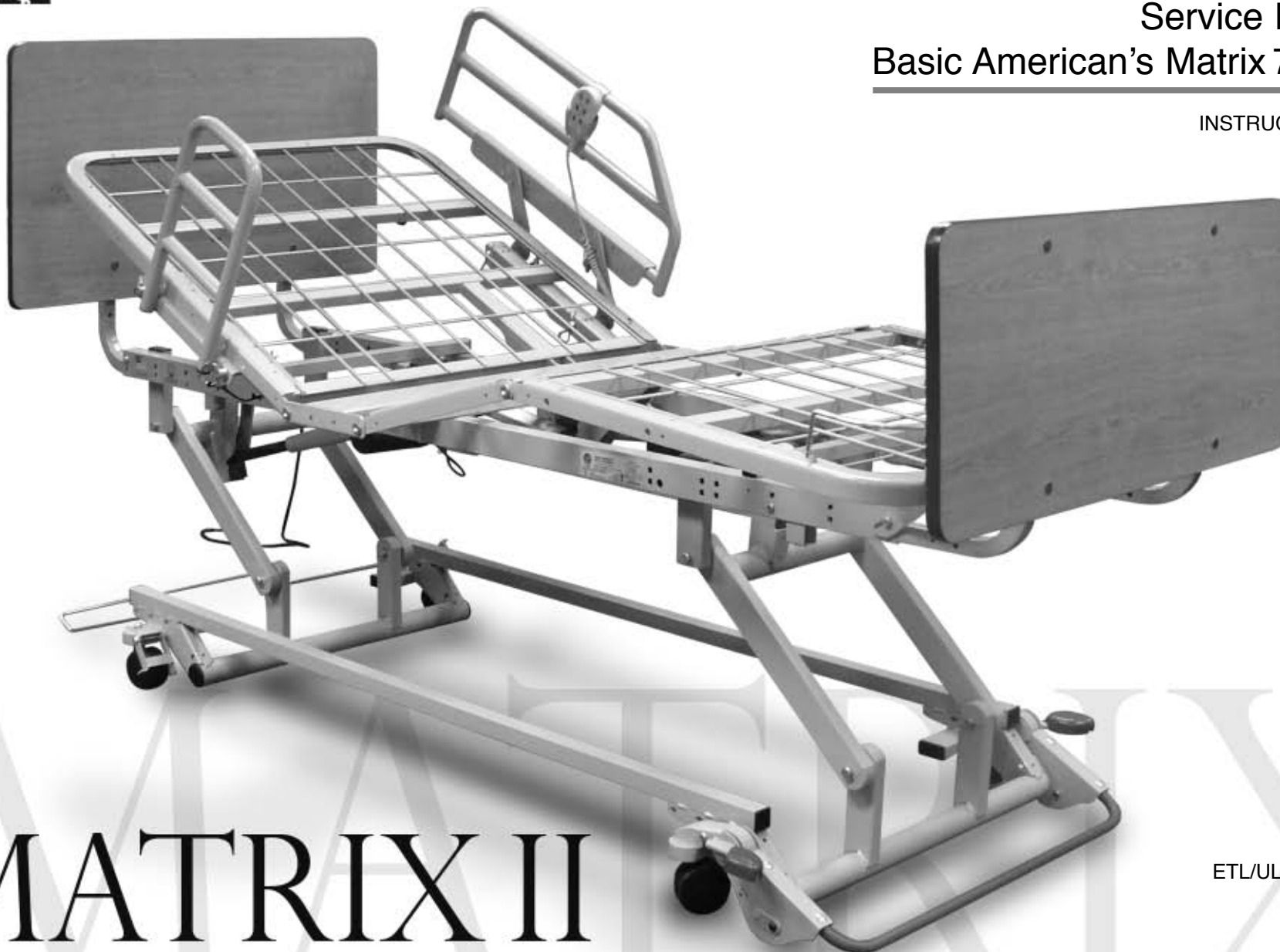




**BASIC AMERICAN MEDICAL PRODUCTS** A GRAHAM-FIELD BRAND

## Service Manual for Basic American's Matrix 709 Series

INSTRUCTIONS FOR USE



# MATRIX II

ETL/UL/CSA APPROVED  
UL 60601-1  
IEC 60601-2-38  
CSA 22.2 601.1



**BASIC AMERICAN MEDICAL  
PRODUCTS**

**Basic American Medical Products**

336 Trowbridge Drive  
Fond du Lac, WI 54937  
www.basicamerican.com

For Matrix II Bed Service Parts please contact our  
Customer Service Department at  
1-800-365-2338

---

**GF Health Products, Inc.**

2935A Northwest Parkway  
Atlanta, GA 30360  
www.grahamfield.com

To order a Matrix II Bed please contact a  
Graham Field Sales Representative at  
1-800-554-9215

**This service manual covers the following Matrix II Models:**

Full-Electric with Standard Caster Carriage: 76" Grid = MP7074; 80" Grid = MP7174; 76" Pan = MP7014; 80" Pan = MP7114

Full-Electric with M-Lok Caster Carriage: 76" Grid = MM7074; 80" Grid = MM7174; 76" Pan = MM7014; 80" Pan = MM7114

Full-Electric with Total Lock Caster Carriage: 76" Grid = MP707404; 80" Grid = MP717404; 76" Pan = MP701404; 80" Pan = MP711404

---

**IMPORTANT NOTICE**

The information contained in this document is subject to change without notice.

