

# CARROLL<sup>®</sup>

## HOSPITAL GROUP

### User Manual SPIRIT™ Bed 120 V

#### Certifications

- UL 2601
- CSA C22.2 No. 601.1-M90
- IEC 601-1
- IEC 601-2-38

**Please Read Carefully Before Using Your New Bed**

*The*  
**Spirit** *Bed*

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# SPIRIT™ User Manual Content

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# **SECTION 1: SPECIFICATIONS AND SAFEGUARDS**

## **FULL BED WARRANTY**

Carroll's pro-rated warranty covers manufacturing defect, or failure due to workmanship or materials. Electrical components are guaranteed to be free from manufacturing defect for one (1) year from the date of purchase, covered by the motor manufacturer's own warranty. Carroll Hospital Group Inc. warrants to the original purchaser of its products that the product or any part thereof, in the judgement of Carroll Hospital Group Inc. will not be defective in material or workmanship for one (1) year from date of original purchase. Carroll Hospital Group Inc. specifically warrants to the original purchaser of its products that the reinforced fibreglass bed deck will not be defective in material or workmanship for twenty (20) years from date of original purchase. Such defects will be repaired or replaced (at the company's option) free of charge for parts only, provided the defective product is shipped to the factory or an authorized depot at the customer's own expense. Shipping charges for return of the product to the customer will also be at the customer's own expense.

This warranty does not include any labour or shipping charges incurred in replacement part installation or repair of any such part. Carroll Hospital Group's sole obligation and your exclusive remedy under this warranty shall be limited to such repair and/or replacement.

After one year, for the next four years, frame parts only will be covered by the warranty according to the following fee schedule: 2<sup>nd</sup> year – frame parts (list price less 60%); 3<sup>rd</sup> year – frame parts only (list price less 40%); 4<sup>th</sup> year – frame parts (list price less 20%); 5<sup>th</sup> year frame parts (list price less 10%). Parts in the judgement of Carroll Hospital Group Inc. found to be damaged through normal wear and tear, impact, abuse, overloading, fire, lightening, water damage or power surges, brown-outs, improper supply voltage or use of other manufacturer's head and foot boards or accessories will not be covered and parts will be charged out at the full list price. Note also that any alteration of the bed or one of its components voids this warranty. A Return Goods Authorization number (RGA) must be obtained before returning any products or parts to the factory. We regret that no products will be accepted at the factory without an RGA number. No other warranty, expressed or implied by Carroll Hospital Group Inc. or its agents shall be considered valid.

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# INTENDED USE

The Spirit™ Bed is intended for low to moderate acuity patients in the medical and/or surgical area of the hospital. The Spirit™ Bed is also intended for use as a general-purpose variable height hospital bed for general care, post-operative, and general medicine wards.

# STANDARD CONVENTIONS USED IN THIS MANUAL

This manual includes information essential to the safety of the patient, personnel and equipment during the normal operation of the Spirit™ Bed. Before operating the Spirit™ Bed be sure you have read and understood the contents of this manual. It is important that you use this equipment in accordance with the procedures outlined in this manual. As you read through this manual be alert to the four signal words.

**⚠ DANGER** Information appearing under the DANGER caption concerns the protection of personnel from the immediate and imminent hazards that, if not avoided, will result in immediate, serious personal injury or loss of life in addition to equipment damage.

**⚠ WARNING** Information appearing under the WARNING caption concerns the protection of personnel from potential hazards that can result in personal injury or loss of life in addition to equipment damage.

**⚠ CAUTION** Information appearing under the CAUTION caption concerns the protection of personnel from potential hazards that can result in minor personal injury or equipment damage.

**NOTE:** Information appearing in a NOTE caption provides additional information, which is helpful in understanding the item being explained.

## Symbols Used on the Spirit™ Bed

	PROTECTIVE (EARTH GROUND)		CARDIOPULMONARY RESUSCITATION (CPR) ONE-TOUCH TO LOWER ALL PANELS TO THEIR LOWEST POSITION		CARDIAC CHAIR TOGGLE SWITCH BRINGS PATIENT TO A SITTING POSITION
	POTENTIAL EQUALIZATION		TRENDELEBURG CONTROL MOVE THE BED INTO TRENDELEBURG POSITION		FUNCTION LOCK-OUT ACTIVATE TOGGLE SWITCH TO DENY FUNCTION ACCESS ON THE HAND PENDANT
	WARNING - SAFE WORKING LOAD THE MAXIMUM ALLOWABLE LOAD ON EQUIPMENT IF THE INSTRUCTIONS FOR INSTALLATION AND USE ARE FOLLOWED		REVERSE TRENDELEBURG CONTROL MOVE THE BED INTO REVERSE TRENDELEBURG POSITION		
IP54	INTERNATIONAL PROTECTION CODE (IP CODE)		INITIATE ACTION TO HEAD SECTION OF MATTRESS SUPPORT PLATFORM		UP CONTROL RAISE THE CORRESPONDING SECTION OF THE MATTRESS SUPPORT PLATFORM
	TYPE B EQUIPMENT		INITIATE ACTION TO THE ENTIRE MATTRESS SUPPORT PLATFORM (HILO)		DOWN CONTROL LOWER THE CORRESPONDING SECTION OF THE MATTRESS SUPPORT PLATFORM
CLASS 1	EQUIPMENT CLASSIFICATION IN TERMS OF PROTECTION AGAINST ELECTRICAL SHOCK		INITIATE ACTION TO THE KNEE-FOOT SECTION OF THE MATTRESS SUPPORT PLATFORM		

## Technical Specifications – SPIRIT™ Bed

Certifications	
Canada	CSA C22.2 No. 601.1-M90
USA	UL 2601
Europe	IEC 601-2-38
Elevation Range (floor to deck)	
Lowest Position	8-3/4" (222.25 mm)
Highest Position	34" (863.60 mm)
Head Deck Angle	0° to 67°
Knee - Foot Angle	0° to 25°
Trendelenburg	0° to 15°
Reverse Trendelenburg	0° to 13°
Under-bed patient lift clearance	13" @ highest stable pos. (330.20 mm)
Electrical Specifications	
Control Box Mains Voltage	120V
Control Box Input Current	2.7 A
Control Box Current Frequency	60 Hz
Control Box Output Voltage	24 Volts DC (70W max)
Control Box Duty Cycle	10% (6 min/hr max)
Motorised Linear Head Actuator	24 Volts DC 7.80" (198mm) stroke
Motorised Linear HILO Actuator (head end mount)	24 Volts DC 13.74" (349mm) stroke
Motorised Linear HILO Actuator (foot end mount)	24 Volts DC 13.74" (349mm) stroke
Motorised Linear Foot Actuator	24 Volts DC 6.50" (165mm) stroke
Six function hand pendant	standard
Staff Control Keypad in foot board	standard
Intermittent Operation or Maximum Continuous Operation	6 min/hr
Safety Features	
Protective Earth Ground	Class I
Electric shock protection	Type B
Enclosure protection	IPX4
Dual foot pedal - Steer feature	caster engagement 2 foot end (no swivel)
Dual foot pedal - Lock feature	total lock all 4 casters (no roll and no swivel)
Built-in Battery Back-up	standard
Convenience Features on Staff Footboard Control Pad	
One touch CPR button (lowers all deck panels to flat position)	standard
Chair button (Head up, knee up and bed in reverse Trendelenburg position)	standard - toggle button with LED
Auto Contour button	standard - toggle button with LED
Security - Patient Lock-Out	
Bed Elevation (HILO)	standard - toggle button with LED
Head Section	standard - toggle button with LED
Knee-Foot Section	standard - toggle button with LED
Total Lock-Out (All patient and staff functions)	standard - toggle buttons with LEDs
Dimensions and Weight	
	Spirit™ Bed
Length (overall)	91½" (2324.10mm)
Length - Between head & foot board	83" (2108.20mm)
Length - Mattress Platform	80" (2032mm)
Width (with rails up)	41" (1041.40mm)
Width - Mattress Platform	35" (889mm)
Weight (pounds)	310 lbs. (140 kg.)
Load Capacity - Safe Working Load	500 lbs. (227 kg.)

## IMPORTANT ELECTRICAL SAFEGUARDS

- Plug the three prong electrical cord **ONLY** into a properly grounded 110 VAC to 120 VAC, 60 cycle outlet that is rated to at least ten amps (10 A).
- The Spirit™ Bed is equipped with a cord storage device at the head end of the bed. The power supply cord should always be stowed whenever moving, transporting, or storing the bed.
- **DO NOT** use an extension cord.
- **DO NOT** permit the cord, wall outlet, electric motors, control box or pendant to become wet or submerged.
- **DO NOT** operate the bed if the cord or outlet is damaged.
- **DO NOT** operate the bed if any motor has malfunctioned or is damaged in any manner.
- **DO NOT** use this bed in Active Treatment "Ether Environments".

	<b>⚠ DANGER</b>
	<p>EXPLOSION Hazard</p> <p><b>DO NOT</b> operate this bed in the presence of a flammable anaesthetic mixture with air or with nitrous oxide.</p>

	<b>⚠ DANGER</b>
	<p>Electric components, such as motors, exposed to water, may cause severe injury including electrocution.</p> <p>During routine bed operation or when cleaning, <b>DO NOT</b> expose electrical components to water. Unplug and de-energize electrical components when water products are near these components.</p>

	<b>⚠ DANGER</b>
	<p>Possible <b>FIRE</b> hazard exists if the hand control pendant is not disabled when using oxygen administering equipment. If bed is equipped with handheld patient pendant control, disconnect the pendant from the port at the side of the bed and hang it on the pendant hook (in holder) when not in use.</p> <p>Keep pendant cord clear of moving equipment.</p>



### **⚠ DANGER**

Possible FIRE hazard exists when connecting the electric cord to a 120V wall outlet if oxygen administering equipment is in use.

