



**Invacare® Carroll CS Series™**  
CS3, CS5, CS7, CS9, CS9FX600

en **Beds**  
User Manual

This manual MUST be given to the user of the product.  
BEFORE using this product, read this manual and save for future reference.



**Yes, you can.**

Invacare Continuing Care, Inc. A subsidiary of  
Invacare Corporation.

**Invacare Continuing Care, Inc.**      www.invacare-cc.com  
Designed by Invacare Corporation

**USA and Canada:**  
One Invacare Way  
Elyria, Ohio USA  
44036-2125  
Tel: 800-668-2337

**Invacare Australia Pty. Ltd.**  
1 Lenton Place  
North Rocks NSW 2151  
Sydney, Australia  
011-61-1-8839-5333

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*Carla Locke*

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# I General

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## I.1 Symbols

Signal words are used in this manual and apply to hazards or unsafe practices which could result in personal injury or property damage. See the information below for definitions of the signal words.



### **DANGER!**

– Danger indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



### **WARNING!**

– Warning indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.






























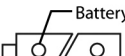
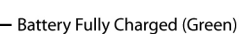

### **CAUTION!**

– Caution indicates a potentially hazardous situation which, if not avoided, may result in property damage or minor injury or both.



Gives useful tips, recommendations and information for efficient, trouble-free use.

# Symbols Used on the CS Bed

	PROTECTIVE CONDUCTOR TERMINAL		Lift with Two Persons (based on ISO 3864)		General warning symbol (ISO 3864)
	EQUIPOTENTIALITY		FUNCTION LOCK-OUT ACTIVATE TOGGLE SWITCH TO DENY FUNCTION ACCESS ON THE HAND PENDANT		Danger: electricity, electrical hazard symbol (IEC 61310, ISO 3864)
	WARNING - SAFE WORKING LOAD		INITIATE ACTION TO THE ENTIRE MATTRESS SUPPORT PLATFORM (HILO)		Explosive material, explosion hazard symbol (IEC 61310)
	THE MAXIMUM ALLOWABLE LOAD ON EQUIPMENT IF THE INSTRUCTIONS FOR INSTALLATION AND USE ARE FOLLOWED		INITIATE ACTION TO HEAD SECTION OF MATTRESS SUPPORT PLATFORM		Flammable material symbol (IEC 61310)
	ALTERNATING CURRENT		TOGGLE SWITCH FOR ONE-TOUCH HEAD AND KNEE-FOOT RAISE OPERATION		Crush hazard symbol (based on ANSI Z535)
	ON - SUPPLY		INITIATE ACTION TO THE KNEE-FOOT SECTION OF THE MATTRESS SUPPORT PLATFORM		Crush hazard symbol (based on ANSI Z535)
	OFF - SUPPLY		UP CONTROL - RAISE THE CORRESPONDING SECTION OF THE MATTRESS SUPPORT PLATFORM		Crush hazard symbol (based on ANSI Z535)
<b>IPX4</b>	INTERNATIONAL PROTECTION CODE (04 - PROTECTION AGAINST WATER SPRAY FROM ANY DIRECTION)		DOWN CONTROL - LOWER THE CORRESPONDING SECTION OF THE MATTRESS SUPPORT PLATFORM		Drop / Fall Hazard symbol (based on IEC 61310)
	APPLIED PART TYPE B EQUIPMENT		Trendelenburg Function		
<b>CLASS I</b>	EQUIPMENT CLASSIFICATION IN TERMS OF PROTECTION AGAINST ELECTRICAL SHOCK		Reverse Trendelenburg Function		
	Intertek's ETL Listed Mark for US and Canada. A product bearing the ETL Listed Mark is determined to have met the minimum requirements of prescribed product safety standards.				
	Battery Charging (Yellow)				
	Battery Fully Charged (Green)				
					

Recycle this product. Refer to 2.4 Disposal, page 17.

## 2 Safety

### 2.1 General Guidelines



#### **DANGER!**

#### **Risk Of Death, Injury, Or Damage**

Improper use of this product may cause injury or damage.

- If you are unable to understand the warnings, cautions or instructions, contact a healthcare professional, dealer or technical personnel before attempting to use this equipment
- Do not use this product or any available optional equipment without first completely reading and understanding these instructions and any additional instructional material such as user manuals, service manuals or instruction sheets supplied with this product or optional equipment.

Continued use of the bed with damaged parts could lead to the bed malfunctioning, causing injury to the user and/or caregiver.

- Check ALL bed components and carton for damage, and test components before use. In case of damage or if the bed is not working properly, contact a technician or Invacare for repair.

To avoid injury or product damage:

- Set-up and Assembly instructions MUST be performed by technicians only. “Technician Only” sections are marked accordingly.



#### **DANGER!**

#### **Risk Of Death, Injury Or Damage**

Bed accessories designed by other manufacturers have NOT been tested by Invacare. Use of NON-Invacare bed accessories may result in injury or death.

- Use ONLY Invacare rails, mattresses, bed extenders and other accessories with Invacare bed products.



THE INFORMATION CONTAINED IN THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE.



#### **DANGER!**

#### **Risk Of Death, Injury, Or Damage**

Patient entrapment from the use of bed side rails may cause injury or death. To avoid patient entrapment:

- The Invacare mattress MUST fit firmly against the bed frame AND bed side rails to prevent patient entrapment. Follow the manufacturer’s instructions. Monitor patient frequently. Read and understand the User Manual prior to using the Invacare bed and bed rails. User manuals are available at [www.invacare.com](http://www.invacare.com) or your dealer.
- After any adjustments, repair or service and before use, make sure all attaching hardware is tightened securely.

**DANGER!**  
**Risk Of Death, Injury Or Adverse Health Consequences**

Fall hazard exists due to incorrect installation of bed rails

- To avoid injury, ensure that the Invacare bed rails are installed correctly and securely attached to the bed while entering or exiting.

Fall hazard exists due to use of NON-Invacare bed rails. Non-Invacare bed rails are potentially incompatible with Invacare beds.

- To avoid injury, ensure that only Invacare bed rails are used with Invacare beds at all times.

Fall hazard exists due to use of NON-Invacare mattresses. Non-Invacare mattresses are potentially incompatible with Invacare beds.

- To avoid injury, ensure that only Invacare mattresses are used with Invacare beds at all times.

**DANGER!**  
**Risk Of Death, Injury, Or Damage**

Conditions such as restlessness, mental deterioration and dementia or seizure disorders (uncontrolled body movement), sleeping problems, and incontinence can significantly impact a patient's risk of entrapment. Pediatric patients or patients with small body size may also have an increased risk of entrapment.

- Monitor patients with these conditions frequently.
- Place the mattress deck in the flat position when left unattended.

**DANGER!**  
**Risk Of Death, Injury, Or Damage**

To reduce the risk of electrical shock:

- Unplug from the outlet before servicing.
- Use this bed only for its intended use as described in these instructions. **DO NOT** use attachments not recommended by the manufacturer.
- If a liquid is spilled in or around the electric bed, unplug the electric bed before cleaning. Clean up the spill and allow the electric bed or the area around the electric bed to dry thoroughly before using the electric controls again.

**WARNING!**  
**Risk Of Injury Or Damage**

To avoid injury or damage when operating bed:

- After any adjustments, repair or service and before use, make sure all attaching hardware is tightened securely.
- Close supervision is necessary when the manual/electric bed is used near children or pets **OR** when this product is operated by or near people with physical/mental disabilities. Physically challenged individuals who cannot prevent themselves from rolling/climbing out of the electric bed may require alternative safe means of restraint.
- The CS Bed is not designed to be used as a patient transport. When transporting a patient, use an approved patient transport. Otherwise, injury or damage may result.





**WARNING!**

**Risk Of Injury Or Damage**

To avoid injury or damage when operating/moving bed:

- ALWAYS ensure that the individual utilizing the bed is positioned properly within the confines of the bed. DO NOT let any extremities protrude over the side or between the bed rails when performing these functions.
- Make sure head and foot springs/sections are connected securely to the bed ends before use.
- The CS bed is equipped with locking casters. Before using the bed, test the wheellocks to ensure casters lock correctly. When transferring into or out of the CS bed, ALWAYS lock the casters. Even with casters properly locked, some flooring surfaces (such as tile or wood,) will allow the bed to move under some conditions. Using the bed on these types of surfaces MUST be evaluated by the care provider. DO NOT transfer occupant if bed is not stable. Otherwise, injury and/or damage may occur.



**DANGER!**

**Risk Of Death, Injury, Or Damage**

To avoid serious injury or product damage due to tripping hazards, strangulation hazards, and/or entangled, pinched, or severed cords:

- Ensure that all cord(s) are routed and secured properly.
- Keep all moving parts, including the main frame, mattress deck, and all drive shafts, free of obstruction (i.e. blankets/sheets, tubing, wiring, cords, etc.) during operation of the bed. Otherwise, entanglement with bed components or bed collapse may cause damage and/or injury.
- Do not roll the bed over the power cord or pendant cord.
- Use the Power Cord Strap when moving the bed. Refer to 5.2 Pendant Storage and Location, page 38 and 5.3 Power Cord Storage, page 41.



**WARNING!**

**Risk Of Injury Or Damage**

To avoid electrical damage, product damage, shock and/or personal injury:

- DO NOT unplug power cord from junction box.
- When bed is not to be used for an extended period, unplug electric bed from the wall outlet.
- Keep all bed components and accessories a minimum of 12 inches away from hot or heated surfaces.

**DANGER!****Risk Of Death, Injury, Or Damage**

To avoid bed collapse and resulting injury or damage:

- The weight limit of the occupant of the CS Bed CANNOT exceed 600 lbs (272 kg) for model CS9FX600, 500 lbs. (228 kg) for models CS5, CS7, and CS9 and 450 lbs. (204 kg) for model CS3. The TOTAL weight limit of the CS Bed (including accessories, mattress, occupant and any other objects positioned on the bed) cannot exceed rated capacity or Safe Working Load.
- NEVER permit more than one person on the manual/electric bed at any time.
- Evenly distribute body weight over the surface of the manual/electric bed.
- DO NOT lay, sit or lean in such a way that your entire body weight is placed only on raised head or foot sections of the bed. This includes when repositioning or transferring in or out of bed.
- Each of the preceding impacts can permanently damage either HI/LO motor resulting in an inoperable bed. In the case of an inoperable bed due to a damaged HI/LO motor, the HI/LO motor must be replaced immediately. If left unattended, a damaged HI/LO motor can cause the bed to fall from the highest extended position, resulting in patient injury. DO NOT exceed the maximum continuous duty cycle. Refer to 3.1 Typical Product Parameters, page 20.
- NEVER allow patients to use trapeze or traction units as a total individual weight support. Trapeze units are to be used only for immobilizing a patient in various traction set-ups or assisting the patient in repositioning or transferring into or out of bed.



Refer to the **Bed Rail Entrapment Risk Notification Guide** at [www.invacare.com](http://www.invacare.com) for additional safety information.

**WARNING!****Risk Of Product Damage**

To avoid product damage:

- DO NOT open assemblies such as the motors, pendant, junction boxes or gear boxes. No user serviceable parts are inside. Contact dealer or Invacare for repair/replacement.
- Unplug the power cord from its power source before performing any maintenance on the electric bed. DO NOT unplug the power cord from the junction box. Damage to cord will result.
- The control box is mounted to the head motor with a cable tie. If replacing the control box, remove the cable tie and slide the control box away from the head motor until it is free. Disconnect all cable connections.

**CAUTION!****Risk Of Product Damage**

Mis-alignment of cable connections will cause permanent product damage.

- To avoid product damage, all cable connections MUST be aligned properly. Align locking levers with locking tabs for proper connection.
- DO NOT force the connector into the control box.



**DANGER!**

**Risk Of Death, Injury, Or Damage**

To avoid fire hazards and tubing entanglement:

- Use masked or nasal type oxygen administering equipment only in conjunction with the manual/electric bed. The use of any other type of oxygen administering equipment can result in a fire hazard.
- When using nasal or masked type oxygen administering equipment, the oxygen or air tubing **MUST** be routed and secured properly to ensure that the tubing does not become entangled and/or severed during normal operation of manual/electric bed.
- Do not use this bed in Active Treatment “Ether Environments.”



**DANGER!**

**Risk Of Death, Injury, Or Damage**

Shock hazards and risk of fire exist due to use of improper extension cord and use of three prong adapters.

- To avoid injury or product damage, when using an extension cord, use only a three wire extension cord having at least 16 AWG (American Wire Gauge) wire and the same or higher electrical rating as the device being connected.
- **DO NOT** use three prong to two prong adapters



**DANGER!**

**Risk Of Shock Injury**

To avoid shock hazard, electric beds are equipped with three prong (grounding) plugs. Where a two prong wall receptacle is encountered:

- Contact a qualified electrician and have the two prong receptacle replaced with a properly grounded three prong wall receptacle in accordance with the National Electrical Code.
- If you must use an extension cord, use only a three wire extension cord having the same or higher electrical rating as the device being connected. **DO NOT**, under any circumstances, cut or remove the round grounding prong from any plug used with or for Invacare products. In addition, Invacare has placed **RED** warning tags on some equipment. **DO NOT** remove these tags.
- Securely connect the junction box to the bed with metal screws and the spacer provided for proper grounding.