Please check all parts for shipping damage and test before using.

In case of damage, DO NOT USE.

# T

# ABLE OF CONTENTS

## **SAFETY INFORMATION AND SPECIFICATIONS**

**SAFETY & WARNING INFORMATION** ..... 1

**ENTRAPMENT COMPLIANCE INFORMATION** ..... 2

**BED FEATURES & SPECIFICATIONS** ..... 3

- Features & Mechanical Dimensions
- Electrical Specifications
- Available Options/Accessories

**BED POSITIONING SPECIFICATIONS** ..... 4

- Maximum High and Low Bed Positions
- Maximum Head/Back Elevation/Angle
- Maximum Knee/Foot Elevation/Angle

## **OPERATING YOUR BED**

**OPERATION - STD. PENDANT/HAND CONTROLLER** ..... 5

- Pendant Diagram and Operational Instructions

**OPERATION - OPT. STAFF/NURSE CONTROL** ..... 6

- Staff Diagram and Operational Instructions

## **BOARD ASSEMBLY & MISC. FEATURES**

**STANDARD HEAD- & FOOTBOARDS** ..... 7 - 10

- Std. Head- & Footboard Boring Patterns
- Assembly Instructions
- Head- & Footboard Assembly Parts
- Head- & Footboard Assembly Diagram

**OPTIONAL EMBEDDED STAFF CONTROL** ..... 11

- Assembly Instructions
- Footboard Embedded Control Parts & Diagram—single control box

**STANDARD & OPTIONAL WALLSAVERS** ..... 13

- Assembly Instructions
- Standard Wallsaver & Side Wallsaver Assembly Parts
- Wallsaver Assembly Diagrams

**STANDARD MATTRESS RETAINERS** ..... 14

- Assembly Instructions
- Mattress Retainer Assembly Parts & Diagram

**OPTIONAL EDEMA FOOT RATCHET** ..... 15

- Edema Diagram and Operational Instructions

## **ACCESSORIES ASSEMBLY**

**HEAD & FOOT HALF-RAILS** ..... 17 & 18

- Diagram, Parts, and Assembly Instructions

**FOOT RAIL BRACKET ASSEMBLY** ..... 19

- Diagram, Parts, and Assembly Instructions

**HEAD & FOOT ASSIST BARS/RAILS** ..... 20 & 21

- Diagram, Parts, and Assembly Instructions

**STANDARD 4" EXTENSION PAN** ..... 22

- Diagram, Parts, and Assembly Instructions

**OPTIONAL 42" WIDE DECK & WIDE DECK EXT. PAN** ... 23 & 24

- Diagram, Parts, and Assembly Instructions

**TRAPEZE SUPPORT** ..... 25

- Diagram, Parts, and Assembly Instructions

## **BED PARTS AND HARDWARE**

**HEAD, KNEE & FOOT DECKS TO MAIN FRAME** ..... 27

- Diagram, Parts, and Assembly Instructions

**MAIN FRAME TO U-LEVERS AND DRAG LINK** ..... 28

- Diagram, Parts, and Assembly Instructions

**LOWER U-LEVERS TO STANDARD CASTER CARRIAGE** ..... 29

- Diagram, Parts, and Assembly Instructions

**LOWER U-LEVERS TO LOCK CASTER CARRIAGE W/M-LOK** ... 30

- Diagram, Parts, and Assembly Instructions

## **ELECTRONICS & CABLING**

**HEAD MOTOR TO HEAD DECK AND MAIN FRAME** ..... 32

- Diagram, Parts, and Assembly Instructions

**FOOT MOTOR TO KNEE DECK AND MAIN FRAME** ..... 33

- Diagram, Parts, and Assembly Instructions

**HI/LO MOTORS TO DRAG LINKS AND U-LEVERS** ..... 34

- Diagram, Parts, and Assembly Instructions

**CONTROL BOX CONNECTIONS & CABLING** ..... 36

- Diagram, Parts, and Connection Instructions

**HEAD, FOOT, AND HI/LO CABLE ROUTING** ..... 37 - 39

- Diagram and Routing Instructions

**PENDANT CABLE & POWER CORD ROUTING** ..... 40 & 41

- Diagram and Routing Instructions


## **MISCELLANEOUS**

**ELECTRONIC TROUBLESHOOTING** ..... 42











**RECOMMENDED SERVICE AND MAINTENANCE** ..... 43





**NOTES** ..... 44

# **S**AFETY & WARNING INFORMATION - PLEASE READ BEFORE OPERATION

*This product is a variable height, adjustable mattress platform, which will provide comfort and convenience for residents/patients and caregivers in long term care settings. All Warning/Caution labels attached to the bed apply to any hazards or unsafe practices that could result in personal injury and/or property damage. DO NOT remove any Warning/Caution labels attached to the bed. Whenever you see this symbol  please pay special attention to the warning instructions and comments for your safety and the safety of the resident/patient.*