Use either the nasal mask or ½-length tent, ensuring the tent never extends below the mattress support level, when administering oxygen.



### **⚠ WARNING**

DO NOT roll the bed over the power cord. DO NOT entangle the cord on other objects. A pinched electric cord is dangerous and can become damaged. Be aware of the power cord location especially when moving the bed.

This equipment may cause electromagnetic disturbances to its environment. The bed has NOT been evaluated for electromagnetic compatibility (EMC). The performance of this equipment may be degraded when exposed to electromagnetic disturbances and / or electrostatic discharge.

## **INTERNAL ELECTRICAL POWER SOURCES**

- The Spirit™ Bed is equipped with both a primary and auxiliary power source. The primary power source is a mains transformer located within the control box. The control box is located under the head section of the bed. The auxiliary power source is a rechargeable battery. The battery back-up is located under the knee section of the bed's deck between two linear actuators (see *Spirit Wiring Schematic* drawing).

## **AUXILIARY BATTERY**

- The rated capacity of the auxiliary battery is 1.2 Ah, 24 V DC.
- The battery is continuously charged as long as the bed's power supply is plugged into a 120 VAC wall outlet and the battery cable is connected to the control box via the DC Jack plug (refer to the *Unpacking Instructions* in this manual). The maximum charging current is 0.3 A.

**IMPORTANT:** Be sure to unplug the battery cable from the control box if the bed is to be stored for an extended period of time (refer to the *Storage and Transport Instructions* of this manual).

- The battery is maintenance free with the exception of a recommended semi-annual test to verify the battery's operation (refer to the *Care and Maintenance* section of this manual).
- In the event the battery is deemed to be faulty, does not hold a charge, will not operate the functions of the bed while the bed is unplugged from the wall outlet, or if the battery's case or mounting hardware has been damaged in any way, replace the battery.



**⚠ WARNING**

Faulty batteries should be disposed of according to local laws and regulations. Lead Acid batteries are completely recyclable.



**⚠ WARNING**

Do not expose the battery to heat. Keep away from flames and sparks



**⚠ WARNING**

Potential hazards that can result in personal injury or loss of life in addition to equipment damage can occur if battery is replaced with other than approved Carroll Hospital Group parts



**⚠ DANGER**

Lead-acid batteries can be hazardous to your health. Do not open the battery, avoid contact with internal components. Internal components are Oxide lead and electrolyte. Short-term exposure – Sulphuric acid may cause irritation of eyes, nose and throat. Prolonged contact may cause severe burns. Long term exposure – repeated contact causes irritation and skin burns. Repeated exposure to mist may cause erosion of teeth, chronic eye irritation and/or chronic inflammation of the nose, throat, and bronchial tubes.

In the event a person is exposed to sulphuric acid, flush contacted area with large amounts of water for at least 15 minutes. Remove contaminated clothing and obtain medical attention if necessary. Eye wash and emergency shower should be readily available. If swallowed, give large amounts of water. DO NOT induce vomiting, obtain medical treatment.



**⚠ DANGER**

If a sulphuric acid spill is found under the bed, dilute the spill cautiously with five to six volumes of water and gradually neutralize with sodium bicarbonate, soda ash or lime. When exposure level is not known, wear NIOSH approved positive pressure self-contained breathing apparatus. Reference North American Emergency Response Guidebook #154. Be sure to wear acid resistant gloves, safety glasses, and acid resistant clothing when cleaning a sulphuric acid spill.

## BATTERY INDICATOR

- Located at the foot of the bed, the battery indicator has a small light (LED) that displays the status of the on-board battery. The battery indicator circuit monitors the charge current and the DC voltage coming from both the control box and the battery. The battery indicator has 3 modes of display:

LIGHT OFF – Indicates that the battery is fully charged, that the monitored DC voltage is above 21 Volts, and that the charge current is below 10 mA.

LIGHT ON – Indicates that the bed is operating on battery power, that the mains AC power has been removed, and that the monitored charge current is 0 mA. Check the following:

1. The bed has been unplugged from the wall outlet,
2. No power at the wall outlet, or
3. There is a blown fuse in the control box.

LIGHT FLASHING – Indicates that the battery charge is low. The monitored DC voltage is below 21 volts and that the charge current has not returned to below 10mA after a low voltage was detected. Recharging of the battery is required.

	<p style="text-align: center;"><b>⚠ WARNING</b></p> <p>During a low battery condition bed functionality cannot be guaranteed - The battery must be recharged by plugging the bed into a working wall outlet. The control box recharges the battery only if the battery is connected to the control box AND the bed is plugged into a wall outlet. If the battery does not recharge within 24 hours, replace the battery with a certified Carroll Hospital Group service part.</p>
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## GROUNDING INSTRUCTIONS

This electric bed must be grounded.

In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current, thereby reducing the risk of electric shock.

This product is equipped with a cord having an equipment-grounding conductor and a grounded plug. The plug must be inserted into an appropriate electric outlet that is properly installed and grounded in accordance with all local codes and ordinances.

	<p style="text-align: center;"><b>⚠ DANGER</b></p> <p>Improper connection of the equipment-grounding conductor can result in electrocution. Check with a qualified electrician or service person if you are doubtful that the electrical outlet is properly grounded.</p> <p>DO NOT modify the three prong plug provided. If it will not fit into the electrical outlet, have a proper outlet installed by a qualified electrician.</p>
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## IMPORTANT MECHANICAL SAFEGUARDS

- DO NOT stand on the bed or concentrate weight on the fibreglass deck panels.
- DO NOT use the bed without a mattress at least 6" (152 mm) thick and of recommended dimensions. Refer to Mattress Specifications on page 10.
- DO NOT use without a special mattress specifically designed to bend and conform to the shape of the bed.
- DO NOT use a water filled or gel filled mattress on this bed.
- Ensure that the head board and foot board are properly attached to the frame.

## GENERAL PRECAUTIONS

- Do not use headboards or footboards from other manufacturers.
- Ensure all deck hinges are properly aligned before raising head or knee sections. Refer to MATTRESS DECK REMOVAL on page 34
- All four sections of the composite mattress deck can be detached for thorough cleaning, sanitization, and maintenance

	<b>⚠ WARNING</b>
	This bed is rated to 500 lbs. (227 kg). DO NOT overload the bed. The combined weight of patients, visitors, mattress and bedding must NOT exceed 500 lbs. (227 kg). The maximum load on either side rail is 170 lbs. (77 kg).

	<b>⚠ WARNING</b>
	<p>DO NOT drop the bed.</p> <p>DO NOT allow patients to fall on the bed.</p> <p>DO NOT jump on the bed.</p> <p>Each of the preceding impacts can permanently damage either HILO motor resulting in an inoperable bed.</p> <p>In the case of an inoperable bed due to a damaged HILO motor, replace the HILO motor immediately. If left unattended, a damaged HILO motor could result in patient injury.</p> <p>DO NOT exceed the maximum continuous mode of operation. Refer to Technical Specifications on page 4.</p>

## **MATTRESS SPECIFICATIONS**

A mattress is not included with this bed. It is highly recommended that you use a 35.5" (900 mm) wide mattress that is designed to conform to the bed length of 80" (2032 mm), such as a Carroll Hospital Group TheraMax Mattress. The mattress must be at least 6" (150 mm) in height.

	<p style="text-align: center;"><b>⚠ WARNING</b></p> <p>Possible patient ENTRAPMENT Hazard if using non-specified mattress.</p> <p>Patient entrapment may result in injury or death.</p> <p>Use only a mattress of recommended specifications with this bed.</p>
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## **SPIRIT™ BED OPTIONAL ACCESSORIES**

The Spirit™ Bed comes complete with a standard set of two Assist Rails™, four mattress keepers, and a handheld patient pendant control. Spirit™ Bed Options include:

- 4" (101.60mm) Bed Extension Kit
- Trapeze Adapter
- Bed Exit Alarm
- Full Length or Partial Length Side Rails
- Patient Restraint Loops

## **ULTRA-LOW FEATURE**

The Spirit™ Bed is an ultra-low bed, designed to reduce patient injury due to falls out of bed.

Therefore, in an effort to reduce patient injury, lower the bed completely to the lowest position before leaving a patient unattended.

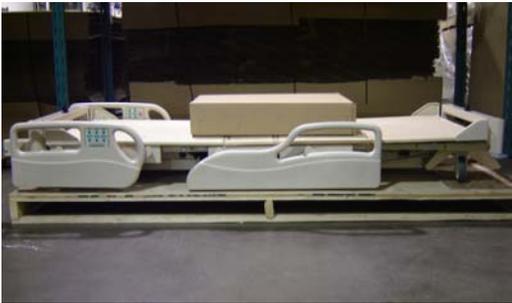
# SECTION 2: INSTALLATION INSTRUCTIONS

## I) UNPACKING INSTRUCTIONS

Upon delivery of the bed, remove all cardboard, crates, or other packaging material. Follow these instructions to unpack and set up the bed.

	<b>⚠ CAUTION</b>
	Equipment DAMAGE may result from improper wire tie removal. Do not cut any trimmed plastic wire ties (see step 2 below). (Trimmed wire ties are permanent features on the Spirit™ bed).

## DELIVERY

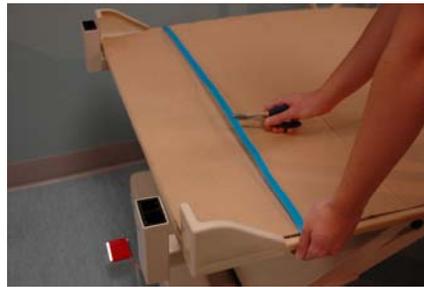
	
* NOTE: If your Spirit™ Bed is shipped standing on-end, use two people to carefully lower it to the floor. DO NOT attempt to lower the bed by yourself. Once the bed is lowered, you may begin installation of your Spirit™ Bed.	If your Spirit™ Bed is shipped on a pallet or in a crate, roll the bed onto the floor and begin the installation procedure.