**WARNING!**

**Risk Of Injury Or Damage**

The electronic motors, power supply and pendants are protected against the entrance of dust and water when properly attached.

- **DO NOT** spray water into any power supply connection ports.
- Before disassembling or washing an electric bed, disconnect the power supply from the electrical outlet and de-energize electrical components.

**DANGER!****Risk of Death, Injury, or Damage**

In the event of a power outage, the bed can be powered by its internal battery. (The internal battery is optional for CS7 and CS9FX600 models and standard on the CS9FX600 with Trendelenburg.) To avoid injury, damage, or death from electrocution:

- The Bed must remain plugged into the grounded outlet for proper grounding.

**WARNING!****Risk Of Injury Or Damage**

A safety feature of this product includes protection against overheating caused by excessive or extended periods of operation. Depending on the duration, this includes multiple or repeated adjustments or the use of multiple functions at one time. To ensure trouble free operation:

- ALWAYS allow a slight pause between multiple adjustments and avoid pressing more than one function button at a time. If thermal protection activation should occur, the bed will not respond to pendant commands. Given this situation, release the pendant button and allow the bed unit to sit for several minutes. This will allow the protection function time to reset and restore bed function. Depending on severity of the initial overheating, this could take up to 30 minutes.

**WARNING!****Risk of Injury or Damage**

To avoid injury or damage from malfunctioning controller or electrocution:

- Charge battery through the controller. NEVER attempt to charge the battery by any other means.
- Internal battery, if present, should be tested monthly.

**WARNING!****Risk Of Injury Or Damage**

To avoid electrical damage, product damage, shock and/or personal injury:

- When bed is not to be used for an extended period, unplug electric bed from the wall outlet.
- Keep all bed components and accessories a minimum of 12 inches away from hot or heated surfaces.

**WARNING!****Risk Of Injury Or Adverse Health Consequences**

Fall hazard exists due to bed height.

- Always leave bed in lowest height when unattended.



**DANGER!**

**Risk Of Death, Injury, Or Damage**

To avoid pinching, crush and collapse hazards from bed deck contact with objects under the bed:

- DO NOT place any objects or let any individual underneath the bed or in between the raised bed frame components at any time.

To avoid choking from small detachable parts contained underneath the bed:

- Closely supervise children, pets, or people with physical/mental disabilities.



**DANGER!**

**Risk of Death, Injury, or Damage**

Mattress keepers are a set of four brackets that attach to the bed deck to hold the mattress in place. They are especially useful when rails are not used on a bed. To avoid injury or damage from fall or entrapment:

- Invacare recommends the use of mattress keepers.

## 2.2 EMI Information



**CAUTION!**

**Risk of Damage**

To avoid product damage from electromagnetic interference:


- It is very important that you read this information regarding the possible effects of electromagnetic interference on this product.

This product may be susceptible to electromagnetic interference (EMI), which is interfering electromagnetic energy (EM) emitted from sources such as radio stations, TV stations, amateur radio (HAM) transmitters, two way radios, and cellular phones. The interference (from radio wave sources) can cause the powered bed to release its brakes, move by itself, or move in unintended directions. It can also permanently damage the powered bed's control system. The intensity of the interfering EM energy can be measured in volts per meter (V/m). Each powered bed can resist EMI up to a certain intensity. This is called its "immunity level." The higher the immunity level, the greater the protection. At this time, current technology is capable of achieving at least a 20 V/m immunity level, which would provide useful protection from the more common sources of radiated EMI.


There are a number of sources of relatively intense electromagnetic fields in the everyday environment. Some of these sources are obvious and easy to avoid. Others are not apparent and exposure is unavoidable. However, we believe that by following the warnings listed below, your risk to EMI will be minimized.

The sources of radiated EMI can be broadly classified into three types:

- Handheld Portable transceivers (transmitters/receivers with the antenna mounted directly on the transmitting unit. Examples include: citizens band (CB) radios, “walkie talkie”, security, fire and police transceivers, cellular telephones, and other personal communication devices).

 Some cellular telephones and similar devices transmit signals while they are ON, even when not being used.

- Medium range mobile transceivers, such as those used in police cars, fire trucks, ambulances and taxis. These usually have the antenna mounted on the outside of the vehicle; and
- Long range transmitters and transceivers, such as commercial broadcast transmitters (radio and TV broadcast antenna towers) and amateur (HAM) radios.

 Other types of handheld devices, such as cordless phones, laptop computers, AM/FM radios, TV sets, CD players, cassette players, and small appliances, such as electric shavers and hair dryers, so far as we know, are not likely to cause EMI problems to this product.

## 2.3 Electromagnetic Compatibility Information



Medical Electrical Equipment needs special precautions regarding EMC and needs to be installed and put into service according to the EMC information provided in this manual.

Portable and mobile RF communications equipment can affect medical electrical equipment.



### WARNING!

#### Risk of Injury or Damage

The use of accessories, transducers, and cables other than those specified by the manufacturer, may result in increased emissions or decreased immunity of this bed.

- Do not use this bed adjacent to or stacked with other equipment.
- If adjacent or stacked use is necessary, observe this bed to verify normal operation in the configuration in which it will be used.

### Guidance and Manufacturer’s Declaration - Electromagnetic Emissions

Emissions Test	Compliance	Electromagnetic Environment - Guidance
The CS Bed is intended for use in the electromagnetic environment specified below. The customer or the user of the CS Bed should assure that it is used in such an environment.		
RF emissions CISPR 11	Group I	The CS Bed uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.

<b>Guidance and Manufacturer's Declaration - Electromagnetic Emissions</b>		
<b>Emissions Test</b>	<b>Compliance</b>	<b>Electromagnetic Environment - Guidance</b>
RF emissions CISPR 11	Class B	The CS Bed is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations / flicker emissions IEC 61000-3-3	Complies	

<b>Guidance and Manufacturer's Declaration - Electromagnetic Immunity</b>			
The CS Bed is intended for use in the electromagnetic environment specified below. The customer or the user of the CS Bed should assure that it is used in such an environment.			
<b>Immunity Test</b>	<b>IEC 60601 Test Level</b>	<b>Compliance Level</b>	<b>Electromagnetic Environment - Guidance</b>
Electrostatic discharge (ESD) IEC 61000-4-2	±6 kV contact ±8 kV air	±6 kV contact ±8 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %.
Electrical fast transient/burst IEC 61000-4-4	±2 kV for power supply lines ±1 kV for input/output lines	±2 kV for power supply lines ±1 kV for input/output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1 kV differential mode ±2 kV common mode	±1 kV differential mode ±2 kV common mode	Mains power quality should be that of a typical commercial or hospital environment.

### Guidance and Manufacturer's Declaration - Electromagnetic Immunity


Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	<p>&lt;5 % UT (&gt;95 % dip in UT) for 0,5 cycle</p> <p>40 % UT (60 % dip in UT) for 5 cycles</p> <p>70 % UT (30 % dip in UT) for 25 cycles</p> <p>&lt;5 % UT (&gt;95 % dip in UT) for 5 sec</p>	<p>&lt;5 % UT (&gt;95 % dip in UT) for 0,5 cycle</p> <p>40 % UT (60 % dip in UT) for 5 cycles</p> <p>70 % UT (30 % dip in UT) for 25 cycles</p> <p>&lt;5 % UT (&gt;95 % dip in UT) for 5 sec</p>	Mains power quality should be that of a typical commercial or hospital environment. If the user of the CS Bed requires continued operation during power mains interruptions, it is recommended that the CS Bed be powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A / m	3 A / m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
NOTE UT is the a.c. mains voltage prior to application of the test level.			


### Guidance and Manufacturer's Declaration - Electromagnetic Immunity

The CS Bed is intended for use in the electromagnetic environment specified below. The customer or the user of the CS Bed should assure that it is used in such an environment.

Immunity Test	IEC 60601 Test Level	Compliance Level	Electromagnetic Environment - Guidance
---------------	----------------------	------------------	--



<p>Conducted RF IEC 61000-4-6</p>	<p>3 Vrms 150 kHz to 80 MHz</p>	<p>3 Vrms</p>	<p>Portable and mobile RF communications equipment should be used no closer to any part of the CS Bed, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.</p> <p>Recommended separation distance <math>d=1.2\sqrt{P}</math></p>
<p>Radiated RF IEC 61000-4-3</p>	<p>3 V/m 80 MHz to 2,5 GHz</p>	<p>3 V/m</p>	<p><math>d=1.2\sqrt{P}</math> 80 MHz to 800 MHz <math>d=2.3\sqrt{P}</math> 800 MHz to 2,5 GHz</p> <p>where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m).</p> <p>Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, <sup>a</sup> should be less than the compliance level in each frequency range. <sup>b</sup></p> <p>Interference may occur in the vicinity of equipment marked with the</p> <div style="text-align: center;">  </div> <p>following symbol:_____</p>

 At 80 MHz and 800 MHz, the higher frequency range applies. These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

a. Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the

location in which the CS Bed is used exceeds the applicable RF compliance level above, the CS Bed should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the CS Bed.

b. Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

### Recommended separation distances between portable and mobile RF communications equipment and the CS Bed

The CS Bed is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the CS Bed can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the CS Bed as recommended below, according to the maximum output power of the communications equipment.

Rated maximum output power of transmitter W	Separation distance according to frequency of transmitter m		
	150 kHz to 80 MHz $d=1.2\sqrt{P}$	80 MHz to 800 MHz $d=1.2\sqrt{P}$	800 MHz to 2,5 GHz $d=2.3\sqrt{P}$
0.01	.12	.12	.23
0.1	.38	.38	.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

For transmitters rated at a maximum output power not listed above, the recommended separation distance  $d$  in metres (m) can be estimated using the equation applicable to the frequency of the transmitter, where  $P$  is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.



At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

This product may contain substances that could be harmful to the environment if disposed of in places (landfills) that are not appropriate according to legislation.

Please be environmentally responsible and recycle this product through your recycling facility at its end of life.

## 2.4 Disposal

This product has been supplied from an environmentally aware manufacturer that complies with the Waste Electrical and Electronic Equipment (WEEE) Directive 2012/19/EC.

1153410-N-00


## 2.5 Product Labeling

<p><b>AVERTISSEMENT</b></p> <p>Un patient peut être blessé ou même mourir s'il est coincé. Les huit sections de plateformes ajustables DOIVENT être de même largeur: 30", 37 1/2" ou 40 1/2" cm. Pour l'utilisation d'une tête de lit avec le modèle CS9FX600, vous devez utiliser la tête de lit réglable de modèle IBEADJ. La tête de lit doit être de même largeur que le lit. Suivez les instructions du fabricant pour le réglage du lit et de la tête de lit. Le matelas doit s'adapter à l'encadrement et aux longs pans et s'adapter correctement aux dispositifs pour éviter le coincement du patient. Il est important de lire et de comprendre le manuel de l'utilisateur avant d'utiliser cet équipement. Vous trouverez les manuels ICGI sur le site <a href="http://www.invacare-cs.com">www.invacare-cs.com</a> ou chez votre détaillant.</p>	<p><b>WARNING</b></p> <p>Patient entrapment may cause injury or death. All eight adjustable deck sections MUST be set to the same width: 36 in, 39 in or 42 in. If using a head board with the CS9FX600 model bed, an adjustable head board, model IBEADJ, must be used. Headboard must be set for the same width as the bed. Follow the manufacturer's instructions for adjusting bed and head board. The Invacare mattress must fit firmly against the bed frame and side rails and assist devices to prevent patient entrapment. Read and understand the User Manual prior to using this equipment. ICGI manuals are available at <a href="http://www.invacare-cs.com">www.invacare-cs.com</a> or your dealer.</p> <p style="text-align: right; font-size: small;">Part No. 115533 Rev. C</p>
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**On Both Sides of Bed of CS9FX600**

### Around Optional CPR Release Bar

Model No. 115547

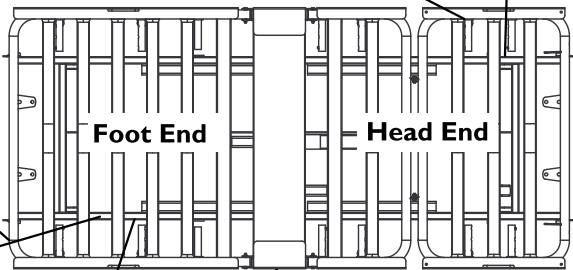


Use with caution.  
CPR Release will lower the head section rapidly.



**AVERTISSEMENT**

Le dégageant de CPR abaissera la section de la tête rapidement. Utilisation avec prudence.