## **IMPORTANT SAFETY OPERATING INFORMATION**

-  The MAXIMUM SAFE WORKING LOAD for the Matrix II Bed, including the mattress, panels, side rails, and accessories, taking into consideration proper positioning, patient size, realignment, transfer, and overall care, is 450 lbs.
-  MAKE SURE all electrical cords DO NOT get tangled around the bed, side rails, or legs during transport or normal operation of the bed. NEVER operate the bed if a Power Cord or Plug is damaged or not working properly. Contact qualified Service Personnel for examination and repair. ALWAYS unplug the Power Cord when performing any maintenance on the bed.
-  The bed's Pendant Cord MUST BE ROUTED AND SECURED PROPERLY to ensure it does not become entangled and eventually severed during use.
-  MAKE SURE all locking casters and/or locking mechanisms are properly engaged when the bed is not in transport in order to avoid any rolling movement when the bed is at rest.
-  When operating the High/Low, Knee, or Back Functions of the bed, ALWAYS ensure that the confined individual 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.
-  The head/back deck is designed to remain in its full upright angled position when accessing the frame for cleaning. This is also a safety feature for when the bed is powered down. ALWAYS make sure the deck is fully engaged in the upright position when lifting or lowering it manually. Not doing so could result in damage to property or personal injury.
-  DO NOT lower the bed when objects are beneath it. Failure to inspect under the bed can result in damage to property or personal injury.
-  DO NOT use the side rails as push handles for moving the bed. Side rails can be deformed or broken if excessive side pressure is exerted. The purpose of the rails is to define the edge of the sleeping surface. They are not meant for patients considered as high risks for entrapment (i.e. patients with pre-existing conditions such as confusion, restlessness, lack of muscle control, altered mental status, either organic or medicinal, or a combination thereof). Additional safety measures should be considered for such high-risk patients.
-  NEVER permit more than one (1) person on/in the bed AT ANY TIME.
-  Body weight should be evenly distributed over the sleeping surface of the bed. DO NOT allow the patient to lay, sit, or lean in such a way that their entire body weight is placed only on the raised head or foot sections of the bed. This especially applies when repositioning or transferring a patient in or out of the bed. Increased risk may occur when the patient's size and/or weight are inappropriate for the bed's dimensions or weight capacity.

-  DO NOT open assemblies such as the Actuators, Hand Control, or Control Box. If unauthorized personnel perform work on these components, the manufacturer's warranty becomes void. DO NOT use unauthorized parts, accessories, or adapters other than those specified/authorized by Graham-Field Health Products.
-  When using nasal- or masked-type administering equipment, all oxygen or air tubing MUST BE ROUTED AND SECURED PROPERLY to ensure that the tubing does not become entangled and eventually severed during the normal operation of the bed.
-  Keep all moving parts free of obstructions (i.e. blankets/ sheets, heating blankets/pads, wiring, etc.)
-  The bed is intended for use, storage, and transport within a temperature range of -40°C to +60°C. It has a water-resistance rating of IPX4 and IS NOT to be power-washed or submersed.

## **OPERATING CONDITIONS**

Operation of the bed is based on the following conditions:  
Ambient Temperature of +10°C to +40°C; Relative Humidity of 30% to 75% (Non-condensing); Atmospheric Pressure of 700hPa to 1060hPa; and a Splash Protection of IEC 60529.

## **STORAGE**

Storage of the bed is based on the following conditions:  
Ambient Temperature of -10°C to 70°C; Relative Humidity of 10% to 100%; and an Atmospheric Pressure of 500hPa to 1060hPa.

## **RADIO FREQUENCY INTERFERENCE (RFI)**

RFI influences most electronic equipment. Caution should be exercised with regard to the use of portable communications equipment in the area around such equipment. If RFI causes erratic behavior, shut the bed off immediately. Leave it off while the transmission is in progress.

### **LABEL SYMBOL DEFINITIONS**



Consult  
Accompanying  
Documents



Safe  
Working  
Load



Protected  
Grounded  
Device



Type B  
Equipment &  
Applied Parts

# ENTRAPMENT COMPLIANCE INFORMATION

On March 10, 2006, the FDA (U.S. Food and Drug Administration) released long-awaited guidelines for reducing the risk of bed entrapment: “*Hospital Bed System Dimensional and Assessment Guidance to Reduce Entrapment*”. The new Guidance identifies potential entrapment areas and those body parts most at risk for entrapment; provides design criteria for manufacturers of new hospital/convalescent beds; recommends particular test methods to assess the conformance of existing hospital/convalescent bed systems; and answers frequently-asked questions about entrapment issues.

The new Guidance was a result of a long-standing collaboration between the **FDA** and the **Hospital Bed Safety Workgroup (HBSW)**, formed in 1999. Graham-Field’s Long-Term Care Bed division: *Basic American Medical Products*, is an HBSW charter member. As a result of Graham-Field’s commitment to product safety, **all of Graham-Field current long-term care beds have been strictly tested and conform to the new FDA Guidance.**

The guidelines set forth by the FDA Guidance layout specific dimensional limitations on potentially injury-threatening gaps and spaces that can occur between bed system components, such as rails, when not properly installed. Graham-Field and Basic American Medical Products have conformed to these guidelines from a manufacturing aspect. However, entrapment issues can often arise when a healthcare provider/facility has not correctly assembled the components on a bed. It is essential that the provider/facility fully understand their responsibility in complying to the guidelines set forth by the FDA in order to avoid injury. To that end, we have provided the links below as a resource for understanding and following these guidelines for the safety of the patient/resident.