*NOTE: Packaging removed from beds in photos for clarity.*

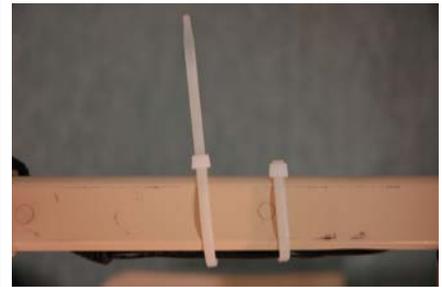
## II. INSTALLATION OF *SPIRIT*<sup>TM</sup> BED



1. Remove the tie wrap around the main power cord bundle. Plug the bed into a properly grounded 120V outlet.



2. Cut the plastic strapping around the head and foot sections of the deck.



3. Cut all untrimmed wire tie wraps.

**DO NOT** cut any trimmed wire tie wraps.



4. Remove any remaining packaging straps or material from siderails, then locate the patient hand control strapped to the side of the bed. Press the HI-LO UP button to raise bed to a comfortable working height.



5. Raise the head section of the bed and connect the battery cable to the open port of the 120V control box. This will ensure the on-board battery remains fully charged and ready for use.



6. Lift the foot-knee deck then cut the wire tie wrap holding the mattress keeper bag, and remove. \* (If your four corner mattress keepers are already installed on each corner of the bed deck, skip to the step 8).



**7. Install four Corner Mattress Keepers:**  
(see page 18 for details)



**8. Install your siderails:**  
For details on installing Assist Rails<sup>TM</sup>, Partial-length or Full-length rails, see page 19



9. Unpack the headboard and footboard from their separate packaging box.



10. Place the headboard into the bracket assembly at the head end of the bed. Ensure that the posts face toward the wall.



11. Place the footboard into the bracket assembly at the foot end of the bed. Ensure that the Staff Control Keypad faces out from the bed.



12. Connect the footboard cord using the waterproof connector at the frame of the bed.



13. Fasten the bolts through the holes in both sides of the brackets and posts. This will ensure that the footboard is not accidentally removed before the footboard cord is disconnected.



14. Initialize the bed for use: Lower the bed using the patient control, and once the lower limit is reached continue to hold the DOWN button for an additional 10 seconds (this process will synchronize the motors so that the bed will perform properly over time).



15. The standard Spirit™ bed is now ready for use.

### III. INSTALLING THE CORNER MATTRESS KEEPERS

**NOTE:**

There are two left side and two right side Corner Mattress Keepers. Depending on how your bed was shipped, the Mattress Keepers may need to be installed on the bed. When assembling, ensure that the tapered sides run along the sides of the bed. See DIA 1 and 2.

Align mattress keeper square holes with the moulded holes in the head end and foot end deck sections.

Press a 1/4-20 X 5/8 long carriage bolt through the top of the mattress keeper hole.



DIA 1



DIA 2



**CAUTION**

DAMAGE to deck may occur.

Over-tight fasteners could cause the deck to crack.

Do not over-tighten the mattress keeper hardware.

Lift the deck upright, then tighten, from below, a 1/4-20 hex nut using a 7/16 wrench or socket wrench.

Repeat for the second hole and the remaining three Mattress Keepers.



DIA 3



DIA 4

All mattress keeper fasteners are included in a clear plastic hardware bag inside the mattress keeper bag at the foot end of the bed. See step 6 from previous section.

## IV. INSTALLING THE SIDERAILS

Your Carroll Hospital Group Spirit™ bed may be equipped with one of the following three siderail options:

- a) Partial-Length Non-Tuck Rail
- b) Full-length Non-Tuck Rail
- c) Assist Rails™

### a) Partial-Length Non-Tuck Rail and b) Full-Length Non-Tuck Rail

All of Carroll's Non-Tuck Rails (Partial- and Full-length) are pre-installed at the factory. They are held in place, for shipping purposes, with tape and plastic strapping.

		
<p style="text-align: center;">DIA 5</p> <p>Cut and remove the wire ties around the foam</p>	<p style="text-align: center;">DIA 6</p> <p>Cut and remove the filament tape around the rails.</p>	<p style="text-align: center;">DIA 7</p> <p>The rails can now be raised from the stored position.</p>

### c) Assist Rails™

Carroll's Assist Rails™ are packaged separately from the bed in the Assist Rail™ box. Remove the rails and fit them to the main rails on either side of the bed.

	<p style="text-align: center;"><b>⚠ WARNING</b></p> <p>FDA Rail Guidelines specify a minimum distance between the rail and the head board. To comply with the guideline, the Assist Rail™ bracket must be mounted in the correct mounting holes on the main rail. When mounted correctly, the distance between the Assist Rail™ and the headboard will be 13-¼" (336.5mm) when the rail is in the "Assist" position and 28" (711mm) when the rail is in the "Guard" position (refer to DIA 9).</p> <p>Failure to mount the Assist Rail™ correctly may result in patient entrapment.</p>
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## ⚠ WARNING

Never install two Assist Rails™ on the same side of the bed. The Assist Rail™ must be used alone (one on either side) or a serious patient entrapment hazard could result.

The left-side and right-side Carroll Assist Rails™ must be installed on the intended side of the bed. They are not interchangeable.

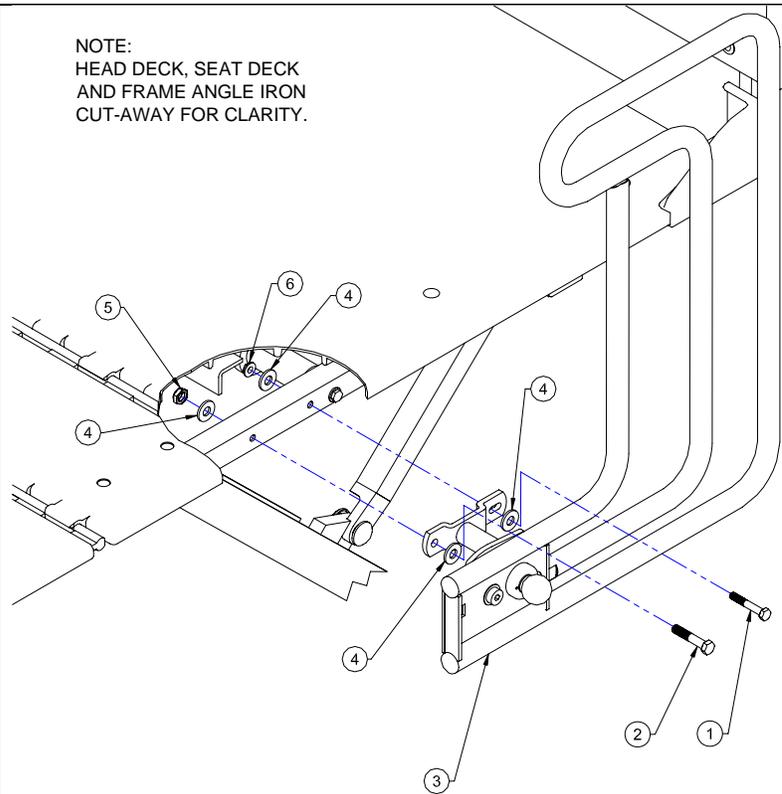
### Mounting the Assist Rail™

The release knob always faces outward and the bend in the rail points either up, in the “assist” position, or toward the foot of the bed in the “guard” position. See DIA 9.

### Assist Rail Mounting

1. Mounting holes on the main rail are below the deck. See DIA 8 Rail shown in ‘Assist’ position.
2. Place one 3/8 Flat washer (item 4) on the 3/8-16 X 2" long hex bolt (item 2) and push this from outside the bracket, through the mounting hole in the main rail. Place another 3/8 washer over the bolt on the inside main rail mounting hole then secure with a 3/8-16 jam nut. Use two 9/16" wrenches to tighten the bolt while holding the nut.
3. Place one 3/8 Flat washer (item 4) on the 5/16-18 X 2" long hex bolt (item 1) and push this from outside the bracket, through the mounting hole in the main rail. Place another 3/8 washer over the bolt on the inside main rail mounting hole then secure with a 5/16-18 flange nut. Tighten with two 1/2" wrenches.

NOTE:  
HEAD DECK, SEAT DECK  
AND FRAME ANGLE IRON  
CUT-AWAY FOR CLARITY.