<p><b>AVERTISSEMENT</b></p> <p>L'activation du dégageant de CPR peut causer des dommages au patient ou à l'aide. Utilisation avec prudence. Employer le dégageant de CPR pour des urgences seulement. Cette fonction apportera rapidement le dossier à une position plate. L'opération pour deux personnes est recommandée. Une personne pour libérer le dossier, et des autres à la prise et pour guider doucement le dossier vers le bas. Le risque de pincement existe en guidant le dossier pendant le dégageant de CPR. Ne pas placer des mains directement entre le dossier réglable et la charpente de lit. Placez les mains seulement sous l'extrémité du dossier, loin de la charpente de lit.</p>	<p><b>WARNING</b></p> <p>Activation of CPR release may cause attendant or resident injury. Use with caution. Use the CPR release only for emergency situations. This function will rapidly bring the backrest to a flat position. Two person operation is recommended. One person to release the backrest and another to hold and gently guide the backrest down. Pinch point hazard exists when guiding the backrest during CPR release. Avoid placing hands directly between the adjustable backrest and the bed frame. Place hands only on the outside of the backrest, away from the bed frame.</p> <p style="text-align: right; font-size: x-small;">115532 Rev. C</p>
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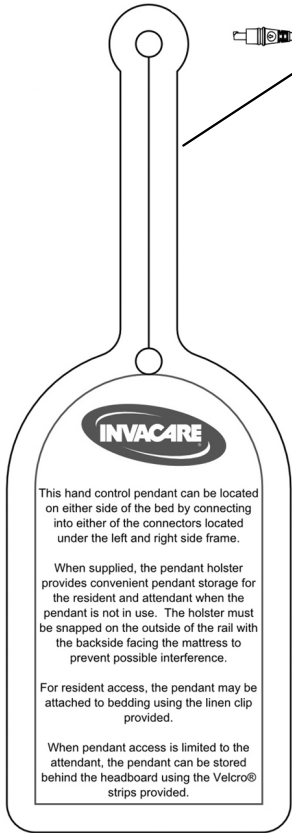
**For Optional CPR Release (On Both Sides of Bed)**

### Serial Number Label

**ETL Label - 120 V (CS3, CS5, CS7, CS9, CS9FX600)**  
**ETL Label - (CS5, CS7, CS9)**

<p><b>AVERTISSEMENT</b></p> <p>Risque d'écrasement occasionné par la ZONE DE MARGE FAIBLE DU LIT. Éloignez-vous de l'encadrement et assurez-vous qu'aucun enfant ou animal ne se trouve sous ou près de l'encadrement du lit avant de l'abaisser. Faites attention aux POINTS DE PINCEMENT situés sous les panneaux, près des fixations d'accessoires et entre les grilles mobiles.</p>	<p><b>WARNING</b></p> <p>Crush Hazard due to LOW BED CLEARANCE. Stay clear of frame and ensure children and pets are not under or near the frame before lowering the bed. Beware of PINCH POINTS below deck panels, next to fixed attachments and between moving parts.</p> <p style="text-align: right; font-size: x-small;">115532 Rev. A</p>
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 All labels applied to bed frame except where noted.

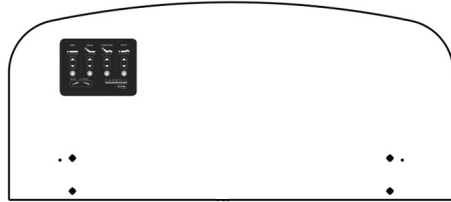


This hand control pendant can be located on either side of the bed by connecting into either of the connectors located under the left and right side frame.

When supplied, the pendant holster provides convenient pendant storage for the resident and attendant when the pendant is not in use. The holster must be snapped on the outside of the rail with the backside facing the mattress to prevent possible interference.

For resident access, the pendant may be attached to bedding using the linen clip provided.

When pendant access is limited to the attendant, the pendant can be stored behind the headboard using the Velcro® strips provided.



1183513-A

**CAUTION**

RISK OF MINOR INJURY OR DAMAGE  
TO AVOID TRIPPING HAZARD OR PINCHED OR SEVERED CORDS:  
KEEP SWITCH CORD CLEAR OF MOVING PARTS.  
PLACE IN HOLDER WHEN NOT IN USE.

1183513-A

### Optional Foot End Board ACP with Trendelenburg

**AVERTISSEMENT**  
Risque d'écrasement lors de l'utilisation de Trendelenberg Inversée. Un point de pincement existe entre le pied de lit et la terre à la position plus basse. L'abaissement du pied de lit peut causer des blessures à soi-même ou à autrui. Ne PAS placer les pieds, jambes ou bras dans la zone d'écrasement située sous le pied de lit. Se reporter au Manuel d'utilisation avant d'utiliser le lit.



**WARNING**  
Crush hazard when using Reverse Trendelenburg. Pinch point exists between the footboard and the floor at the lowest bed position. Lowering the foot may cause INJURY to oneself or others. DO NOT place feet or limbs in the crush zone located beneath the rail. Refer to the product manual prior to operating the bed.

PIN 1183592 Rev B

## 3 Technical data

### 3.1 Typical Product Parameters

#### Certifications

All models (120 V~ models - CS3, CS5, CS7, CS9, CS9FX600 and 230 V~ models - CS5, CS7, CS9) conform to UL60601-1 and IEC60601-1. Certified to IEC60601-2-38 and IEC60601-1-2 and CAN/CSA C22.2 No. 601.1. 230 V~ models - CS5 and CS7 are CE marked for Australia and New Zealand.

#### Elevation Range (floor to deck)

	CS3	CS5	CS7	CS9	CS9FX600
Stability Range (casters locked or off casters)	8¼ to 26½ in (210 to 673 mm)	9 to 30 in (229 to 762 mm)	7 to 30 in (178 to 762 mm)	9 to 30 in (229 to 762 mm)	
Mobility range (on casters)	8¼ in (210 mm) only				
Angle between back section (head deck) and deck platform	0° to 70°				
Angle between back section and upper leg section	>90°				
Trendelenburg or reverse trendelenburg (when configured)	not available		0° to 14° (Optional)		
Under-bed clearance for 2/3 of bed - centered	14 in (356 mm)				

## Electrical Specifications

	<b>CS3</b>	<b>CS5</b>	<b>CS7</b>	<b>CS9</b>	<b>CS9FX600</b>
Control box mains voltage	120V~	120V~ or 230V~	120V~ or 230V~	120V~ or 230V~	120V~
Control box input current	3.5A max	3.5A max (1.5A max for 200V~ models)	3.5A max (1.5A max for 230V~ models)	3.5A max (1.5A max for 230V~ models)	3.5A max
Control box current frequency	60 Hz	60 Hz (50 Hz for 230 V models)	60 Hz (50 Hz for 230 V models)	60 Hz (50 Hz for 230 V models)	60 Hz
Control box output voltage	24 VDC (70W max)				
Control box duty cycle	10% Max (2 min ON 18 min OFF)				
Motorized linear head actuator	24 Volts DC				
Motorized linear actuators (head, foot, and HI/LO)	24 Volts DC				
Six button hand pendant	standard		not available		
Eight button hand pendant with contour function	not available		standard (10 button optional)		
Attendant control panel (ACP)	optional				
Trendelenburg ACP	not available		optional		

### Safety Features

	CS3	CS5	CS7	CS9	CS9FX600
Protective earth ground	Class I				
Electric shock protection	Type B				
Enclosure protection	IPX4				
Floor lock	not available	Optional	standard		
CPR release on head actuator	not available		optional		
Built-in battery back-up	not available		optional (standard with Trendelenburg 24V DC 9.2 Amps)		

### Security - Pendant Lock-Out

	CS3	CS5	CS7	CS9	CS9FX600
Pendant connection from either side of bed	standard				
ACL (attendant control lock-out) pendant HI/LO function lock-out	optional				
Individual pendant function lock-out on ACP	optional				

## Dimensions and Weight

	CS3	CS5	CS7	CS9	CS9FX600
Length (overall) 76 in and 80 in CS Beds 80 in CS Bed with 4 in Extension			84¼ in (2140 mm)		
Length between head and foot ends 76 in CS Bed 80 in CS Bed 80 in CS Bed with 4 in Extension			78½ in (1994 mm)		
Length, mattress platform 76 in CS Bed 80 in CS Bed 80 in CS Bed with 4 in Extension			76 in (1930 mm)		
Width, mattress platform 36 in Standard Deck 39 in Wide Deck 42 in Wide Deck			35½ in (901 mm)		



	<b>CS3</b>	<b>CS5</b>	<b>CS7</b>	<b>CS9</b>	<b>CS9FX600</b>
Width with assist rails - 36 in standard deck	39¼ in (997 mm)				
Width with Thinksoft® positioning devices					
36 in Standard	41¼ in (1048 mm)				
39 in Wide	44¼ in (1124 mm)				
42 in Wide	47¼ in (1200 mm)				
Weight					
36 in Standard Deck	186 lb (84 kg)		190 lb (86 kg)		not available
39 in Wide Deck	196 lb (89 kg)		200 lb (91 kg)		not available
42 in Wide Deck	199 lb (90 kg)		203 lb (92 kg)		not available
CS9FX600 Adjustable Deck	N/A				206 lb
Load capacity - safe working load	450 lb (204 kg)	500 lb (227 kg)			600 lb (272 kg)
4 in bed length extension	optional		optional		
39 in or 42 wide bed deck	optional Not compatible with 68 inch rail.				not available
Adjustable Deck	Not Available				Standard Not compatible with 68 inch rail

### 3.2 Mattress Specifications



**DANGER!**

**Risk Of Death, Injury Or Damage**

Bed accessories designed by other manufacturers have NOT been tested by Invacare. Use of NON-Invacare bed accessories may result in injury or death.

- Use ONLY Invacare rails, mattresses, bed extenders and other accessories with Invacare bed products.



**WARNING!**

**Risk Of Injury Or Adverse Health Consequences**

Fall hazard exists due to use of NON-Invacare mattresses. Non-Invacare mattresses are potentially incompatible with Invacare beds.

- To avoid injury, ensure that only Invacare mattresses are used with Invacare beds at all times.



Refer to the **Bed Rail Entrapment Risk Notification Guide** at [www.invacare.com](http://www.invacare.com) for additional safety information.

A mattress may not be included with this bed. It is highly recommended that you use an Invacare branded mattress that is designed to conform to the following dimensions:

	<b>Named Size</b>	<b>Minimum Size</b>	<b>Maximum Size</b>
Length	76 in (1930.4 mm)	75 in (1905 mm)	76 in (1930.4 mm)
	80 in (2032 mm)	79 in (2006.6 mm)	80 in (2032 mm)
	84 in (2133.6 mm)	83 in (2108.6 mm)	84 in (2133.6 mm)
Width	36 in (914 mm)	35.5 in (911 mm)	36.5 in (927 mm)
	39 in (991 mm)	38.5 in (978 mm)	39.5 in (1004 mm)
	42 in (1067 mm)	41.5 in (1054 mm)	42.5 in (1080 mm)
Thickness	6 in (152 mm)	5.88 in (149 mm)	6.12 in (155 mm)

### 3.3 Environmental Conditions for Storage and Transport

- Store and/or transport the bed in a clean and dry environment with an ambient temperature range between –10° and 50° Celsius (14° to 125° F).

### 3.4 Environmental Conditions for Operation

- Bring the bed to a Safe Operating Temperature between 5° and 40° Celsius (41° and 100° F) before operating the bed.

## 4 Setup

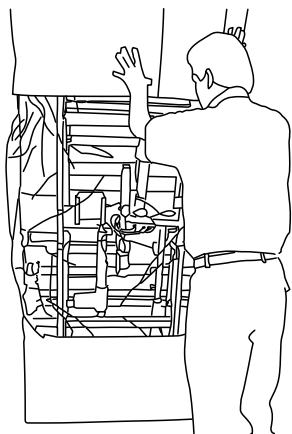
### 4.1 Unpacking Instructions



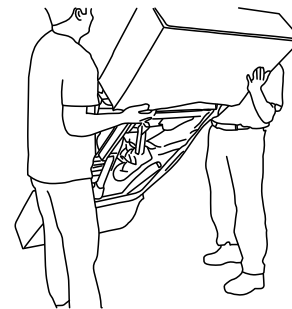
**CAUTION!**  
**Risk of Damage**

To avoid product damage from misuse:

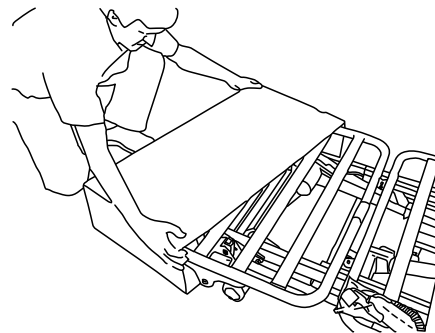
- DO NOT cut any trimmed plastic wire ties.
- Cut only the untrimmed plastic ties around the wood spacer. All other plastic ties are used to secure the electric cables in place and should not be cut.



1. Stand bed upright.



2. Slowly lower to floor — use two people if necessary.



3. Slide off end boxes and remove plastic sleeve.



4. Remove the locking key latch from both sides of the wood spacer at the foot end of the bed.

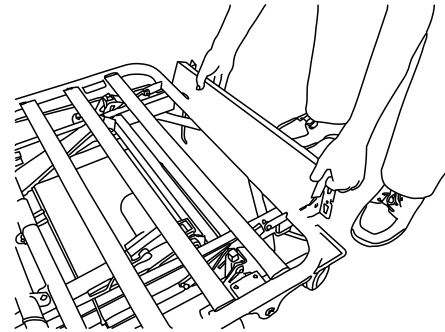


**WARNING!**

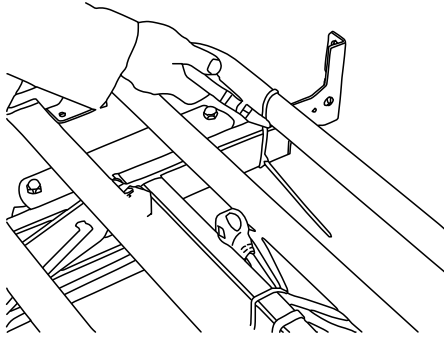
**Risk of Injury or Damage**

Bed damage or personal injury may occur if bed is dropped. To avoid:

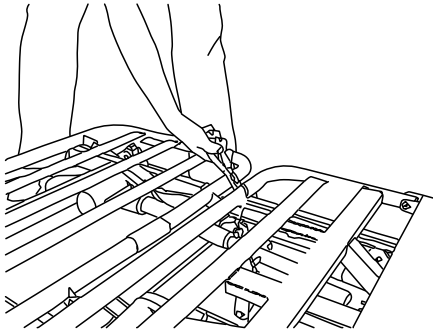
- Slowly lower the bed to the floor.
- Use additional people if necessary.