## **Graham-Field encourages all hospital bed owners to read the FDA guidance.**

- ▶ Please visit the FDA’s Hospital Bed Safety page at "<http://www.fda.gov/cdrh/beds/>"
- ▶ To find many resources, including a link to the new Guidance page go to "<http://www.fda.gov/cdrh/beds/guidance/1537.pdf>"
- ▶ Ordering instructions for a Testing Kit which you can use to determine whether your beds are in conformance with the guidance can be found at "<http://www.fda.gov/cdrh/beds/entrapmentkit.html>" ("<http://www.fda.gov/cdrh/beds/entrapmentkit.html>" <http://www.fda.gov/cdrh/beds/entrapmentkit.html>) ;
- ▶ A discussion of Clinical Guidance protocol which you can use to assess an individual patient’s needs when using a side rail can be found at "[http://www.ute.kendal.org/learning/documents/clinicalguidance\\_SideRails.pdf](http://www.ute.kendal.org/learning/documents/clinicalguidance_SideRails.pdf)"

These resources will supply you with the knowledge to evaluate the safety of the hospital beds you currently own.

It is also essential to have the correct bed components/accessories that correspond with the needs of your patient/resident and the particular bed you have purchased. Matching the correct bed component that correlates with the regulatory guidelines can be a daunting task. Our Graham-Field Sales team and the friendly Customer Service Representatives at Basic American Medical Products can help you sift through the wide array of compliance and bed options. We will help you determine which bed/bed part is best for your patient’s/resident’s particular needs and help you with your compliance issues.



# BED FEATURES & SPECIFICATIONS

The Matrix II Full-Electric Bed Series offers some outstanding standard and optional features all geared for safety and comfort. We have included both mechanical and electrical specifications below for your records. \*We are excited to introduce a new Anti-Microbial Powder Coat Painting process which has been proven to inhibit the growth of damaging and disease causing microbes (bacteria, mold, fungus, algae, etc.) on the surface of coated items. Recorded result-reduction of bacteria has been 99.9%.

FEATURES	
Sleep Surface Availability	76" & 80"
Sleep Surface Options	Steel Welded Wire Grid (std) or Pan
Sleep Surface Material	11 GA. Hot Rolled Steel
Base Frame Material	Welded Tubular
Main Frame Material	Steel (Rectangular & Square Tubing)
Travel Range	8.90" to 25.00"
Standard Locking System	Lock and/or Roll at any height
Baseboard Wallsaver	Wire - Standard
Mattress Retainers	Two std. on foot deck
Hand Pendant	6-function with long coil cord
Pendant Holster	Standard
Motors & Control Box	Quiet DC Electronics
Heavy Duty Casters	Four Standard
*Anti-Microbial Powder Coat Paint Finish	Soft Pantone Grey
Entrapment	FDA Compliant

MECHANICAL DIMENSIONS		
	76"	80"
Overall Bed Length (with standard wallsaver)	82.00"	86.00"
Overall Bed Width (with standard rails)	39.75"	39.75"
Overall Bed Width (with standard boards-no rails)	36.00"	36.00"
Sleep Deck Surface Length	75.00"	79.00"
Sleep Deck Surface Width	35.00"	35.00"
Sleep Deck Surface Height (high position)	25.00"	25.00"
Sleep Deck Surface Height (low position)	8.90"	8.90"
Under Bed Minimum Clearance (high position)	5.25"	5.25"
Maximum Head Deck Angle	70°	70°
Maximum Knee Deck Angle	30°	30°
Maximum Knee to Leg Angle	45°	45°
Maximum Safe Working Load (including mattress, panels, side rails and accessories, and taking into consideration patient size, proper positioning, realignment, transfer, and overall care.	450 lbs.	450 lbs.

ELECTRICAL SPECIFICATIONS	
Power/Frequency	120 Volt/60 Hz
Current Actuator Rating	LA27
Overall Movement Draw	4 Amps
Classification	Class I, Type B
Mode of Operations	10% Max. Duty Cycle 2 minutes on/18 minutes off
Electrical Cord	Type SJT 3/18AWG Grounded w Hospital Plug
OPTIONS/ACCESSORIES	
One Step Locking Mechanism	Foot end/360° roll
Std. 4" Pan Extension Kit	Foot end - adds 4" to length
Staff/Nurse Control	Embedded in Footboard
Lockout	Economy or Single
Tubular Wallsaver	Steel
Side Rails	LH and RH/Head or Foot
Assist Bar	LH or RH/Head or Foot
Edema Foot Ratchet	Foot end
Trapeze	Support & Bar
Traction	Adapter & IV Socket
Battery Backup	Charger, Cable & Battery
Standard Pan Deck	Pan Head, Knee & Foot
42" Wide Deck Kit	Two RH & two LH Sections
Wide 4" Pan Extension Kit	Foot end - adds 4" to length