DIA 8

4. Repeat the installation for the opposite side Assist Rail™.

No	Description	Part Number	Qty
1	Hex Bolt 5/16-18 X 2 Long	BLT516-2P	2
2	Hex Bolt 3/8-16 X 2 Long	BLT382-P	2
3	Assist Rail™ Side Mount - Left Side (Not Shown) Assist Rail™ Side Mount - Right Side (Shown)	RL3-010-26-1 RR3-010-26-1	1 1
4	Flat Washer for 3/8 Bolt	WSR38U-SS	8
5	Locking Jam Nut 3/8-16	NUT38N-L	2
6	Flange Nut 5/16-18	NUT516-FL	2

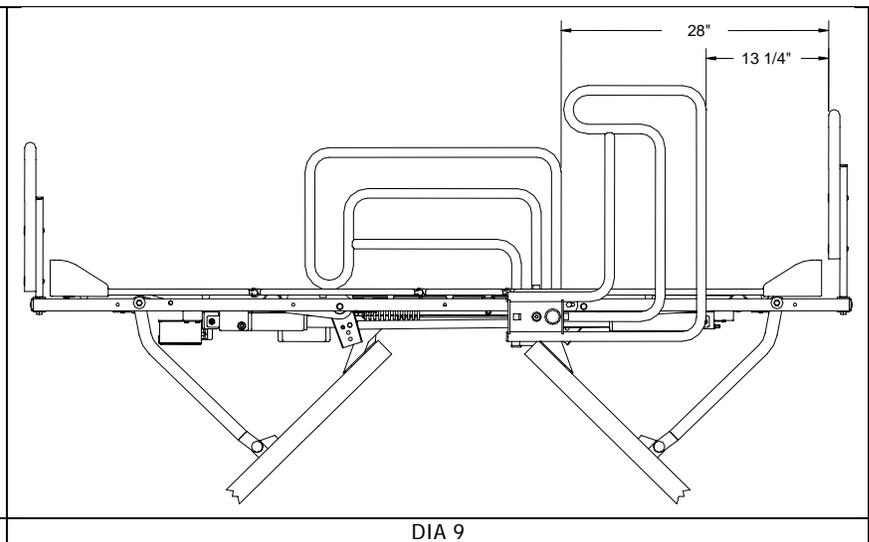


*NOTE: Raising the head deck section will allow for better access when mounting the Assist Rail™ to the bed frame.*

When installed properly, the space between Assist Rail™ and Headboard should be as follows:

**In Assist Position (up):** 13 ¼"  
(336.5mm)  
**In Guard Position (down):** 28"  
(711mm)

The bracket mounting point will become the pivot point that is fixed on the main rail, enabling the Assist Rail™ to rotate from the 'Guard' to 'Assist' to 'Transfer' position. See DIA 9.



# SECTION 3: BED OPERATION

## I) CENTRAL LOCK AND STEER SYSTEM

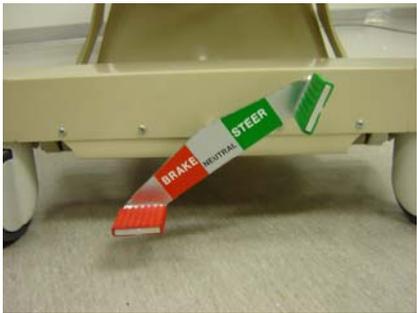


### **! WARNING**

Unintended bed movement may occur if bed is left in either of the mobilized positions, "STEER" or "NEUTRAL".

Never leave the bed unattended in either the "STEER" or "NEUTRAL" positions.

Do not move the bed until the mobilization system has been activated.

Mode	Function	Pedal Position
<p><b>Lock</b></p> <p><i>Typical mode used to stabilize the bed from shifting. This mode prevents the bed from moving forward, backward or sideways.</i></p>	<p>Casters <b>DO NOT</b> swivel or roll</p>	 <p>DIA 10</p>
<p><b>Steer</b></p> <p><i>Mode used when attempting to steer the bed in a desired direction. All caster wheels can still rotate, enabling the bed to move forward or backward.</i></p>	<p>Two head end casters swivel; Two foot end casters <b>DO NOT</b> swivel; All casters roll</p>	 <p>DIA 11</p>
<p><b>Neutral</b></p> <p><i>Mode used only to manoeuvre the bed in a tight area This mode allows the bed to move forward, backward or sideways.</i></p>	<p>All casters swivel and roll</p>	 <p>DIA 12</p>

## a) Mobilization

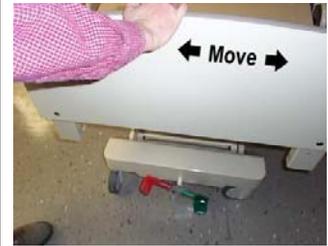
The bed is mobile in either the "NEUTRAL" or "STEER" modes. Use either of these modes depending on the situation, when bed mobility is needed.

### Activate Steer Mode

1. Fully depress the right side of the Central Lock & Steer pedal at either end of the bed. See DIA 13.
2. Slide the bed sideways, in a back and forth motion, at the foot end of the bed until the steering casters are engaged. See DIA 14.



DIA 13



DIA 14

#### **NOTE:**

When the "NEUTRAL" mode is activated properly, the bed should move freely without any unusual noises. If any clicking noises are present in the neutral mode, stop and check that the pedal is level. Adjust, if necessary.

### Activate Neutral Mode

1. Press or lift the pedal with your foot until the pedal is level.



DIA 15

## b) Stabilization

The bed is stable in the "LOCK" mode. Use this mode whenever the bed is left unattended or when the bed needs to remain stable.

### Activate Lock Mode

1. Fully depress the left side of the Central Lock & Steer pedal at either end of the bed. See DIA 16.



DIA 16

## II) BED FUNCTIONS

Depending on the Spirit™ Bed you purchased, you will have two or three methods for controlling the bed's functions.

i) Patient Hand Control	ii) Footboard Staff Control Panel	
Standard on Spirit™ beds	Standard on Spirit™ Beds	

### a) Patient Hand Control (DIA 17)

**i) Storage** - Pendant may be stored in the holster provided (DIA 18), or secured to the bedding with the spring loaded linen clip (DIA 19).

		
DIA 17 – Patient Hand Control and connector (not connected)	DIA 18 - Clip the holster between the side rail bars on the outside of the bed. The Hand Control slips into the holster for easy access	DIA 19 – Secured to linens with linen clip

### ii) Connection

	<h3 style="margin: 0;">⚠ WARNING</h3> <p>Electric SHOCK hazard when working on the electrical components.</p> <p>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.</p> <p>Full capacitor discharge can be achieved by sequentially depressing the 'Up' and 'Down' buttons on the pendant at least 20 times, after main electrical power to the control box is cut.</p>
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The Hand Control can be located on either side of the bed, just beneath the seat deck panel. To move the hand control to the opposite side of the bed, first, unscrew the fluid-proof seal, then disconnect the jack. Reconnect the hand control cable to the existing port on the other side of the bed. See DIA 20 and 21.



DIA 20



DIA 21

## **b) Bed Positioning**

### **i) Bed Elevation – HI-LO Function**

<p>To raise the bed, press the BED UP arrow on either the Staff Control Pad, or on the patient hand control. See DIA 22, 23. Release the button when the desired level is reached. See DIA 24</p>	 <p>DIA 22</p>	 <p>DIA 23</p>	 <p>DIA 24</p>
<p>To lower the bed, press the BED DOWN arrow on either the Staff Control Pad, or on the patient hand control. See DIA 25, 26. Release the button when the desired level is reached. See DIA 27</p>	 <p>DIA 25</p>	 <p>DIA 26</p>	 <p>DIA 27</p>

### **ii) Head Elevation - Head Motor Function**

<p>To raise the head section of the bed, press the HEAD UP arrow on either the Staff Control Pad, or on the patient hand control. See DIA 28, 29. Release the button when the desired level is reached (DIA 30).</p>	 <p>DIA 28</p>	 <p>DIA 29</p>	 <p>DIA 30</p>
<p>To lower the head section of the bed, press the HEAD DOWN arrow on either the Staff Control Pad, or on the patient hand control. See DIA 31, 32. Release the button when the desired level is reached (DIA 33).</p>	 <p>DIA 31</p>	 <p>DIA 32</p>	 <p>DIA 33</p>

### **iii) Knee Elevation - Foot Motor Function**

<p>To raise the knee section of the bed, press the KNEE UP arrow on either the Staff Control Pad, or on the patient hand control. See DIA 34, 35. Release the button when the desired level is reached (DIA 36).</p>	 <p>DIA 34</p>	 <p>DIA 45</p>	 <p>DIA 36</p>
<p>To lower the knee section of the bed, press the KNEE DOWN arrow on either the Staff Control Pad, or on the patient hand control. See DIA 37, 38. Release the button when the desired level is reached (DIA 39).</p>	 <p>DIA 37</p>	 <p>DIA 38</p>	 <p>DIA 39</p>

## iv) Auto Contour

### Activate Auto Contour

In order to prevent patients from sliding towards the footboard as the head section is elevated, it may be beneficial to use the Auto Contour function. This function will automatically raise/lower the knee section whenever the head section is raised or lowered (DIA 46). To activate Auto Contour, simply press the CONTOUR button at the bottom right corner of the Staff Control Pad (DIA 47). When the green light is illuminated, the Auto Contour function is active.



DIA 46



DIA 47

## c) Staff and Emergency Functions

### i) Trendelenburg and Reverse Trendelenburg Operation



#### ⚠ CAUTION

Patient discomfort may result from normal operation of the Trendelenburg and Reverse Trendelenburg function.

Trendelenburg and Reverse Trendelenburg modes should only be used on the advice of a medical practitioner.



#### ⚠ WARNING

The Spirit™ bed may shift during Trendelenburg or Reverse Trendelenburg activation.

Trendelenburg or Reverse Trendelenburg must be operated ONLY after the bed has been stabilized in the Central Lock & Steer LOCK position.

### Activate Trendelenburg Mode

1. Press and hold the **TREND** button on the attendant control pad. Release the button once the desired bed angle between 0° and 15° is reached. See DIA 48 and 49.
2. To return the bed to level, press and hold the **rev. TREND** button until the bed automatically stops.



DIA 48



DIA 49

### Activate Reverse Trendelenburg Mode

1. Press and hold the **rev. TREND** button on the attendant control pad. Release the button once the desired bed angle between 0° and 13° is reached. See DIA 50 and 51.
2. To return the bed to level, press and hold the **TREND** button until the bed automatically stops.



DIA 50



DIA 51

## ii) Chair Mode

The "Chair" function allows patient to be placed in an upright position.

	<b>⚠ WARNING</b>
	Chair mode must be operated ONLY after the Central Lock & Steer pedal has been put in the LOCK position.

### Activate Chair Mode

Press and hold the CHAIR button on the attendant control pad (DIA 52). Release the button once the chair configuration is reached (bed will stop automatically) See DIA 53. The green 'Chair' light will illuminate once the proper Reverse Trendelenburg angle has been achieved.