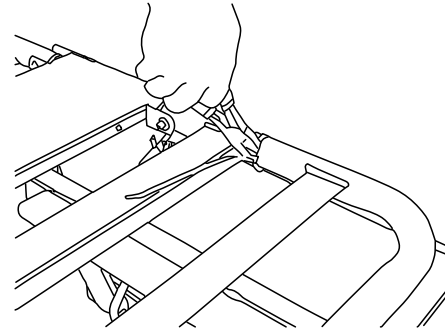
5. Remove wood spacer from front end of bed by lifting it off of bed end brackets.



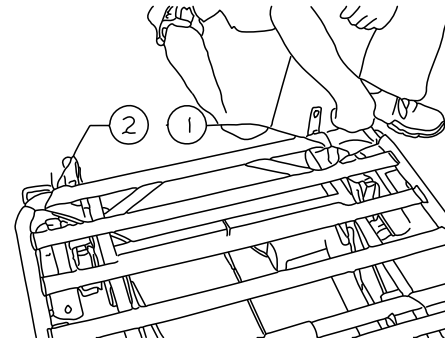
6. Cut the untrimmed or green tie holding the head deck to the frame.



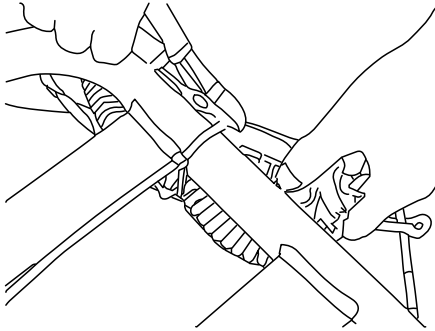
7. Cut the untrimmed or green plastic tie holding the knee-foot panel to the frame.



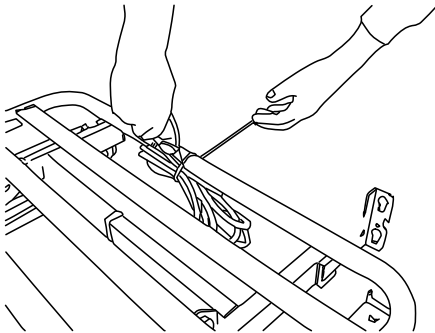
8. Cut the untrimmed or green tie holding the mattress keepers on either side of the bed.



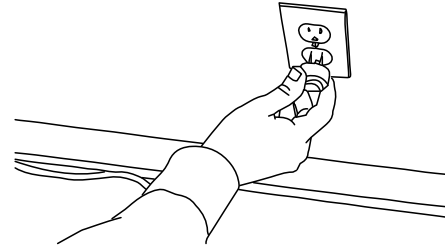
9. Cut the untrimmed or green ties holding the mattress keepers at the end of the bed.



10. Carefully cut the untrimmed or green tie holding the pendant bundle.



11. Carefully cut the untrimmed or green tie holding the mains cable bundle.



12. Plug power cord into a properly grounded outlet.



13. Cut the untrimmed or green tie while holding the wall bumper.

## 4.2 Installing the Mattress Keeper Rod to the Head and Foot Decks



### **WARNING!**

#### **Risk of Injury or Damage**

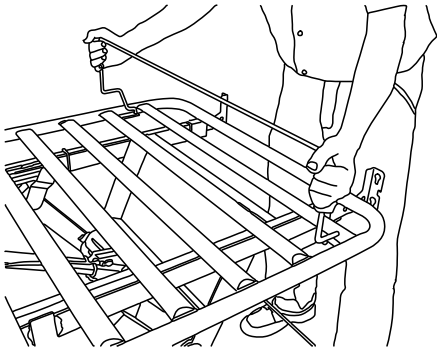
By securing the mattress in place, the mattress keeper rods prevent unsafe gaps from forming between the bed ends or rails and the mattress.

- Install the mattress keeper rods correctly to decrease the risk of patient entrapment.

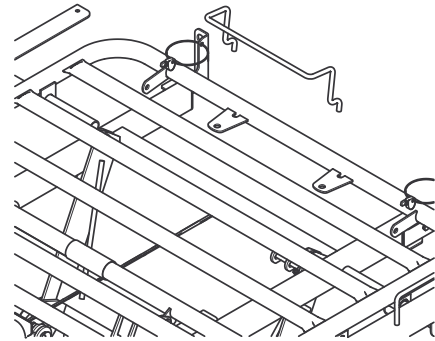


The mattress keeper rods hold the mattress in place. Install them in the head and foot decks.

### **All Models Except CS9FX600**



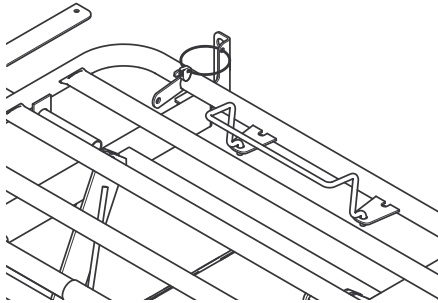
### **Model CS9FX600**



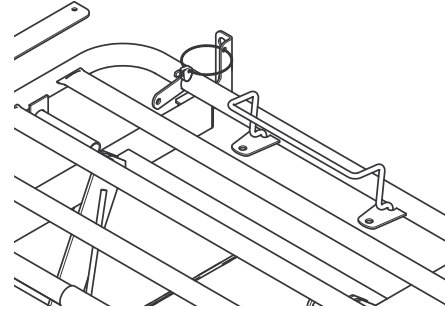
- I. With the mattress keeper upright, insert the rod ends into the appropriate deck holes.

### **All Models Except CS9FX600**

**Model CS9FX600**

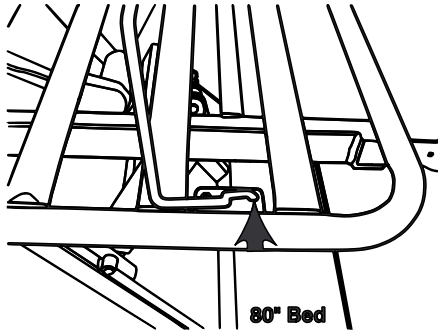


**Model CS9FX600**



2. There are two choices for mattress keeper rod insertion. (76 in bed option shown above).

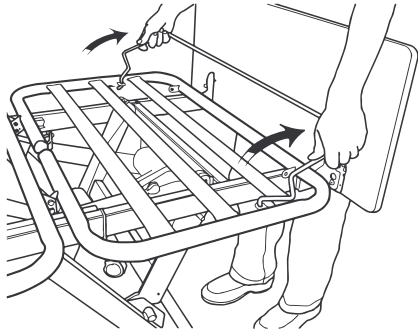
**All Models Except CS9FX600**



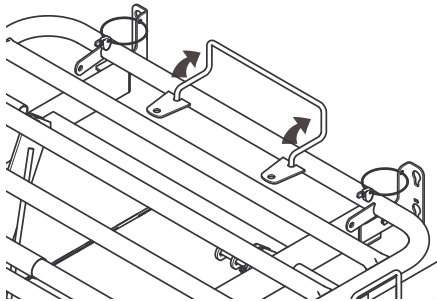


3. Mattress keeper rod insertion on 80 in Bed.

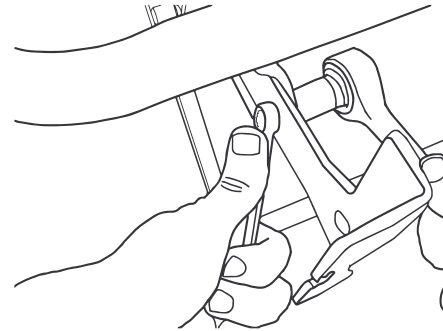
**All Models Except CS9FX600**



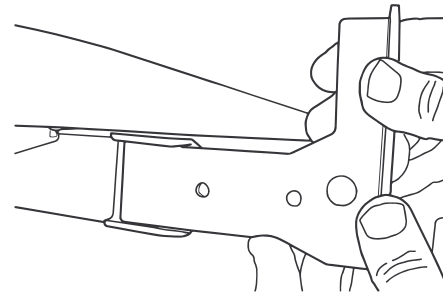
**Model CS9FX600**



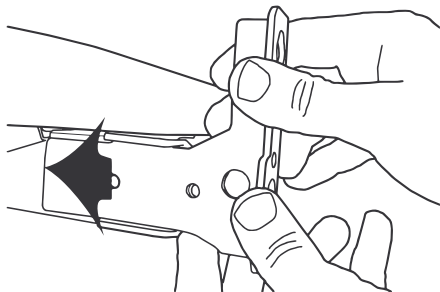
4. Fold the mattress keeper around the bed in the rod. The mattress keepers should rest flat on the foot deck and the head deck.



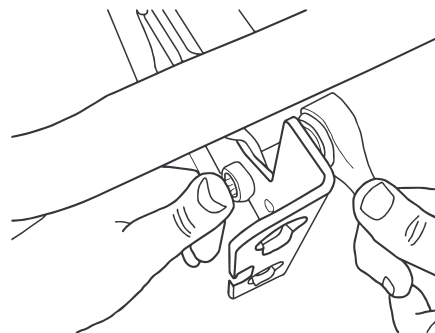
5. 76 in Bed Only - With a 7/16 in socket wrench and 7/16 in wrench loosen and remove the bed end bracket fasteners.



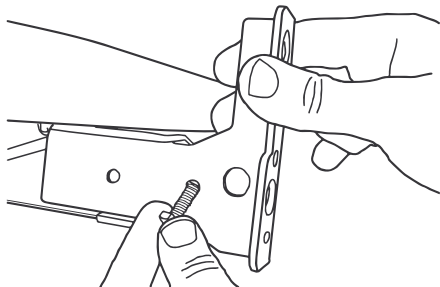
6. 76 in Bed Only - Remove the fasteners on the bed end bracket.



8. 76 in Bed Only - Reinsert the bed end bracket fasteners.

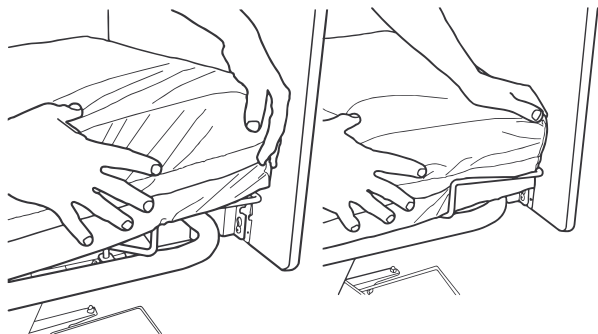


7. 76 in Bed Only - Slide the bed end bracket in the mounting channel. Align the hole in the bracket with the channel hole.

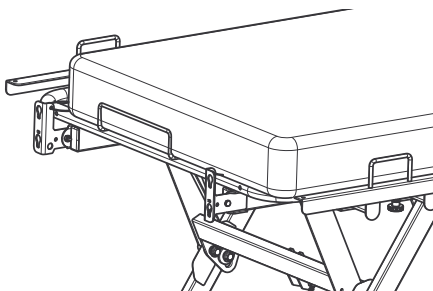


- 76 in Bed Only - Tighten the fasteners with two 7/16 in wrenches. Reposition the other three brackets and reapply the ends.

**All Models Except CS9FX600**



**Model CS9FX600**



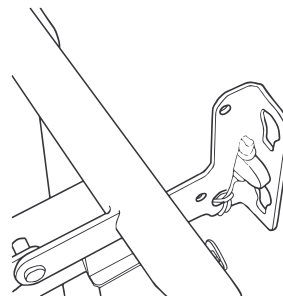
- Position the mattress on the deck.
- Press the mattress inside the mattress keeper. Ensure the mattress is engaged on all four corners.

### 4.3 Installing the Head and Foot Ends



Head and foot ends are normally packaged together either in a cardboard box or on a wooden skid separate from the bed.

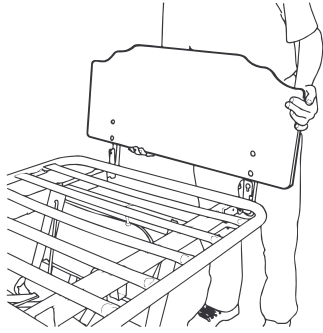
Bed end model IHBEADJ must be used with bed model CS9FX600. 6.10 Refer to Adjusting the Head Board Width for CS9FX600 on page 62, page 54.



