76
iBOT Tipped Over 173
Indications For Use 7
Install Battery Packs 142

J

Joystick 72

L

Legrest Length 144
Legrest wedge 144
Legrests 37
    remove 37

replace 37
Low Battery 131

M

Maintenance 135
cleaning 161
daily inspection 159
frequency 136
inner tube replacement 164
tire care 163
tire pressure 164

N

Notification Banner 41

O

Operation at Low Temperature 171
Overheating 42, 131

P

Power OFF 45, 49
Power Off Request Button 31
Power ON 45, 48
Power On Security 67
Power/Quick Stop Button 47

Q

Quick Stop 48

R

Remote Mode 117
Remove Battery Packs 141
Replacement Parts 182

S

Safety 12
- recommendations for assistants 13
- recommendations for you 12

Seat Adjustments 49, 54, 56
- permissions 55

Seat Component Adjustments 143
Seat Height 54
Seat Tilt 54
Service Code 62
Service Information 61
Service Required 42, 132
Service Update 65
Settings Menu 49, 60
Silence Feature 64
Speed Adjustment Wheel 59
Speed Gauge 43
Speed Settings 49, 58
Stair
- geometry 97
- long treads 99
- low riser 99
- size requirements 98

Stair Assessment 93, 95
Stair Mode 92
- assisted downstairs climbing 114
- assisted stair climbing 109
- solo climbing downstairs 106
- solo climbing upstairs 103
- solo stair climbing 102

Stair Mode Recovery 176
Stairways 101
Standard Mode 84

Standard Mode Recovery 175
Storage 168
Surfaces to Avoid 82
Symbols 10
warnings, cautions, alerts 129

T

Technical Specifications 188
Technical Support 181
Terminology 27
Terrain 79
Total System Shutdown 45
Training 8
Tranfer
in and out of iBOT 122
Transitioning
flow chart 53
Transport 123
lift unoccupied iBOT 126
Troubleshooting 169

U

User Controller 34
connect cable 157
disconnect cable 156
functions 39
reinstall 158
remove 155
remove and reinstall 153
swing in 155
swing out 154

W

Warnings 17, 42, 127
- about 128
- battery charging 24
- component 23
- driving mode 18
- electromagnetic interference 22

Warranty 183

Wheel Clusters 32

ibot Emergency Contact Information

Name

Phone Number

Clinician/Trainer

Assistant

Notes

For further questions and information please call (Customer Service Information goes here)