To deactivate the Chair Mode, press and hold the CHAIR button until the bed is flat. The bed will stop automatically.



DIA 52



DIA 53

## iii) CPR (Cardiopulmonary Resuscitation) Mode

	<b>⚠ CAUTION</b>
	Improper use of CPR mode may cause patient injury. Once activated, CPR function will lower head and knee sections to flat position automatically. To interrupt CPR function, touch any other button on the keypad.

Activation of the CPR control allows one-touch flattening of all bed surfaces.

### Activate CPR Mode

Press the CPR button on the attendant control pad one time. The head section and knee section will lower to flat position. See DIA 54 and 55.

The CPR mode does not need deactivation. Simply resume head and knee-foot operation once the CPR action is complete.

To interrupt the CPR mode, touch any other function on the keypad.



DIA 54



DIA 55

## v) Patient Lockouts

### Activate Individual Function Lockouts

Patient lock-out restricts the patient from activating various bed features via the hand control pendant. The degree of restriction depends on the lock out option selected.

Staff may choose to lock patient access to one, two, or all three bed functions. To restrict a function, press the "patient lock" button under that particular function (see DIA 59). The lock icon will illuminate when the function is locked-out for the patient. To unlock, press the same button again. When the light is not illuminated, the patient has access to that function.

*NOTE: When patient functions have been locked, the Staff Footboard Control Pad remains active.*



DIA 59

### Activate Total Lock-out

To completely restrict access to all bed functions from all control points (staff and patient controls), use the Total Lock-out function.

Press and hold all three lock-out buttons at the same time (DIA 60). All functions on the Staff Footboard Control Pad and all patient controls are unavailable. Total Lock-out is active when all three lock-out buttons flash sequentially.

To deactivate the Total Lock-out feature, repeat the process by pressing and holding all three lock-out buttons at the same time.



DIA 60

**⚠️ WARNING** When left unattended, the bed should be lowered to its lowest position with the "Bed Elevation" function locked-out in order to reduce the risk of patient injury.

## III) SIDERAIL OPERATION

All Carroll side rails comply to FDA guidelines concerning rail entrapment. With proper monitoring and the right health care bed, bed-rail entrapment can be prevented. For further information, refer to the FDA's website at <http://www.fda.gov/cdrh/beds/>

### a) Partial-length or Full-length Rails (Non-Tuckable Rails)

#### Move Side Rail From DOWN to UP position

Gently lift the rail to the UP position (DIA 61). The rail will first arc toward the foot end of the bed then the head end of the bed as it moves to the UP position. An audible "click" can be heard when the UP position is reached and the rail is locked in place.



#### Move Side Rail From UP to DOWN position

Pull the release knob toward you (DIA 62), then gently push down on the side rail. The rail will first arc toward the foot end then the head end as it moves to the DOWN position (DIA 63). The rail will not lock in the DOWN position.

### b) Assist Rails™

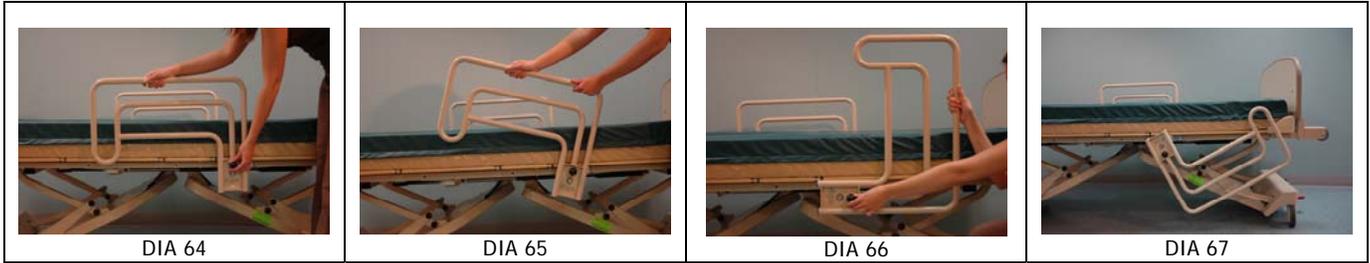
It is important that caregivers know how to operate the Assist Rails™ safely. Assist Rails™ lock in two positions and allow patient transfer in a third unlocked position:

#### i) Operation of the Standard Assist Rail™

	<p style="text-align: center;"><b>⚠ WARNING</b></p> <p>Do not leave patient unattended when the Assist Rail™ is in the transfer position.</p> <p>Once transfer is complete, return the Assist Rail™ to either locking positions, GUARD or ASSIST</p>
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In the "Guard" position, the Assist Rail™ provides support and a subtle reminder of the bed edge location. In the "Assist" position, the patient is aided in entering and exiting the bed. The "Transfer" position can be used to move the rail out of the way.

## Change Assist Rail™ From "Guard" to "Assist" to "Transfer"



1. Pull the release knob at the bottom of the rail and rotate the rail around the pivot point. See DIA 64.
2. As soon as the rotation begins, you may let go of the pull knob. See DIA 65.
3. Continue to rotate the assist rail until it 'clicks' into the ASSIST position. See DIA 66. To change position back to GUARD or forward into TRANSFER, pull the release knob as shown in DIA 66, and rotate the rail as desired.
4. In the TRANSFER (DIA 67) position, the rail will not lock.

# **SECTION 4: CARE AND MAINTENANCE**

## **I) REGULAR MAINTENANCE, CLEANING, AND STORAGE**

Very little maintenance is required to keep the Spirit™ Bed and rails in good working order.

	<b>⚠ CAUTION</b>
	Equipment or property DAMAGE or resident INJURY may occur if the following points are not followed DO NOT use solvents, alcohol or petroleum products on the surface. DO NOT submerge the bed frame or electrical parts. DO NOT allow liquids to enter electrical components. DO NOT Steam Clean or Pressure Wash.

### **Sanitizing Method**

All surfaces may be cleaned with:

- soapy water or
- any common consumer disinfecting product, or
- most non-abrasive commercially available disinfecting products.

### **Semi Annual Maintenance**

- Unplug the bed from the wall outlet and perform all bed functions from the pendant, side rails, and foot board controls to test for and verify battery function.

### **Yearly Maintenance**

- Inspect for damaged or loose wiring. Have a qualified electrician replace any frayed or damaged cords.
- Inspect for secure grounding.
- Ensure that the rails engage and lock as specified.
- Tighten, adjust or replace any parts or bolts etc. that are loose or show signs of wear.
- If epoxy coated rails become scratched or chipped, use a matching enamel touch up paint. (Refer to IV) COLOR Information on page 30 for paint specifications).
- There is no greasing or oiling required for the Spirit™ Bed

### **Storage & Transportation**

- When storing the Spirit™ Bed for an extended period of time, ensure the power cable for the rechargeable battery is disconnected from the control box under the head section of the bed.

- The Spirit™ Bed should be stored and/or transported in a clean and dry environment with an ambient temperature range between -40° and 70° Celsius (-40° to 158° F). Relative humidity should be from 10% to 95% non-condensing, and atmospheric pressure should be between 50 to 106 kPa.
- Do not re-use any original packaging material to transport the bed. Transport the bed by rolling the bed on its casters. Ensure the Central Lock & Steer system is in the “BRAKE” position once the bed is loaded onto another vehicle. Use additional strapping or tie downs as necessary to ensure the bed does not move while in transport.

## Normal Operating Conditions

- Normal Operating Conditions of the Spirit™ bed should be within an ambient temperature range between 15° and 30° Celcius (59° and 86° F), a relative humidity of 20-80% non-condensing, and an atmospheric pressure of 70-106 kPa.

## II) MATTRESS DECK REMOVAL

All four sections of the composite mattress deck can be detached for thorough cleaning, sanitization, and maintenance.

### a) Deck Removal - Foot Deck

1. Lift the foot and knee decks together until the angle between them is 90°. See DIA 68.
2. Lift the foot deck away from the knee deck at the hinge, to separate the decks. See DIA 69.
3. Disengage the metal foot ‘bale’ from the mounting holes. See DIA 70.



DIA 68



DIA 69



DIA 70

### b) Deck Removal - Knee Deck

Once the foot deck is removed, the knee deck can be separated from the stationary seat deck. Lift the knee until it is at 90° to the seat deck. See DIA 71. Using a horizontal force, strike the knee deck near the hinge to separate the decks. See DIA 72.



DIA 71



DIA 72

### **c) Deck Removal - Head Deck**

Lift the head deck until it is at a 90-degree angle to the stationary (bolted) seat section deck. See DIA 73. The head deck can now be lifted straight up, detaching it from bed. See DIA 74.



DIA 73



DIA 74

### **d) Deck Removal - Seat Deck**

The seat panel is attached to the bed frame with two bolt and nut fasteners. Although it is not designed for routine removal, it can be removed, if necessary, using a 1/2" wrench.

Unscrew the hex nut from the carriage bolt beneath the main rail. See DIA 75. Repeat for the opposite side, being careful to save the fasteners. The seat deck can now be lifted off the frame. See DIA 76.



DIA 75



DIA 76

#### **NOTE:**

When reinstalling any deck section, make sure that all hinges are completely engaged.

Check for engagement by gently moving the deck up and down.

The deck should swing freely without binding.

### III) BEFORE CALLING THE FACTORY

To ensure prompt and accurate attention to your concerns please have the following information available before you call:

Your facility's <b>phone number:</b> <i>(Where you can be reached):</i>	
Your facility's <b>fax number</b> <i>(If Available):</i>	
Bed(s) <b>Model and Type:</b>	
Bed(s) <b>Serial Number</b>	
Date of Purchase:	
List of <b>defective part(s)</b> <i>(Identify by part number, or describe relative to nearest numbered part):</i>	
List of deficiencies or <b>Type of problem:</b>	

NOTE: Left/right determination is made from the patient's point of view while lying in the bed face up.