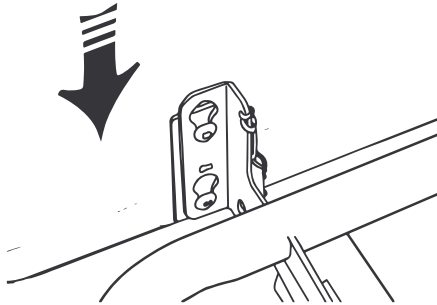
- Remove the key from the keyhole.



Bed end not shown.



2. Position Head End next to the head board bracket. Hook the head post screws in the bracket slots.

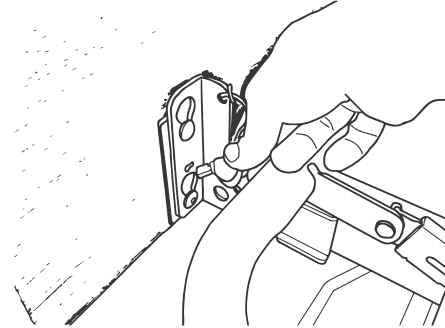


3. Slide the boards down while plate/post screws are in the bracket slots.



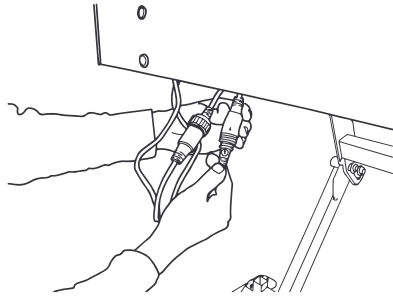
Foot end shown.


4. Position Foot End next to the foot board brackets. Hook the board screws into the bracket slots.



5. Guide the key through the small bracket hole. The key is attached to the bed bracket with a lanyard.

6. Turn and lock the key once it is fully inserted. Repeat on the other side, then the opposite bed end, securing both mounting points on each board.



 Some models only have one connection.

7. Attach the cables from the foot end board to the bed cables (ACP cable and pendant coupling). Tighten the nut\*.

 \*ACP bed only.

## 5 Usage

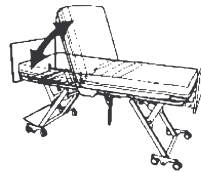
### 5.1 Pendant Operation

**DANGER!****Risk Of Death, Injury, Or Damage**

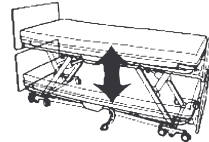
To avoid injury or damage from entanglement with bed components or bed collapse:

- Keep all moving parts, including the main frame, mattress deck, and all drive shafts, free of obstruction (i.e. blankets/sheets, tubing, wiring, cords, etc.) during operation of the electric bed.

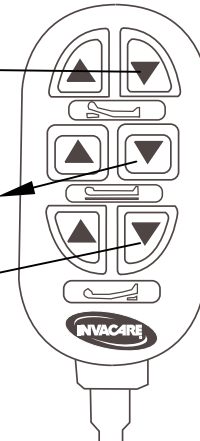
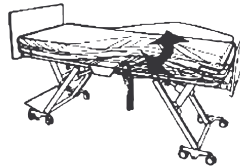
Raise/Lower Head

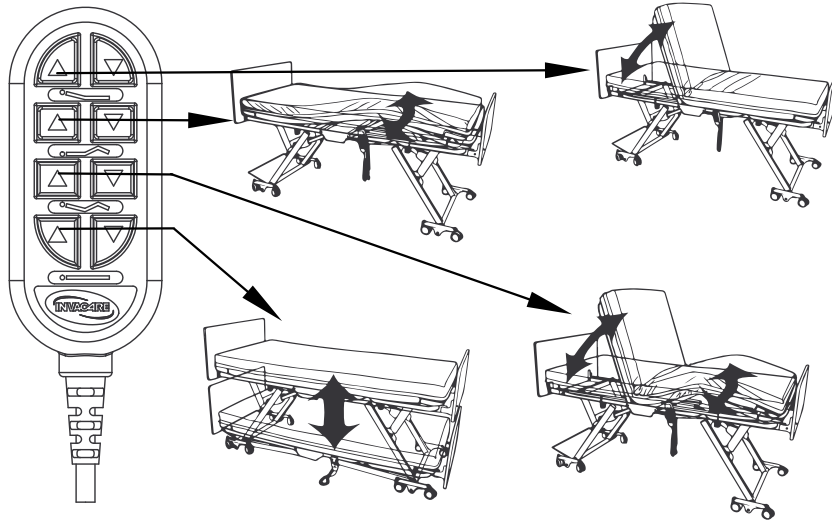


Raise/Lower Bed



Raise/Lower Knee





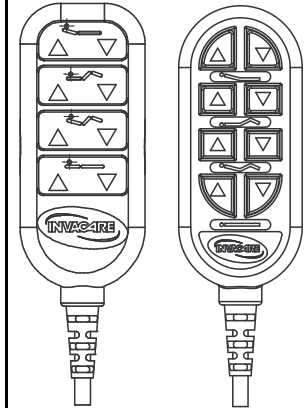
Raise/Lower Head

Alternate Pendants

Raise/Lower Knee

Raise/Lower Bed

Raise/Lower Head  
and Knee

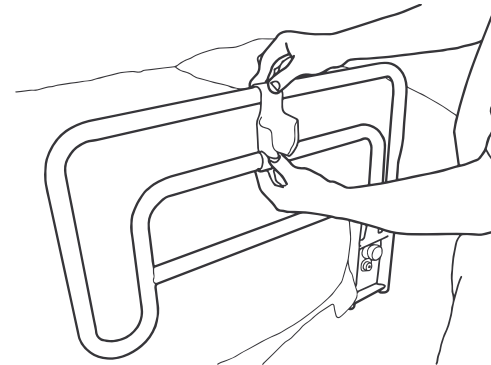


## 5.2 Pendant Storage and Location

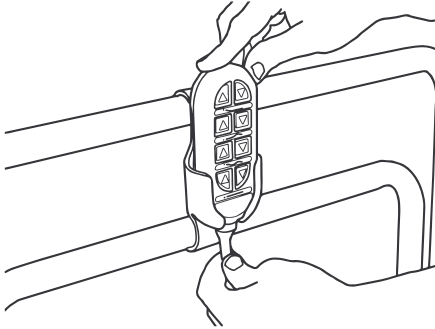


### **WARNING!** Risk of Injury or Damage

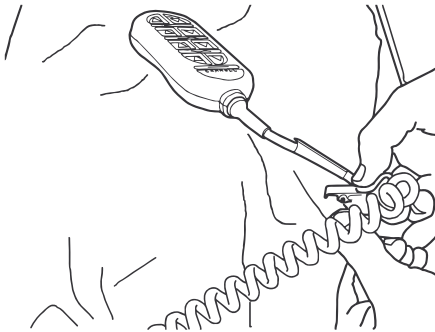
- To avoid injury or damage from electrical shock
- Before working on any electrical part, such as the 9-pin pendant coupling, ensure the main power to the bed is disconnected and the capacitor inside the control box is fully discharged.
  - Full capacitor discharge can be achieved by sequentially depressing the 'Up' and 'Down' buttons on the hand pendant at least 20 times after main electrical power to the control box is cut. Ensure the hand pendant is not locked-out when discharging it.



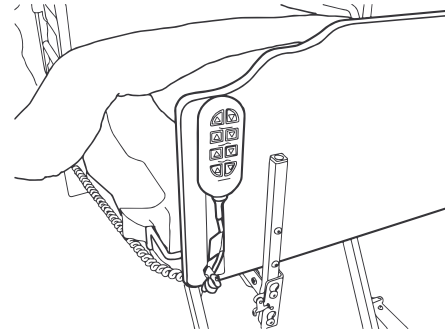
1. Place the pendant holster between the top rail bars.



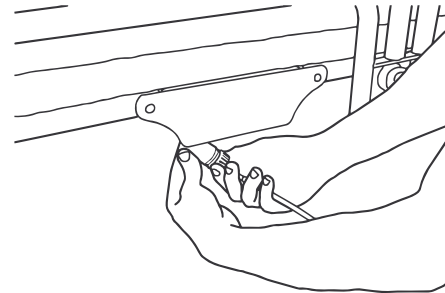
2. Slide the pendant into the holster.



3. Alternatively, use the pendant clip to secure the pendant to bed linen.

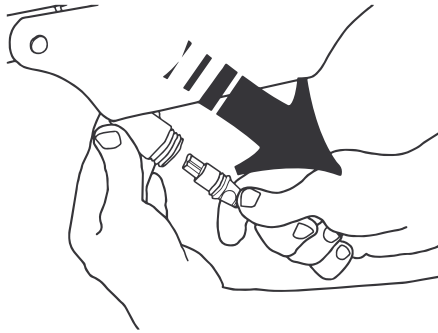


4. The pendant can also be attached to the back of either side of the Head end.

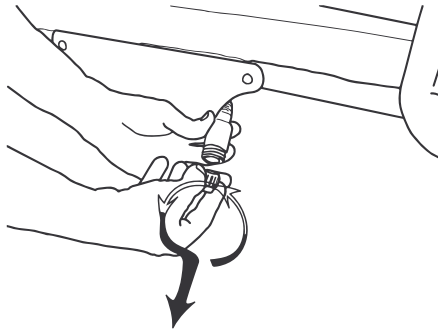




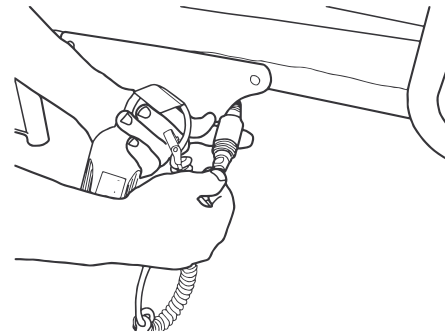
5. To move the pendant to the other side of the bed, disconnect the main power then unscrew the coupling cap on the pendant cable.



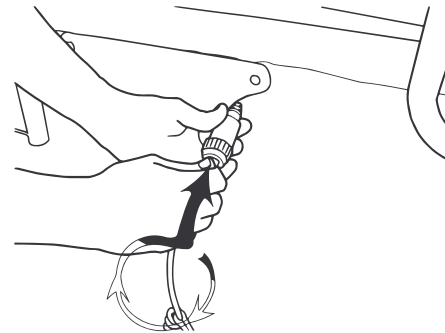
6. Remove the cable end from the Y cable housing.



7. On the other side of the bed, remove the cap from the Y cable housing. Replace the cap on the other side of the bed.



8. Align arrows then insert the pendant cable end into the Y cable housing.

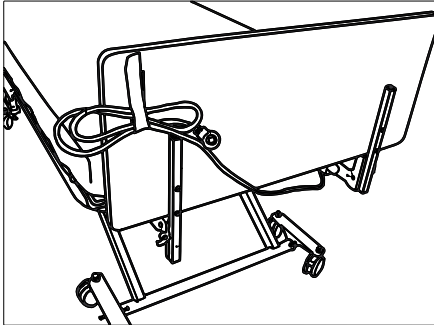


9. Screw the coupling cap to the threaded Y cable housing end.

### 5.3 Power Cord Storage

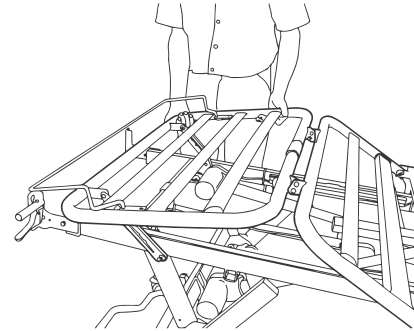


Disconnect the main power cable from the wall outlet and store the power cord when the bed is not in use.

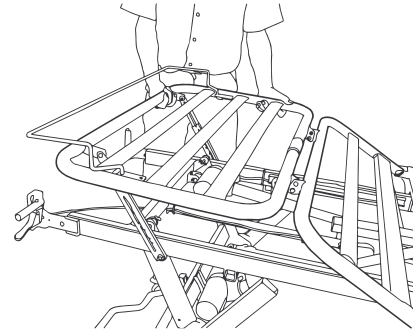


1. Secure the power cord to the back of the head end with the hook and loop strap when moving the bed.
2. Excess power cord can be secured to the back of head end with the hook and loop strap.

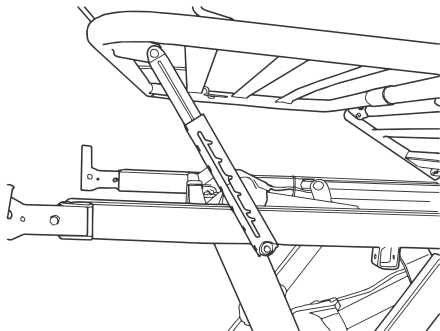
### 5.4 Raise and Lower the Heel Lift Ratchet



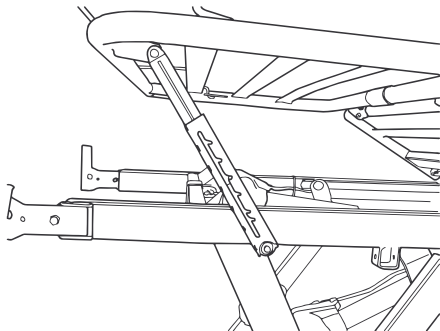
1. With knee-foot platform adjusted to the highest position, lift the foot panel.