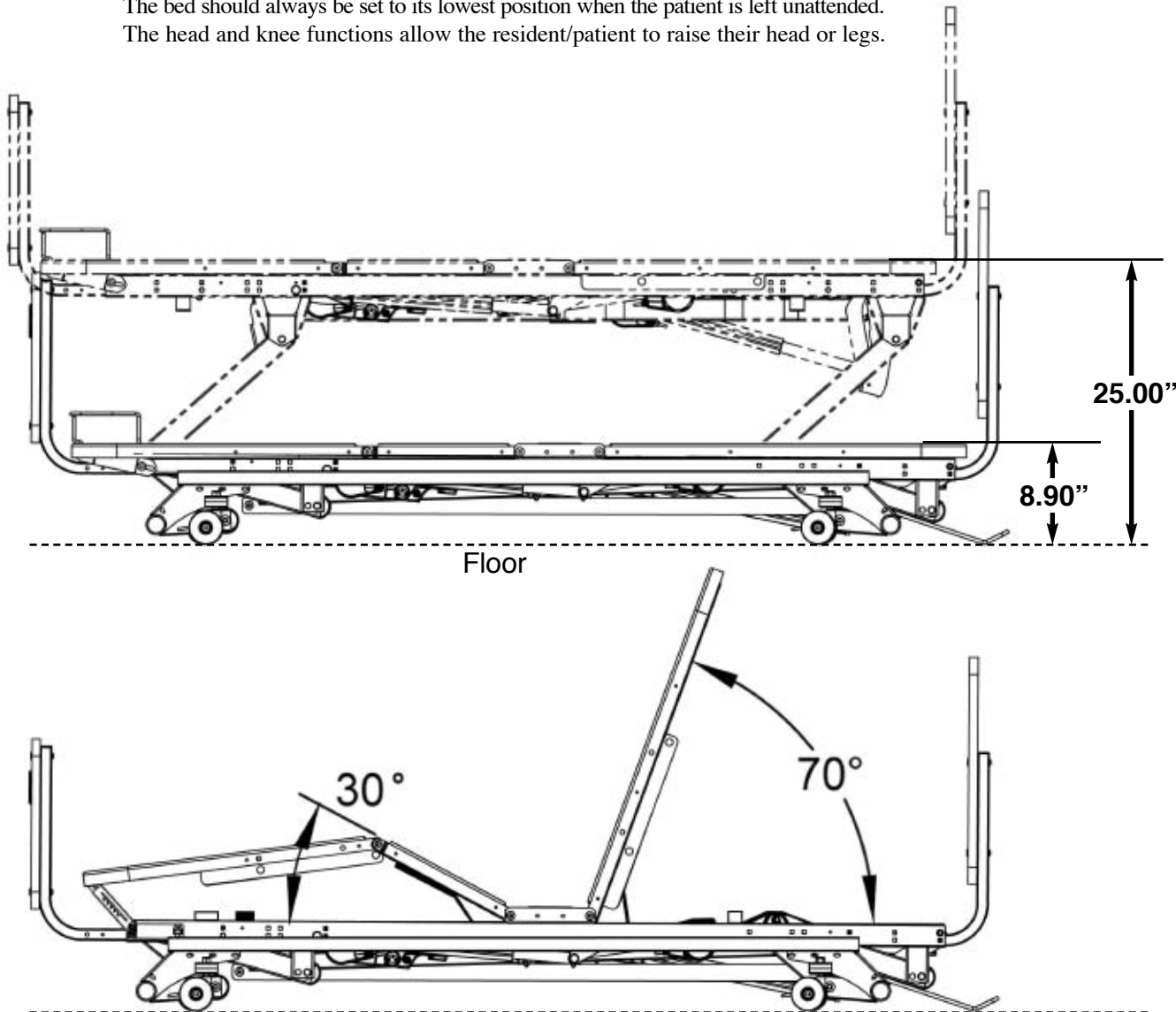
**NOTE: When ordering parts or contacting our customer service department, please have the bed's model and serial number available. These can be found on the identification labels which are usually located on the bed frame under the sleep deck.**

# POSITIONING SPECIFICATIONS

The Matrix II Bed Series has infinite positions that serve to help the patient be more comfortable and gives the practitioner easy access during procedures, transfers, etc. The correct placement of the bed is essential for the patient's safety.

The bed should always be set to its lowest position when the patient is left unattended. The head and knee functions allow the resident/patient to raise their head or legs.

The recommended maximum distance for the head function is 70°. In the event of a power outage, it is preferred that the knee and back sections be lowered using an emergency battery pack. If unavailable, the sections can be set into the flat position by easily removing the actuator mounting pins.



## QUICK REFERENCE:

### MAXIMUM (High Position)

Bed height from floor to sleep deck top = 25.00"

### MINIMUM (Low Position)

Bed height from floor to sleep deck top = 8.90"

### DISTANCE TO WALL (High)

Headboard mounting tube to end of std. wallsaver = 1.75"

### DISTANCE TO WALL (Low)

Headboard mounting tube to end of std. wallsaver = 1.50"

### MAXIMUM (Head Angle)

Head deck to sleep surface = 70°

### MINIMUM (Knee Angle)

Knee deck to sleep surface = 30°

### MAXIMUM (Knee/Foot Angle)

Knee deck to foot deck = 45°



# OPERATION OF STANDARD PENDANT/HAND CONTROLLER

## EASY PATIENT CONTROLS

Each Matrix II Bed is equipped with a pendant-type hand control—standard. Each control function (head, bed, and knee) has two easily recognizable switches for up and down movement. The pendant can be easily disconnected to deactivate the patient control functions.