If you have carefully followed all of these instructions, you should have many years of trouble free service. If you're not 100% satisfied with your bed, please call your sales representative or the factory immediately. It's always better to ask if you have any questions such as hole drilling locations in head and foot boards, electrical service or modifications, or any minor damage that could lead to more serious consequences.

If you require further information regarding circuit diagrams, component part lists, descriptions etc. please call the number below.

Call Carroll Hospital Group Inc. at (519) 963-4010 or Toll Free 1-866-516-5446.

Mailing Address: 825 Bradley Ave, London, Ontario, CANADA, N6E 13C2.

### IV) COLOR INFORMATION

1. Touch up paint Sherwin Williams Auto #35-30041 – Cream.
2. Headboard/Footboard color options for standard Spirit Bed:
  - i) Almond
  - ii) Solar Oak
  - iii) Kensington Maple (previously Honey Maple)
  - iv) Monticello Maple (previously Caramel Cherry)
  - v) African Walnut (previously Regal Mahogany)

## V) SPIRIT™ BED TROUBLESHOOTING GUIDE

\* **NOTICE:** Prior to using the Troubleshooting Guide, perform a brief function test on the bed. Check all functions on both the footboard control panel and the patient control to determine which functions are/are not working.

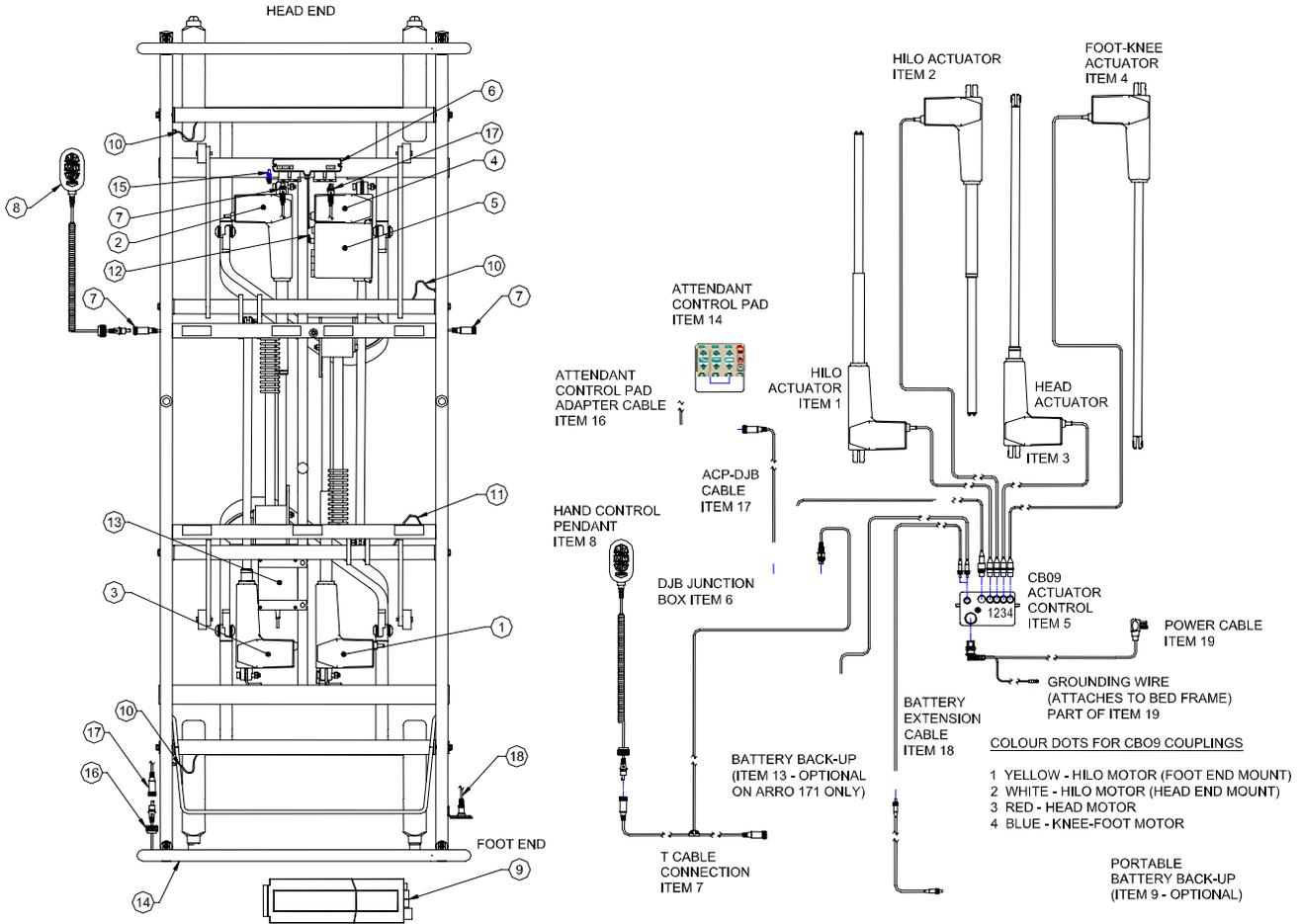
PROBLEM / FAILURE	RECOMMENDED ACTION
No functions working on bed	<ol style="list-style-type: none"> <li>1. Check to ensure bed is plugged in.</li> <li>2. Check wall outlet for power.</li> <li>3. Check <i>Battery Indicator</i> status at the foot of the bed.</li> <li>4. Lift head deck section and remove control box cover; check for green power light (LED). If no light, replace control box.</li> <li>5. Check 'Master Lockout'; hold all three lockout buttons at same time to lock/unlock, then try bed functions</li> <li>6. Call for Technical Assistance</li> </ol>
Patient Controls working properly, Footboard Staff Control Pad not working	<ol style="list-style-type: none"> <li>1. Check cable connection under lower left side of footboard</li> <li>2. Check "Footboard Control" cable connection into DJB Box under head section</li> <li>3. Replace footboard control</li> </ol>
Footboard Staff Control Pad working properly, Patient Handheld Control not working	<ol style="list-style-type: none"> <li>1. Check lockout buttons on footboard; orange light on "lock" button prevents the patient control from being used</li> <li>2. Check cable connection from hand control to port on bed frame</li> <li>3. Check "Pendant" connection into DJB Box under head section</li> <li>4. Unplug hand control from current port and plug into port on opposite side of bed; if hand control works in new port, replace DJB Box and T-Cable; if hand control does not work in new port, move to next step</li> <li>5. Test hand control on a properly functioning bed (if available); if hand control works, replace DJB Box and T-Cable; if hand control doesn't work, replace hand control</li> </ol>
Only some functions working on the patient control	<ol style="list-style-type: none"> <li>1. Some functions may be locked out; check lockout buttons on footboard; orange light on "lock" button prevents the patient control from being used</li> <li>2. Check cable connection from patient control to port on bed frame</li> <li>3. Check "Pendant" connection into DJB Box under head section</li> <li>4. Replace Hand Control</li> </ol>

<p>Bed will not lower all the way</p>	<ol style="list-style-type: none"> <li>1. Check to see if the "Bed" Up/Down function is locked out on the footboard</li> <li>2. Check to see if bed is in Trendelenburg or Reverse Trendelenburg angle (for patient safety, bed maintains whatever angle is established by staff as the bed is raised and lowered – if the is in Trend/Reverse Trend, it will not lower past its Trendelenburg limit of 15" deck height); if the bed is angled, level bed by pressing opposite 'Trend' function (bed will automatically stop at level position).</li> </ol> <p><i>Hint: A slight Trendelenburg or Reverse Trendelenburg angle may not be easily visible. If the bed appears 'stuck' at approximately 15", briefly press and hold the 'Trend' button to achieve a slight bed angle, then hold the 'rev Trend' button until the bed automatically stops at level. Then, lower the bed.</i></p>

# VI) SCHEMATIC DRAWINGS

## SPIRIT™ WIRING SCHEMATIC

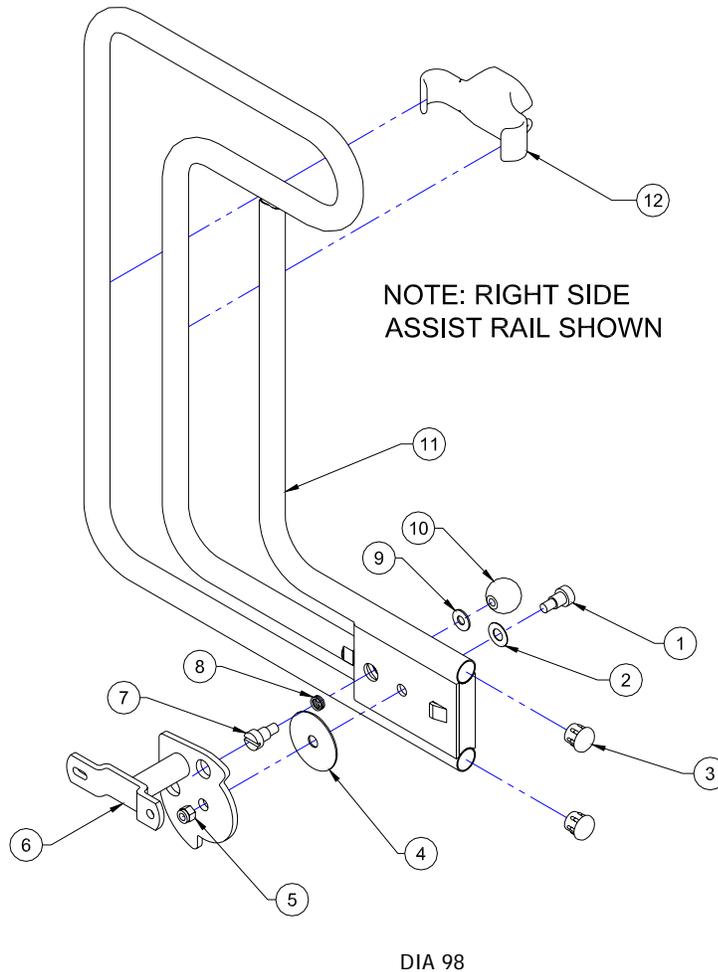
NOTE: DECK PANELS AND URINE GUARD NOT SHOWN FOR CLARITY.