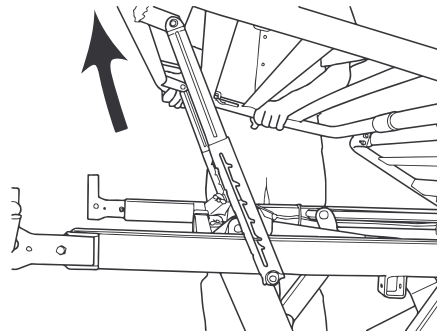
- The foot section can rest at any of the six pre-set stops.



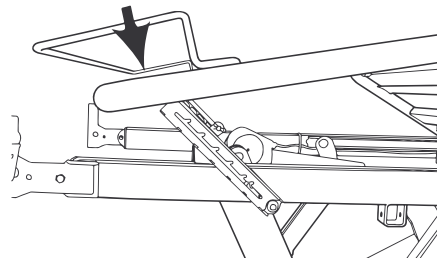
- Slowly lower the platform to engage the nearest stop.



- The platform cannot lower past the nearest stop while being adjusted.



- To reset the ratchet mechanism, raise the platform to the highest level then lower the platform in one motion.



- At the lowest position the deck can once again be raised to the desired stop.

## 5.5 Foot Pad Lock Mechanism

For CS3 Model Only



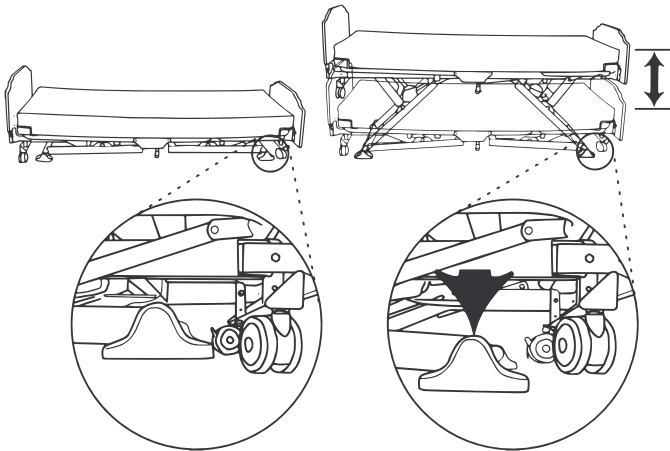
### CAUTION! Risk of Damage

Moving the bed while the floor lock, caster lock, or foot pad is engaged may DAMAGE the bed. To avoid:

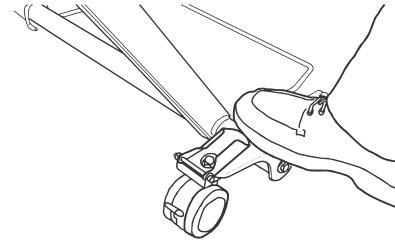
- DO NOT move the bed unless the floor lock, caster lock, or foot pad is disengaged (unlocked).

### Mobility

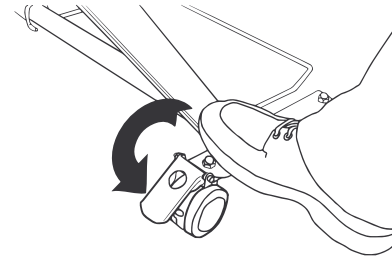
Bed at the Lowest Position



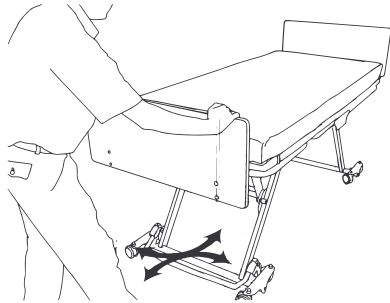
## 5.6 Bed Steer Mechanism



- I. Steer mechanism is on either side of the head end of the bed.



2. With the locking wheel tab facing outward, flip the steer mechanism.



3. When engaged the bed will steer easily.

## 6 Options

### 6.1 Bed Rails and Positioning Devices



**DANGER!**

**Risk Of Death, Injury, Or Damage**

Patient entrapment from the use of bed side rails may cause injury or death. To avoid patient entrapment:

- The Invacare mattress **MUST** fit firmly against the bed frame **AND** bed side rails to prevent patient entrapment. Follow the manufacturer’s instructions. Monitor patient frequently. Read and understand the User Manual prior to using the Invacare bed and bed rails. User manuals are available at [www.invacare.com](http://www.invacare.com) or your dealer.
- After any adjustments, repair or service and before use, make sure all attaching hardware is tightened securely.



**DANGER!**

**Risk Of Death, Injury, Or Damage**

To avoid pinching, crush and collapse hazards from bed deck contact with objects under the bed:

- **DO NOT** place any objects or let any individual underneath the bed or in between the raised bed frame components at any time.

To avoid choking from small detachable parts contained underneath the bed:

- Closely supervise children, pets, or people with physical/mental disabilities.



**DANGER!**

**Risk Of Death, Injury, Or Damage**

To avoid entrapment, product damage, and/or personal injury:

- Invacare recommends that the mattress be centered on the bed frame. Otherwise, individuals may become trapped between the bed rail and the bed frame.
- **ALWAYS** test to make sure that the side rails are properly and securely in place before using. Otherwise, injury or damage may occur.



**DANGER!**

**Risk Of Death or Injury**

An increased risk of patient entrapment may occur over time due to mattress compression.

- Periodically monitor gaps between the bed, mattress, and/or bed rail. Where gaps occur, patient entrapment is possible and the mattress should be replaced.



**DANGER!**

**Risk of Death, Injury, or Damage**

Proper patient assessment and monitoring, and proper maintenance and use of equipment is required to reduce the risk of entrapment.

Variations in bed rail dimensions, and mattress thickness, size or density could increase the risk of entrapment.

- Visit the FDA website at <http://www.fda.gov> to learn about the risks of entrapment. Review “A Guide to Bed Safety”, published by the Hospital Bed Safety Workgroup, located at [www.invacare.com](http://www.invacare.com). Use the link located under each bed rail product entry to access this bed’s safety guide.



**DANGER!**

**Risk Of Death, Injury, Or Damage**

Conditions such as restlessness, mental deterioration and dementia or seizure disorders (uncontrolled body movement), sleeping problems, and incontinence can significantly impact a patient's risk of entrapment. Pediatric patients or patients with small body size may also have an increased risk of entrapment.

- Monitor patients with these conditions frequently.



**WARNING!**

**Risk of Injury or Damage**

To avoid injury or damage from instability, entanglement, or misuse:

- Evaluate residents prior to allowing them to use a trapeze.
- Use only Invacare trapeze systems designed specially for the CS bed: Standard Trapeze (1153385) or Heavy Duty Trapeze (1153386).
- Never allow children to use, play, or swing on the trapeze.
- The Standard and Heavy Duty Trapeze are NOT designed, however, to support the total body weight of an individual. Use it for assistance ONLY.
- When in use, always rotate the trapeze until the handle is located over the center of the bed and ensure that it drops down into the anti-rotation position.



Safe Working Load of the Standard Trapeze is 168 lb. (750 N). DO NOT exceed 168 lb. (750 N).



Safe Working Load of Heavy Duty Trapeze is 250 lbs. (1115 N). DO NOT exceed 250 lb. (1115 N).



**WARNING!**

**Risk of Injury or Damage**

Contact between the floor and the assist rail may cause the bed to become unstable. An unstable bed may tilt from horizontal and / or drop suddenly causing property damage or personal injury. To avoid injury or damage from instability:

- Before lowering the bed, ensure the assist rail is not in the transfer position. Injury from patient falls may occur even when operating the side rails as instructed. Place the bed in the lowest position to minimize the risk from falls.
- Invacare recommends removing the trapeze when using the Trendelenburg function.
- DO NOT install an 84 Inch CS Bed kit on a bed that is equipped with the CPR release feature.
- DO NOT install an 84 Inch CS Bed kit on a bed that is equipped with the Trendelenburg and Reverse Trendelenburg feature.



**WARNING!**

**Risk of Injury or Damage**

Risk of FALL when Assist Bar is UNLATCHED. Assist Bar may rotate quickly and drop to the next locked position causing the patient to lose their balance and fall.

- Ensure the Assist Bar is fully latched in down position after each use.
- Check that the Assist Bar is locked before leaving a patient unattended.
- Never use the Assist Bar as a Rail.



If necessary, the head and foot end board position can be adjusted in order to meet FDA guidelines. Refer to the section titled, “Install the Mattress Keeper Rod to the Head and Foot Decks” for detailed instructions on adjusting the end board bracket location.

The listed bed rails and positioning devices are available:

<b>Model</b>	<b>Description</b>
IHCSRLAS	CS Assist Rails - Set
IHCSRLAS-NG	CS No Guard Assist Rail - Set
IHCSBARS	CS Assist Bar - Set
IHCSTSPD	ThinkSoft® Positioning Device TSPD
IHCSRLPA	68 Inch Rail
IHCSRLAS - 39NG	CS No Guard assist rail for 39 inch wide deck - set
IHCSRLAS - 42NG	CS No Guard assist rail for 42 inch wide deck - set
IHCSBARS39	CS assist bar for 39 inch wide deck - set
IHCSBARS42	CS assist bar for 42 inch wide deck - set

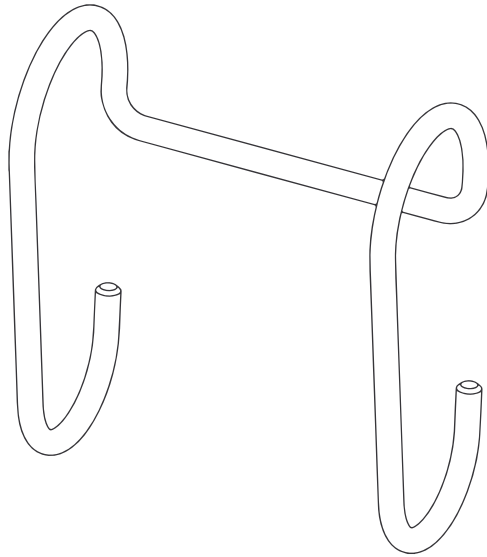
## 6.2 Other Accessories

The listed items are available as optional accessories:

<b>Model</b>	<b>Description</b>
IHCSBEK	4 Inch Extension Kit
IHCSDB	Drainage Bag Holder
IHCSTRP	Standard Trapeze and Mounting Bracket
IHCSTRPHD	Heavy Duty Trapeze and Mounting Bracket
IHCSPD	Aftermarket Pan Deck Kit
BSTRANSPORTCS	Bed Transporter
IHCSBATPU-CB	Portable Battery Unit
BDTRANSPORTCS	Bed Transporter
IHCSBATPU-CB	Portable Battery Unit



### 6.3 Optional Drainage Bag Holder



### 6.4 Optional Touch-up Paint

Sherwin-Williams®

5A-58147 00(A)

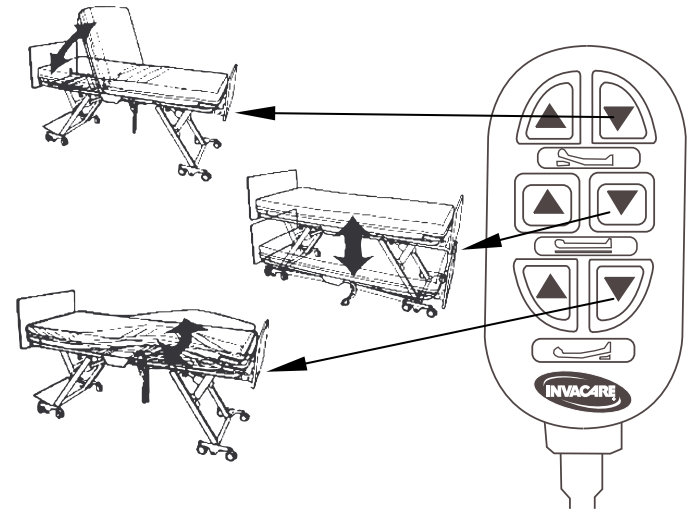
CODE 82X

WHITE BIRCH

2nd Dimension 5.0 Acrylic Enamel

This product can be purchased at Sherwin Williams Automotive paint branches only.


### 6.5 Optional Attendant Control Panel Operation



#### 4 Function Pendant

Using the integrated Nurse Call Feature


1. Locate call cord cable at the head of the bed along with the power cord.
2. Route cable to nurse call wall outlet and insert call cable plug into socket.

3. Coil any extra cable and secure to the bed.
4. Test Nurse Call  by pressing the red first aid button on the hand pendant.



In the event of a power failure or an issue occurs within the electronic system of your Invacare bed, the nurse call button will be activated, and will not be reset until the electronic system is running properly. Remove the nurse call plug to disable nurse call signal until service is preformed.