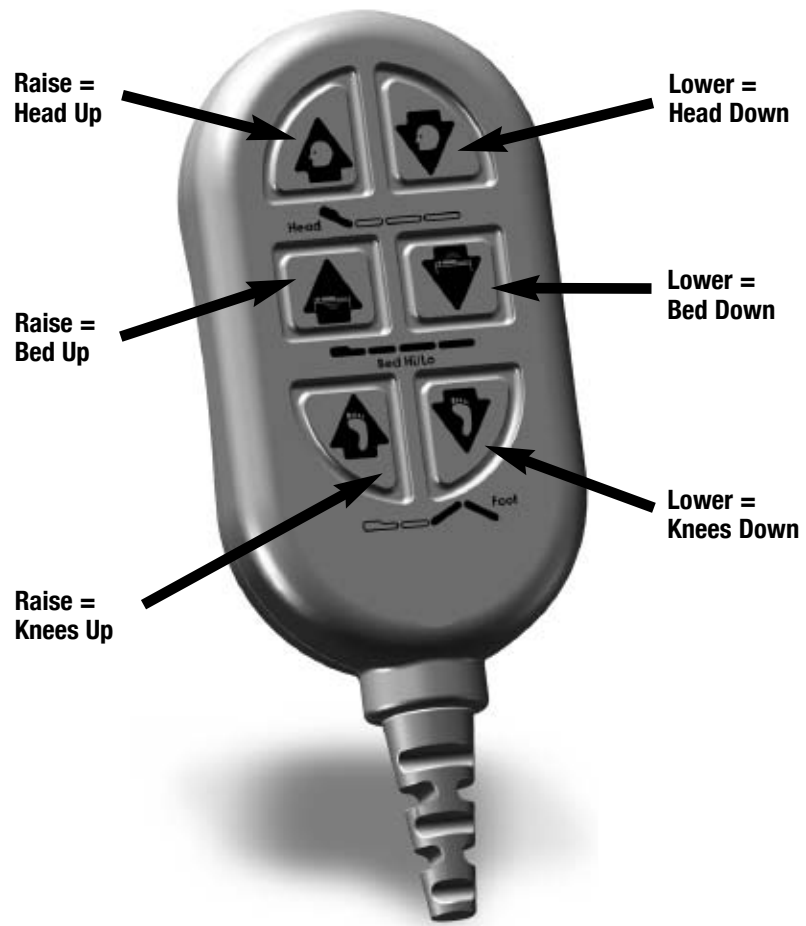
The controls are designed so that more than one function can be activated simultaneously. To operate, push the appropriate buttons to activate the desired function.



Pendant Holster  
999-0791-000



Male End Connector  
of Pendant Cable



Raise =  
Head Up

Lower =  
Head Down

Raise =  
Bed Up

Lower =  
Bed Down

Raise =  
Knees Up

Lower =  
Knees Down

Model # HB00  
Part # 999-0775-305  
(Also includes alligator clip 100-0510-001)





# OPERATION OF OPTIONAL STAFF/NURSE CONTROL

Part # 999-0775-901

## STAFF/NURSE CONTROLLER

The staff/nurse control allows the caregiver to individually lock out all functions of only the pendant control. The caregiver can also operate the bed from this panel without walking to the side of the bed.

### TO OPERATE THE TRAVEL CONTROLS

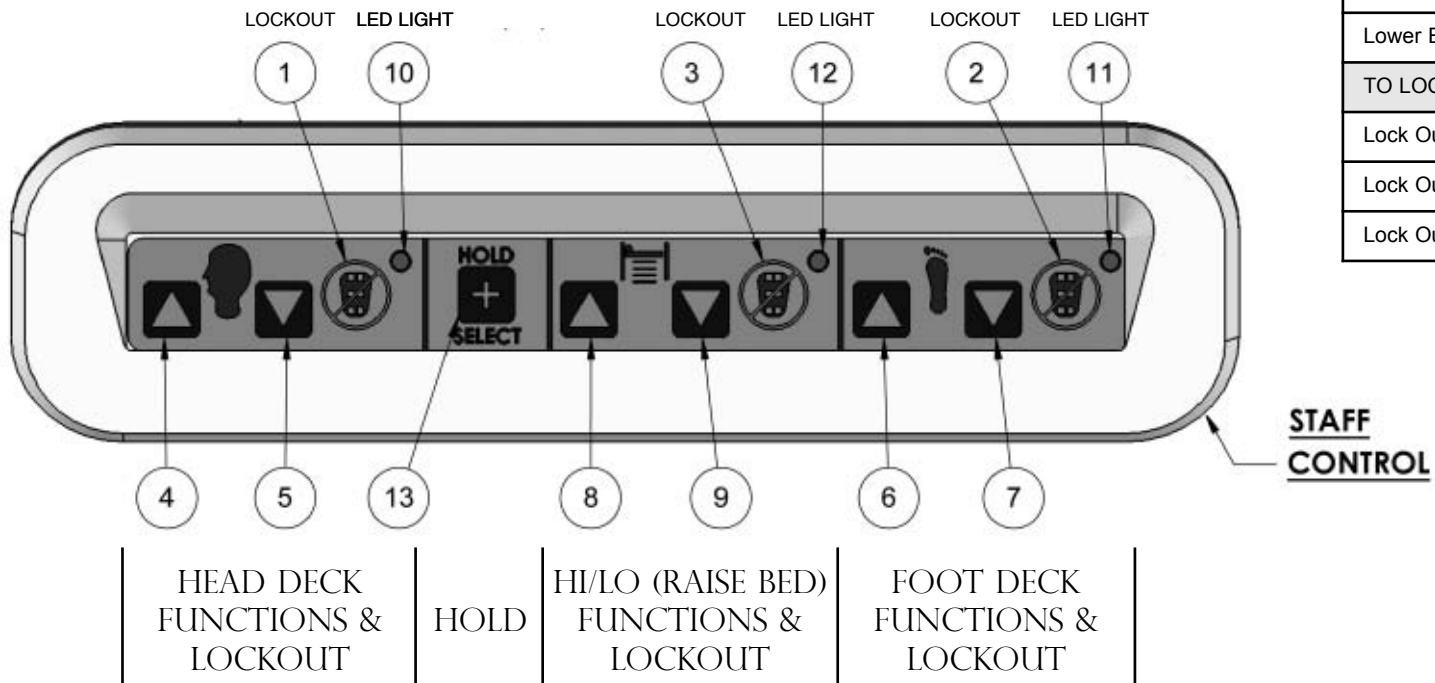
Press the "HOLD SELECT" (#13) first, then the appropriate "UP" (#4, 6, or 8) OR "DOWN" (#5, 7, or 9) on the panel.