DIA 104

Ref	Description	Part No.	Qty
1	Bed HILO Actuator (motor - mounted at the foot end of the bed)	MTRM25-474	1
2	Bed HILO Actuator (motor - mounted at the head end of the bed)	MTRM25-473	1
3	Head Section Actuator	MTRM25-03	1
4	Knee-Foot Section Actuator	MTRM25-02	1
5	CB09 Spirit 120V Control Box	JNCTND-C1F	1
6	CB9PS DJB Switch Box	JNCTND-C35	1
7	10P10C to DIN-T Cable	JNCTND-C34	1
8	Six Function Hand Pendant with 10 Pole Modular Plug Connection	PNDNT6-FNC-I1	1
9	Portable Battery Back-up (Optional)	KITARR-O	1
10	Ground Wire 4.75" (120.65mm) long c/w (2X) #10 X 1/2 long TEK Screw and (2X) #10 Star Washer	JNCTNG-RND-04-34 c/w (2X) TEKSCR-HX#-10-12 and (2X) WSRSTA-R10	3
11	Ground Wire 7.75" (196.85mm) long c/w (2X) #10 X 1/2 long TEK Screw and (2X) #10 Star Washer	JNCTNG-RND-07-34 c/w (2X) TEKSCR-HX#-10-12 and (2X) WSRSTA-R10	1
12	Ground Wire 14.0" (355.60mm) long c/w #10 X 1/2 long TEK Screw and #10 Star Washer	JNCTNG-RND-14 c/w TEKSCR-HX#-10-12 and WSRSTA-R10	1
13	Battery Back-up	BA1800	1
14	Attendant Control Keypad	JNCTND-C20-B2	1
15	Plug for Panel Receptacle c/w Coloured Washer for Panel Recept. and Serrated Lock Washer for Panel Recept. and Nut for Panel Recept.	JNCTND-CTR-PL-UG c/w JNCTND-CTR-CW-SR and JNCTND-CTR-LW-SR and JNCTND-CTR-NU-T	1
16	Adapter Cable Blk 4P4C RJ11-10P4C	JNCTND-C32	1
17	10P4C To DIN Cable	JNCTND-C33	1
18	Battery Extension Cable (151 ONLY)	JNCTND-C31 (151 ONLY)	1
19	Removable CB09 Power Cord (120V) with 12 Inch (304.80mm) Ground Wire	JNCTND-CCO-RD-S	1

# ASSIST RAIL™ ASSEMBLY



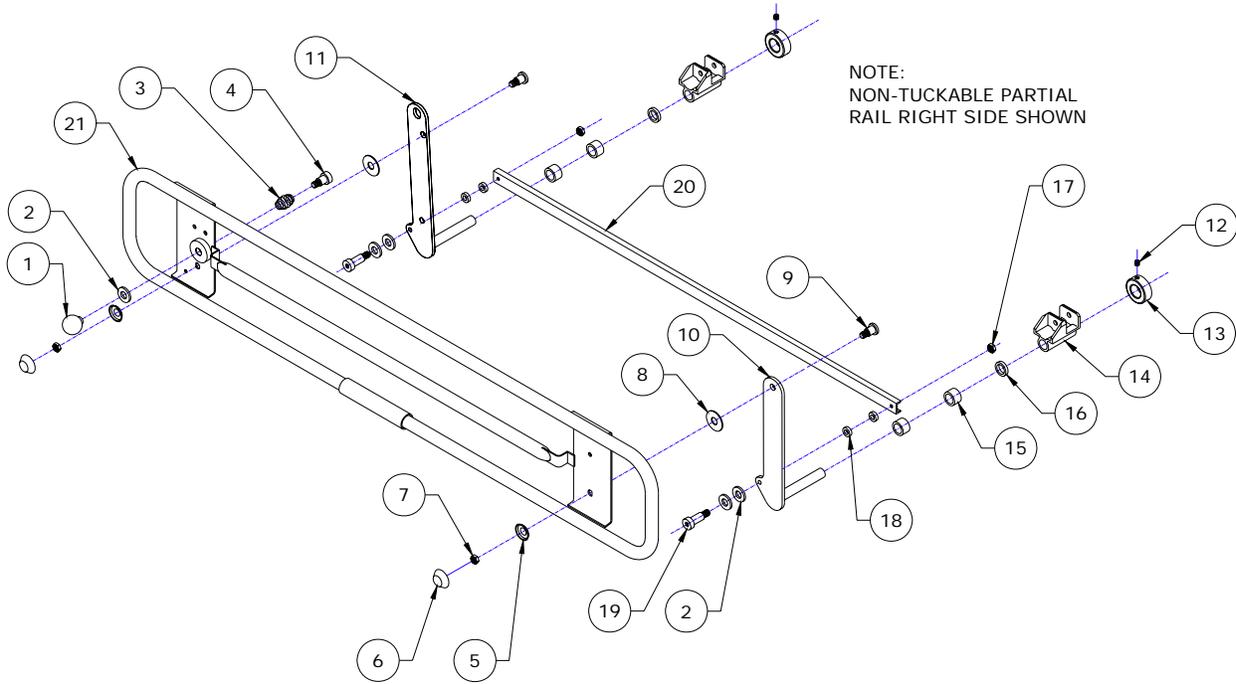
## Full Assemblies:

Ref	Description	Part No.	Qty
n/a	Fully Assembled Assist Rail™ Pair - Left & Right Side	RAILSE-T01-02-6A	-

## Components:

Ref	Description	Part No.	Qty
1	Socket Shoulder Bolt	BLT121-2SO-CK-SH	1
2	Bellville Washer	WSRBEL-VIL-1	1
3	18 Gauge Plug	PLG1RD-18	2
4	Washer - Nylon 1/2 ID, 2 1/2 OD	WSR122-123-64-N	1
5	3/8 Nylon Lock Nut	NUT38N-L	1
6	Right Side Assist Rail Bracket, Plated (Shown) Left Side Assist Rail Bracket, Plated (Not Shown)	RRBRAC-KAS-SI-ST (Shown) or RLBRAC-KAS-SI-ST (Not Shown)	1
7	Slotted Shoulder Bolt	BLT121-2SL-OT-SH	1
8	Compression Spring	SPRASS-IST	1
9	Washer 3/8 ID X 3/4 OD X 1/16 Thick Nylon	WSR383-411-6N	1
10	Black Ball Knob	LATCH0-002	1
11	Side Mount Spirit Assist Rail™ Member - Right Side (Shown) Side Mount Spirit Assist Rail™ Member - Left Side (Not Shown)	RR1010-26-C (Shown) RL1010-26-C (Not Shown)	1
12	Pendant Holster	PNDNTH-OLS-TE-RS	1

# SPIRIT™ BED - NON TUCKABLE FULL & PARTIAL RAIL ASSEMBLY



NOTE:  
NON-TUCKABLE PARTIAL  
RAIL RIGHT SIDE SHOWN

DIA 99

## Full Assemblies:

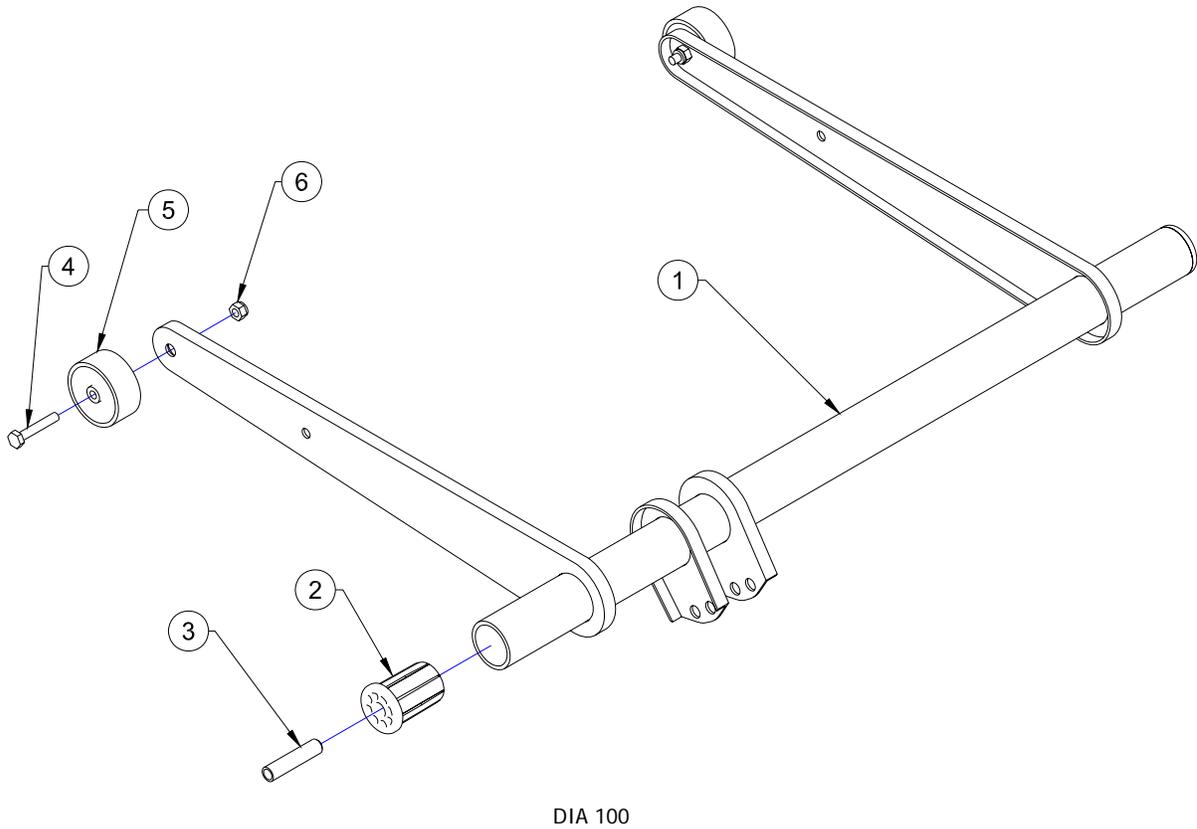
Ref	Description	Part No.	Qty
n/a	Fully Assembled Non-Tuckable Full Rail Pair - Left & Right Side	RAILSE-T01-06-7A	-