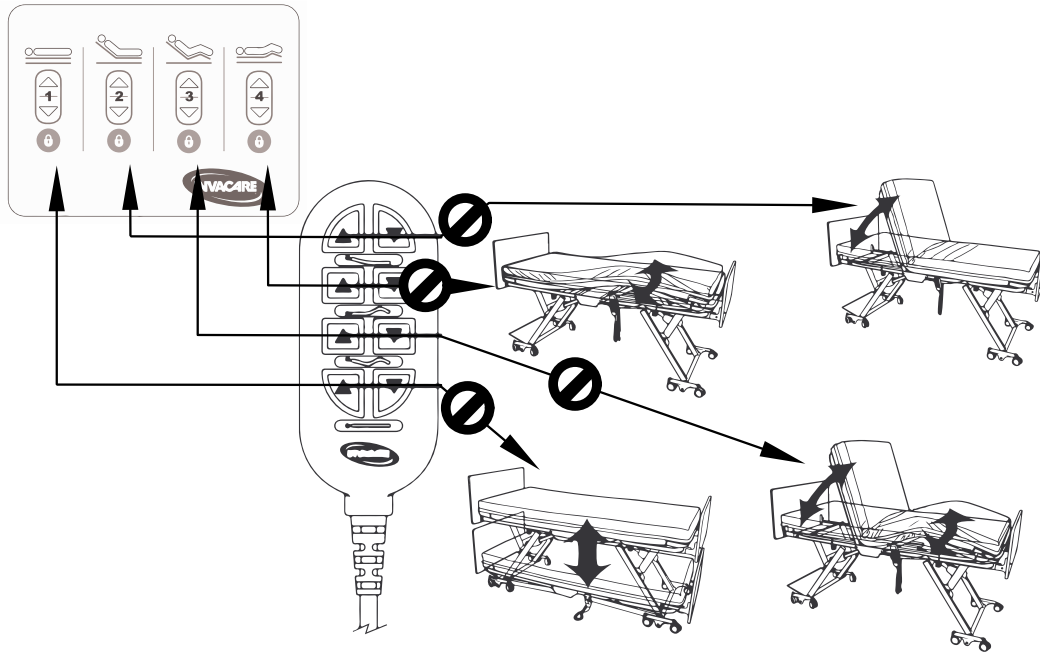
#### Using the Underbed Light

1. The underbed light  has pre-installed at the foot end of the bed. All cabling has been routed and secured to keep it from getting pinched during normal operation of the bed.

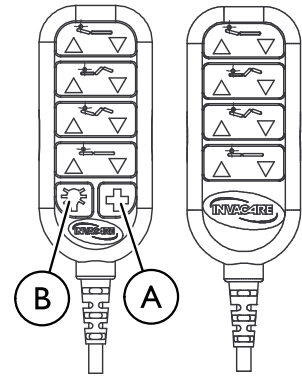


The underbed light can be turned on by pressing the blue light button on the hand pendant. Press again to turn off.

### Attendant Control Panel Lockout



### Alternate Pendants



All functionality is the same on the alternate pendants except where noted.

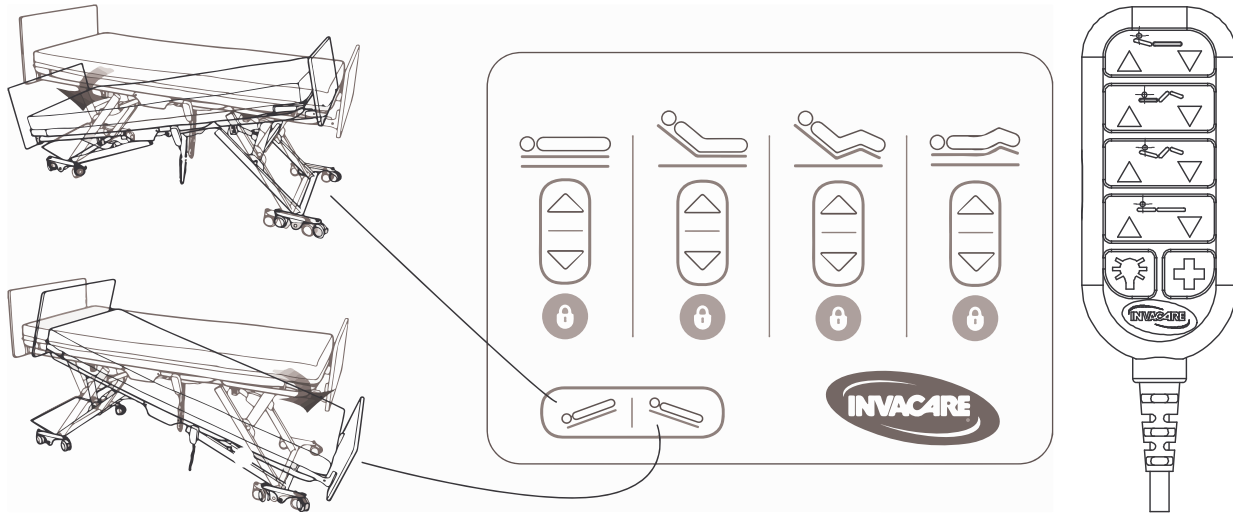
## 6.6 Optional Trendelenburg and Reverse Trendelenburg Trendelenburg Attendant Control Panel



### CAUTION! Risk of Damage

Use of Trendelenburg or Reverse Trendelenburg feature may not be appropriate for certain patients.

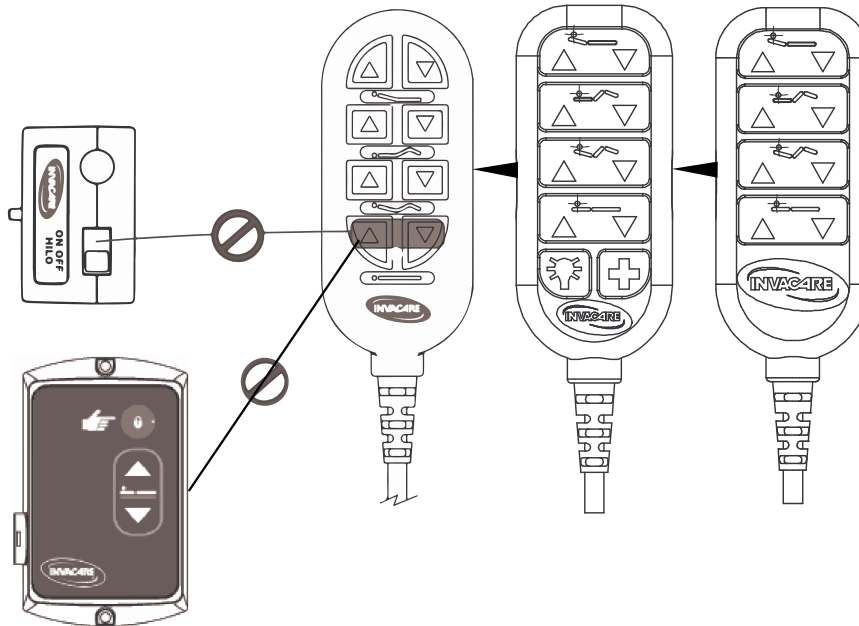
- Trendelenburg and Reverse Trendelenburg should only be used on the advice of a medical practitioner.
- Do not install a CS Bed Extender on a bed that is equipped with the Trendelenburg and Reverse Trendelenburg feature.



## 6.7 Optional Pendant HI/LO Lock Out



When in the “OFF” position, the HI/LO function on the pendant will NOT operate. When in the “ON” position, all pendant functions will operate normally. The head function and knee-foot function on the pendant remains operational whether the lock out is activated or deactivated.



## 6.8 Optional Cardiopulmonary Resuscitation (CPR) Release



### **WARNING!**

#### **Risk of Injury or Damage**

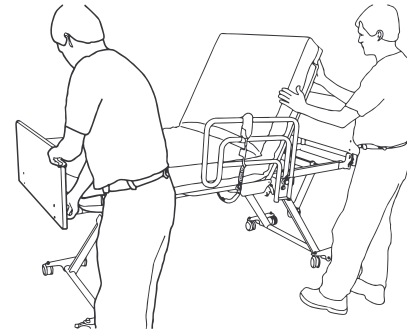
Activation of the CPR release may cause attendant or resident injury. To avoid:

- Use the CPR release only for emergency situations. This function will rapidly bring the head deck to a flat position. Two-person operation is recommended; one person to release the head deck, and another to hold and gently guide the head deck down.
- DO NOT install a CS Bed Extender on a bed that is equipped with the CPR release feature.

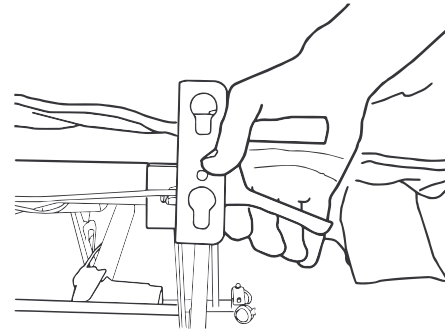
When using the CPR Release function, it is recommended to use two people; one person to release the head deck at the foot end of the bed and another person to gently guide the head deck to a horizontal position.

### **Additional Means to Lower the Back Rest in an Emergency**


The clevis pin and retaining clip can be removed from the connection between the head actuator and head deck section to lower it. The head deck must be supported while removing the pin and lowering the head deck.

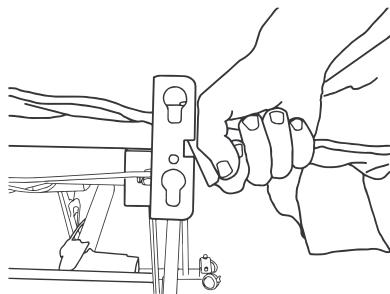


- I. CPR handle is at the foot of the bed. A second person is recommended to gently lower the head deck.

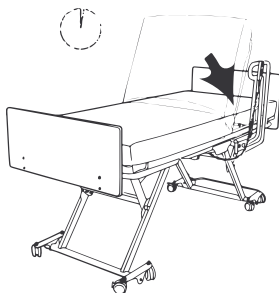


- Grip the CPR handle (at the foot end of bed ).

 Foot end not shown for clarity.




- Squeeze the CPR handle to drop the head deck.

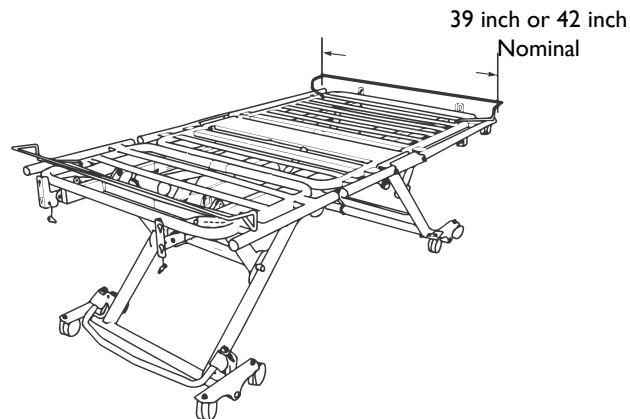


- Once the CPR handle is squeezed, the head deck will drop rapidly.


## 6.9 Optional 39 Inch and 42 Inch Wide Decks

 The following bed options are not compatible with the 39 inch or 42 inch wide bed deck: 68 inch rail.


The CS bed is available with wider decks for resident comfort. Both 39 inch wide deck and 42 inch wide decks are factory installed options.



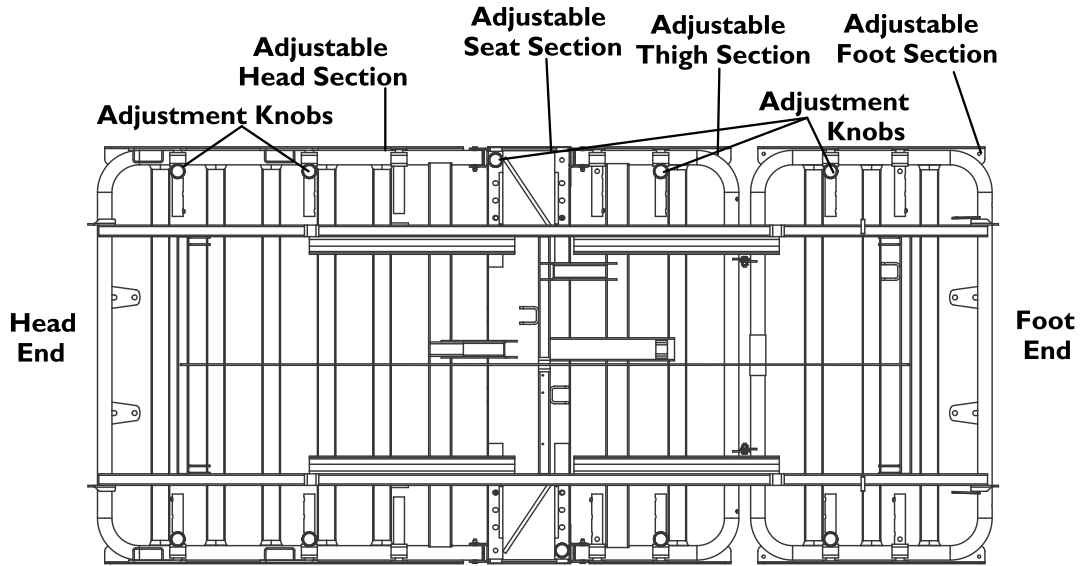
## 6.10 Adjustable Width Bed Model CS9FX600


 The following bed options are not compatible with the CS9FX600: 68 inch rail.

### 6.10.1 Adjusting the CS9FX600 Bed Width

 All eight adjustable deck wings must be adjusted to the same width. Ensure the appropriate bed and head board settings are used as described in this procedure.