### TO LOCK OUT A PENDANT FUNCTION

Press the "HOLD SELECT" (#13) first, then the appropriate "NO PENDANT" (#1, 2, or 3) on the panel. The corresponding illuminated LED light (#10, 11 & 12) indicates that the function is now locked out on the pendant.

### TO UNLOCK A PENDANT FUNCTION

Press the "HOLD SELECT" (#13) first, then the appropriate "NO PENDANT" (#1, 2, or 3) on the panel. The corresponding LED light (#10, 11 & 12) is no longer illuminated, indicating that the pendant can now operate that function.



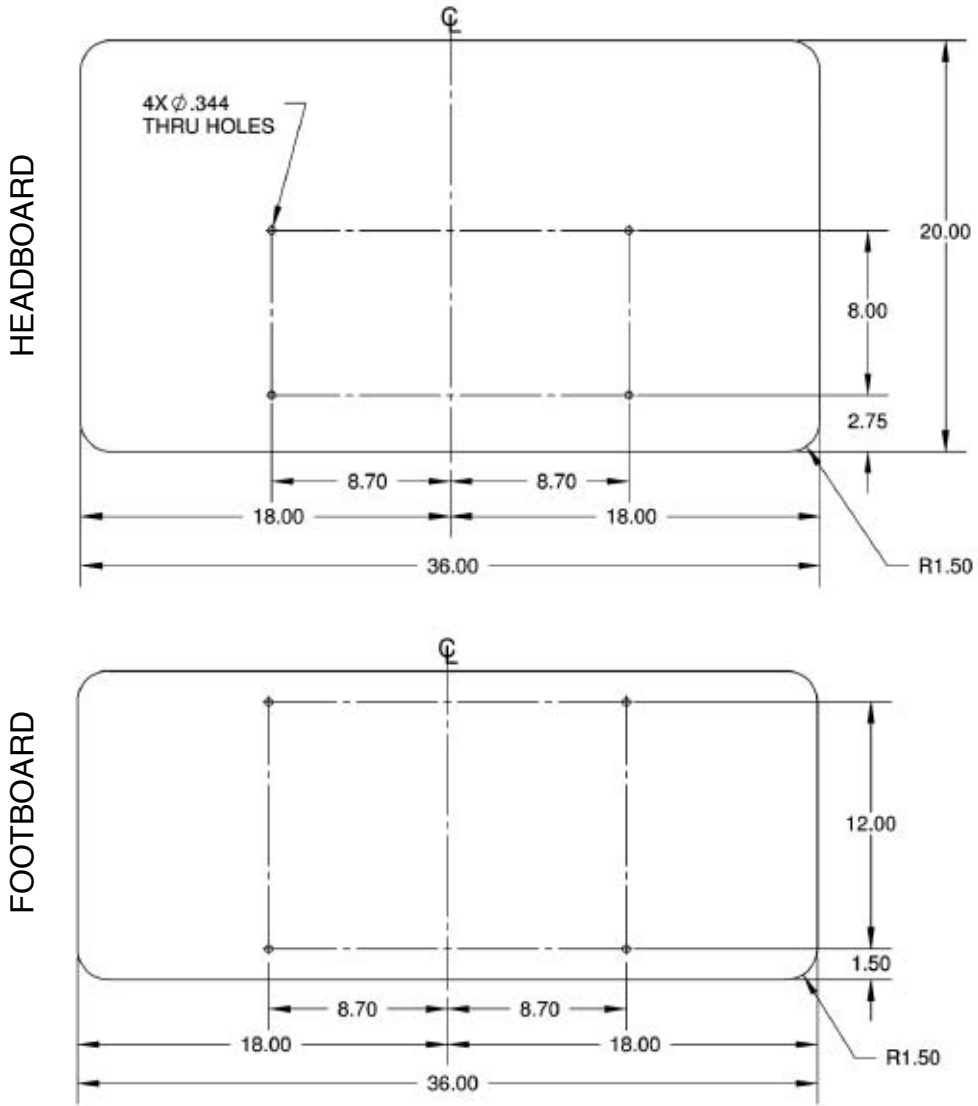
STAFF CONTROL REFERENCE	
Head LED Light	Item 10
Foot LED Light	Item 11
Hi/Lo LED Light	Item 12
Hold & Select Button	Item 13
TO OPERATE BED FROM STAFF CONTROL	
Raise Head/Back Deck	Push 13 then 4
Lower Head/Back Deck	Push 13 then 5
Raise Knee/Foot Decks	Push 13 then 6
Lower Knee/Foot Decks	Push 13 then 7
Raise Entire Bed (Hi/Lo)	Push 13 then 8
Lower Entire Bed (Hi/Lo)	Push 13 then 9
TO LOCK OUT HAND CONTROL FUNCTION	
Lock Out Head Function	Push 13 then 1
Lock Out Foot Function	Push 13 then 2
Lock Out Hi/Lo Function	Push 13 then 3

**PLEASE NOTE:**  
When the Pendant Hand Controller is locked out, you can still operate the bed from the Staff/Nurse Control without unlocking the pendant hand controller.