## Components:

Ref	Description	Part No.	Qty
1	Black Ball Pull Knob	LATCH0-002	1
2	Nylon Spacer 3/8 X 3/4 X 1/16 Thick	WSR383-411-6N	5
3	Compression Springs	SPRASS-IST	1
4	Slotted Shoulder Bolt 1/2-13 X 1/2 Long	BLT121-2SL-OT-SH	1
5	Steel Washer 3/8 ID	WSRRHW-204	2
6	Plastic Cap RH-20	CAP14R-H20	2
7	Locking Flange Nut 5/16-18	NUT516-FLL	2
8	Nylon Washer 1.46 OD X 0.515 ID X 0.050 Thick	WSRNYL-ONF-LA-T	2
9	Rail Pin 1/2 X 7/8 Plated	RPIN12-78P	2
10	Non-Tuckable Short Rail Arm Welded - Right Side ( <i>Shown</i> ) or Non-Tuckable Short Rail Arm Welded - Left Side ( <i>Not Shown</i> )	SRA001-RA ( <i>Shown</i> ) or SRA001-LA ( <i>Not Shown</i> )	1
11	Non-Tuckable Long Rail Arm Welded - Right Side ( <i>Shown</i> ) or Non-Tuckable Long Rail Arm Welded - Left Side ( <i>Not Shown</i> )	LRA001-RA ( <i>Shown</i> ) or LRA001-LA ( <i>Not Shown</i> )	1
12	Set Screw 5/16-18 NC	SETSCR-516-51-6N	2
13	Locking Set Collar 3/4 ID with 1/4-20 NC Set Screw	COL34R	2
14	Non-Tuckable Side Rail Bracket	RAILBR-ACK-NT	2
15	Nylon Bushing - 3/4 X 1-1/2 Long	WSR341-141-2N	4
16	Nylon Spacer - 3/4 X 1-11/16 Thick	WSR341-116-4N	2
17	5/16-18 Centre Lock Nut	NUT516-L	2
18	Nylon Bushing - 3/8 X 3/4 X 5/16 long	WSR383-451-6N	4
19	Socket Head Shoulder Bolt 3/8-16 X 1 long	BLT381-HSS-B	2
20	Non-Tuckable Partial Rail link Bar ( <i>Shown</i> ) or Non-Tuckable Full Rail link Bar ( <i>Not Shown</i> )	RLNK00-01P-AP-NT ( <i>Shown</i> ) or RLNK00-01F-AP-NT ( <i>Not Shown</i> )	1
21	Partial Rail Welded and Epoxy Painted - Right Side ( <i>Shown</i> ) or Partial Rail Welded and Epoxy Painted - Left Side ( <i>Not Shown</i> ) or Full Rail Welded and Epoxy Painted - Right Side ( <i>Shown</i> ) or Full Rail Welded and Epoxy Painted - Left Side ( <i>Not Shown</i> )	RR1010-52 ( <i>Shown</i> ); or RL1010-52 ( <i>Not Shown</i> ); or RR1010-67 ( <i>Not Shown</i> ); or RL1010-67 ( <i>Not Shown</i> )	1

# SERVICE PART SUB-ASSEMBLIES

## Spirit™ Head Gatch Assembly



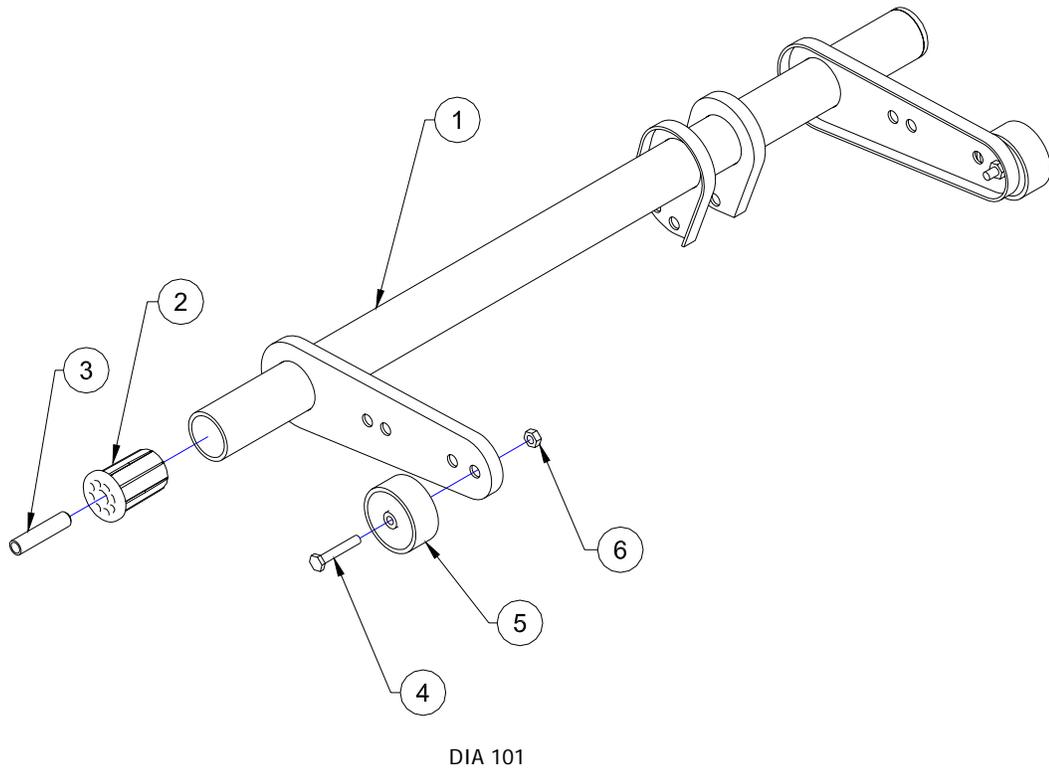
### Full Assembly:

Ref	Description	Part No.	Qty
n/a	Spirit™ Head Gatch Socket Style Assembly with Wheel and Inserts	GATHEA-DAA-SS-Y	-

### Components:

Ref	Description	Part No.	Qty
1	Spirit™ Head Gatch Socket Style Painted (11 GA)	GATHEA-DAP	1
2	Nylon Caster Insert Plug - 11 GA	PLG112-11R-D	2
3	Gatch Pivot Pin	PIN122-516-NC	2
4	Hex Head Bolt 1/4-20 X 1-1/2	BLT141-12	2
5	2" Plastic Wheel	WHL623-4	2
6	1/4-20 Nylon Lock Nut	NUT14L	2

# Spirit™ Foot Gatch Assembly



## Full Assembly:

Ref	Description	Part No.	Qty
n/a	Spirit™ Foot Gatch Socket Style Assembly With Inserts and Fasteners	GATFOO-TAS-SY	-

## Components:

Ref	Description	Part No.	Qty
1	Spirit™ Foot Gatch Socket Style Painted (11 GA)	GATFOO-TAP	1
2	Nylon Caster Insert Plug - 11 GA	PLG112-11R-D	2
3	Gatch Pivot Pin	PIN122-516-NC	2
4	Hex Head Bolt 1/4-20 X 1-1/2	BLT141-12	2
5	2" Plastic Wheel	WHL623-4	2
6	1/4-20 Nylon Lock Nut	NUT14L	2

# Spirit™ Caster and Stem Specifications

Manufacturer: Tente Casters, Inc.

General Information: Steel frame, yellow zinc plated, precision ball bearings in both wheels and swivel head, swivel head welded to the steel frame, housing with synthetic cover  
 Wheel Center: Polyamide  
 Tread: Polyurethane, precision ball bearing

## Specifications:



2044 UAP 150 R36-32S30

Swivel Caster with total or directional lock

**2044 UAP 125 R36-32S 30**

			
mm	mm	mm	mm
125	32	32	50

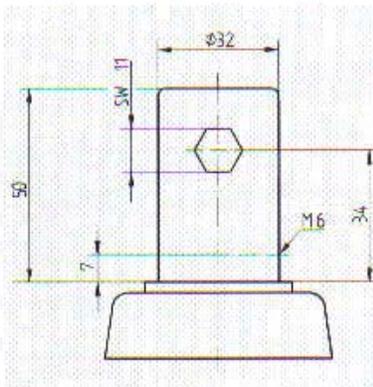


2046 UAP 150 R36-32S30

Swivel Caster with total lock

**2046 UAP 125 R36-32S 30**

			
mm	mm	mm	mm
125	32	32	50



### Fitting R36-32S 30 M6 Standard

Stem designed to fit tubing with inner diameter of 32 mm. Two M6 threaded mounting holes are located in line of travel, 7 mm from top of the caster to the center of mounting hole. Cam hole is positioned 90 degrees from the direction of travel.