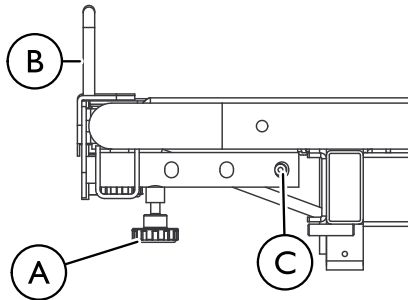
The CS9FX600 has eight adjustable deck wings which can be adjusted to 36 in, 39 in or 42 in. The locations of the wings and adjustment knobs are shown in the figure below.



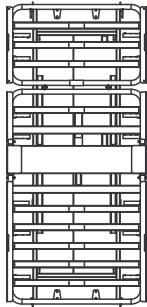
 Opposite side is the same as labeled side.



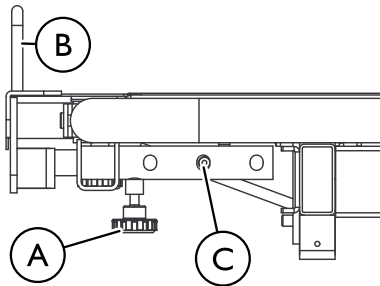
**36 inch Width  
Side View**



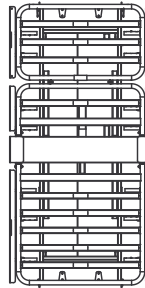
**Top Bed Deck View**



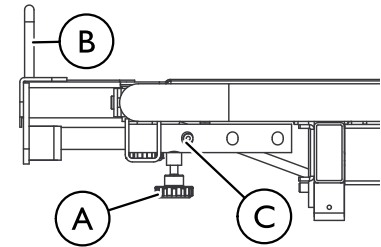
**39 inch Width  
Side View**



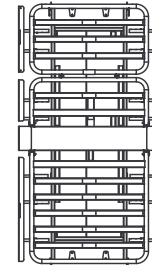
**Top Bed Deck View**



**42 inch Width  
Side View**



**Top Bed Deck View**



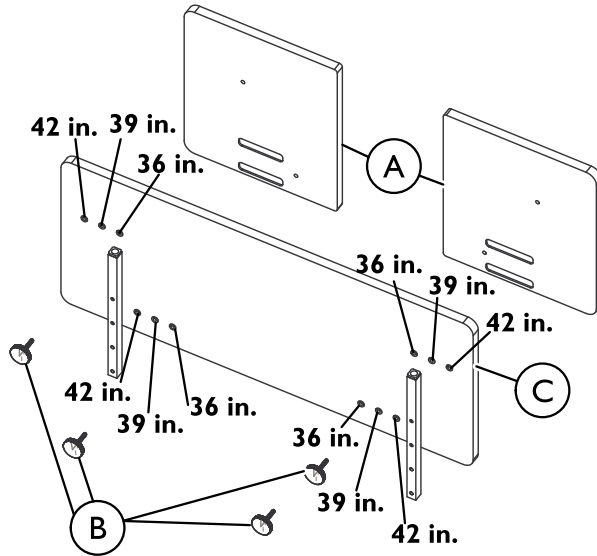
1. Loosen the knob (A) securing the adjustable deck wing (B).
2. Depress the snap button (C).
3. Slide the adjustable deck wing in or out to the desired position.
4. Ensure the snap button snaps into the appropriate adjustment hole.
5. Tighten the knob to secure the adjustable deck wing.

6. Adjust the head board width. Refer to 6.10.2 Adjusting the Head Board Width for CS9FX600, page 57.
7. Repeat steps 1 to 6 for each section until they are all adjusted to the same width.

### 6.10.2 Adjusting the Head Board Width for CS9FX600

Bed end model IHBEADJ is intended for use on bed model CS9FX600. The head board is adjustable and ships in the position for a 36 in wide bed.

1. Firmly grasp one of the board wings **A**.
2. While holding the board wing, remove the knobs **B** securing that wings to the center section **C**.
3. Move the board wing until the mounting holes line up with the desired adjustment holes in the center section.
4. Install the knobs to secure the board wing in the desired position. Tighten securely
5. Repeat steps 1-4 for the remaining board wing.



## 7 Maintenance

### 7.1 Cleaning



1. Unplug product before washing.
2. Make sure all electrical parts (motors, control box and pendant) are not damaged and that all connection ports are plugged. **DO NOT** allow liquids to enter electrical components.
3. Disinfect and wash all components. **DO NOT** submerge the bed frame or electrical parts.
4. **DO NOT** power wash or steam-clean. Use household water pressure only.
5. Rinse thoroughly with water (maximum temperature 110°F or 43°C). **DO NOT** use solvents, bleach, alcohol, petroleum products, caustic agents, or highly alkaline or acidic agents to clean the bed.
6. Retract each actuator to the minimum stroke length before washing to avoid degreasing the piston rod.
7. Dry all components before storing.

- Inspect rail latches. Ensure that all rails engage and lock as specified.
- Inspect rails for wear and damage and replace as required.
- Lubricate rail pivot points as needed with white lithium grease.
- Inspect bed, rails, Assist Rails or Assist Bars for the presence of tubing end caps and replace as required.
- Tighten, adjust or replace any parts or bolts etc. that are loose or show signs of wear.
- Lubricate all mechanical hinge points, bushings, and surface contact points with white lithium grease.
- Inspect for wear on clevis pins and hitch pins and replace if worn or missing.
- Inspect the rails for noticeable scratches and chips. Use a matching enamel touch up paint to retouch if necessary. (Refer to Options for paint specification).

### 7.2 Annual Maintenance Check

- Inspect the covering of the bed's control panel and the patient control panel to assure that the covering is not cracked or damaged.
- Inspect for damaged or loose wiring. Have a qualified technician replace any frayed or damaged cords.
- Inspect for secure grounding.

### 7.3 Quarterly Maintenance Check

- Unplug bed from wall outlet and verify battery function, if equipped. Battery may be built-in or portable.

## 8 Troubleshooting

### 8.1 Troubleshooting



**DANGER!**  
**Risk Of Injury Or Death**

To reduce the risk of electrical shock:

- Always unplug the bed from the electrical outlet before performing maintenance.
- DO NOT unplug the power cord from the control box.

Effect	Possible cause	Verification	Corrective action
Bed does not stay in place	Floor lock not engaged.	Green plunger on floor lock post is visible.	Activate floor lock - green plunger should NOT be visible.
	Insufficient static friction between floor lock foot bumper and floor.	Floor surface is slippery and/or foreign membrane between bumper and floor.	Clean the surrounding floor and remove loose material under the bed.
	Floor lock not functioning.	Floor lock is stuck in one position.	Contact Invacare Continuing Care Service Department 1-800-668-2337.
Bed is not level	Hi/Lo actuators are unevenly extended	Bed deck is not parallel with floor	Raise bed to highest position or Lower bed to lowest position

<b>Effect</b>	<b>Possible cause</b>	<b>Verification</b>	<b>Corrective action</b>
Actuator not working.	System Fault Needs Reset	Flashing LEDs on ACP, Bed function will not operate. The control box may beep when pendant function is pressed.	To Reset - hold the pendant bed up and bed down buttons for 5+ seconds. The bed will beep and stop beeping when reset is complete. Then press the bed up button. If the bed beeps, the actuators are out of sync. Continue rising to the highest position to synchronize the actuators.
Actuator not working.	HI/LO lock-out is on.	<p>For non-openbus (CS3, CS5) - A Lockout box (a square black box) with a toggle switch. When the switch is towards "ON" side, the HILO on the hand pendant will not function. There is no LED light.</p> <p>For openbus beds (CS7, CS9, CS9FX600) - The lockout box (a flatter rectangular white box) with a toggle dome button and LED light. When the light is on, the HILO on the hand pendant will not function.</p>	Rotate the lockout dial to the "unlocked" position (horizontal), or flip switch to OFF.
		Lockout LED on the Attendant Control Pad (ACP) is ON.	Toggle-off the individual function lockout (LED should be OFF)
	Loose wire connections.	Check cable connections visually.	Connect any loose cable couplings and/or power supplies.

<b>Effect</b>	<b>Possible cause</b>	<b>Verification</b>	<b>Corrective action</b>
	Faulty actuator.	Disconnect power supply, swap cable from unresponsive actuator with a functional actuator. Reconnect power and test functions. Faulty actuator will not work regardless of the connection port.	Contact Invacare Continuing Care Service Department 1-800-668-2337.
Actuator not working.	Faulty hand control pendant.	Pendant cable is connected, power is on, lock-out is off and hand control pendant does not function. Disconnect power supply then replace hand pendant with functioning unit (from another bed, if available). Reconnect power and test.	Contact Invacare Continuing Care Service Department 1-800-668-2337.
Bed ends to not fit properly.	Bent brackets.	Visually ensure the brackets are parallel to the frame.	Carefully straighten minor deformations. Call Service Department to replace significantly bent brackets, 1-800-668-2337.

## 9 Warranty

### 9.1 Limited Warranty



PLEASE NOTE: THE WARRANTY BELOW HAS BEEN DRAFTED TO COMPLY WITH FEDERAL LAW APPLICABLE TO PRODUCTS MANUFACTURED AFTER JULY 4, 1975.

This warranty is extended only to the original purchaser who purchases this product when new and unused from Invacare Continuing Care, Inc (ICCI) or a dealer. This warranty is not extended to any other person or entity and is not transferable or assignable to any subsequent purchaser or owner. Coverage under this warranty will end upon any such subsequent sale or other transfer of title to any other person.

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

ICCI warrants the frame and welds on this product when purchased new and unused will be free from structural defects on the frame for a period of ten (10) years, electrical for a period of three (3) years, and mechanical for a period of five (5) years from date of purchase from ICCI or a dealer, with a copy of the seller's invoice required for coverage under this warranty. ICCI warrants the frame of this product when purchased new and unused to be free from defects in materials and workmanship for a period of ten (10) years from date of purchase from ICCI or a dealer, with a copy of the seller's invoice required for coverage under this warranty. For all other components of this product when purchased new and unused, ICCI warrants that they will be free from defects in material and workmanship for a period of one (1) year from date of purchase from ICCI or a dealer, with a copy of the seller's invoice required for coverage under this warranty. Upholstery (vinyls, fabrics and/or laminates) are

not covered under this warranty. If within such warranty periods any such product shall be proven to be defective, such product shall be repaired or replaced, at ICCI's option. This warranty does not include any labor or shipping charges incurred in replacement part installation or repair of any such product. ICCI's sole obligation and your exclusive remedy under this warranty shall be limited to such repair and/or replacement.

For warranty service, please contact the dealer from whom you purchased your ICCI product. In the event you do not receive satisfactory warranty service, please write directly to ICCI at the address on the back cover, provide dealer's name, address, and the date of purchase, indicate nature of the defect and, if the product is serialized, indicate the serial number. Do not return products to our factory without our prior consent.

**LIMITATIONS AND EXCLUSIONS: THE FOREGOING WARRANTY SHALL NOT APPLY TO SERIAL NUMBERED PRODUCTS IF THE SERIAL NUMBER HAS BEEN REMOVED OR DEFACED, PRODUCTS SUBJECTED TO NEGLIGENCE, ACCIDENT, IMPROPER OPERATION, MAINTENANCE OR STORAGE, PRODUCTS MODIFIED WITHOUT ICCI'S EXPRESS WRITTEN CONSENT (INCLUDING, BUT NOT LIMITED TO, MODIFICATION THROUGH THE USE OF UNAUTHORIZED PARTS OR ATTACHMENTS; PRODUCTS DAMAGED BY REASON OF REPAIRS MADE TO ANY COMPONENT WITHOUT THE SPECIFIC CONSENT OF ICCI, OR TO A PRODUCT DAMAGED BY CIRCUMSTANCES BEYOND ICCI'S CONTROL, AND SUCH EVALUATION WILL BE SOLELY DETERMINED BY ICCI. THE WARRANTY SHALL NOT APPLY TO NORMAL WEAR AND TEAR OR FAILURE TO ADHERE TO THE PRODUCT INSTRUCTIONS.**

**“THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IN LIEU OF ANY OTHER WARRANTIES WHATSOEVER, WHETHER EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES**

OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND THE SOLE REMEDY FOR VIOLATIONS OF ANY WARRANTY WHATSOEVER, SHALL BE LIMITED TO REPAIR OR REPLACEMENT OF THE DEFECTIVE PRODUCT PURSUANT TO THE TERMS CONTAINED HEREIN. THE APPLICATION OF ANY IMPLIED WARRANTY WHATSOEVER SHALL NOT EXTEND BEYOND THE DURATION OF THE EXPRESS WARRANTY PROVIDED HEREIN. ICCI SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES WHATSOEVER.”



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Invacare Corporation.

**Invacare Continuing Care, Inc.**

**USA and Canada:**

One Invacare Way

Elyria, Ohio USA

44036-2125

Tel: 800-668-2337

[www.invacare-cc.com](http://www.invacare-cc.com)

Designed by Invacare Corporation

Manufactured in Mexico for Invacare  
Corporation

**Invacare Australia Pty. Ltd.**

1 Lenton Place

North Rocks NSW 2151

Sydney, Australia

011-61-1-8839-5333

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