# HEAD- & FOOTBOARDS

# STANDARD HEADBOARD AND FOOTBOARD BORING DIAGRAM

The diagrams below outline the manufacturer's standardized headboard and footboard boring specifications. All of the dimensions are referenced from the center and bottom. Before making any significant variations to these dimensions, please contact the manufacturer.



# A

## ASSEMBLY - STANDARD HEAD AND FOOT BOARDS

1. Assemble two Mounting Tubes (#4) to the Headboard (#1) and two to the Footboard (#2) using eight 1/4-20 x 4mm JCB-B Hex Drive Bolts (#6), going through the pre-drilled holes on the boards and into the eight 1/4-20 x .60" Long Threaded Inserts (#3) (already attached to the boards) as shown. Hand tighten only at this time.
2. Insert the Mounting Tubes into the Main Bed Frame Tubes so that the holes match up as shown. Secure with four 5/16 x 1-1/2" Clevis Pins (#7) and 1-9/16 Hair Pin Clips (#8) (1 each per bed frame tube). The mounting tubes will slide underneath the two 5/16-18 x 1.50" Carriage bolts that were pre-inserted into the Main Frame Rails at the head-end of the bed by the manufacturer.
3. Now tighten all screws with a phillips screwdriver. Be careful not to overtighten.

Item #	Quantity	Part #	Description
1	1	-	Headboard*
2	1	-	Footboard*
3	8	100-7025-004	1/4-20 UNC x .60" Long Threaded Insert (pre-inserted into footboard and headboard)
Headboard & Footboard Mounting Kit (999-0775-000) includes the following parts:			
4	4	999-0746-035G	Mounting Tubes
5	4	100-4700-015	1" x 1" Square Tube End Cap (pre-inserted in tubes)
6	8	100-5425-094	1/4-20 x 4mm JCB-B Hex Drive Bolt
7	4	100-7931-007	Clevis Pin - 5/16 x 1-1/2" w/cross hole
8	4	100-2001-006	1-9/16 Hair Pin Clip
not shown	1	100-9900-060	M4 4mm Hex Allen Wrench
Hardware Pre-inserted into Main Frame Rails to Hold Mounting Tubes			
9	2	100-5231-003	5/16-18 x 1.50" Carriage Bolt
10	2	100-6731-006	5/16-18 Thin Nylon Lock Nut

\* There are a number of stylish options for Matrix II Headboards and Footboards including Oak, Walnut, and Mahogany finishes. Please consult your catalog, our website ([www.graham-field.com](http://www.graham-field.com)), or contact one of our Sales Representatives for options. Please note that headboards and footboards come as a kit and are not interchangeable.

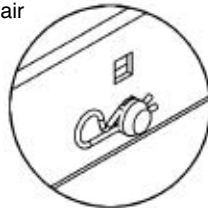
# STANDARD HEADBOARD AND FOOTBOARD ASSEMBLY

Standard beds do NOT include Staff Control. (Complete footboard assembly with staff control shown on page 11)



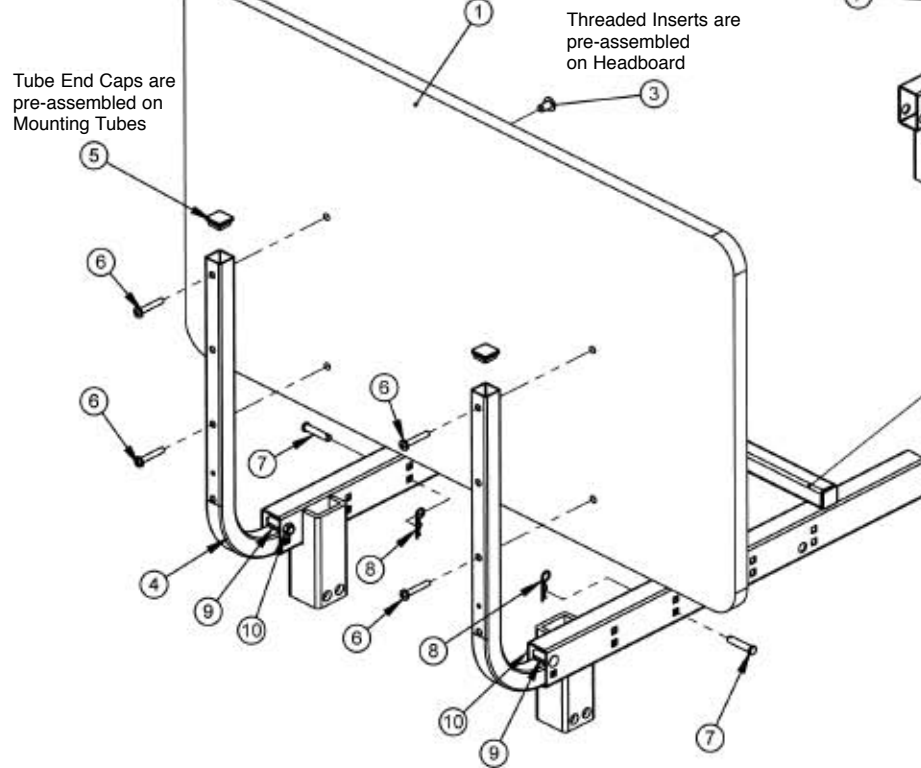
To safely remove Hair Pin Clip grasp on circular end and pull.

Close-up of Hair Pin Clip (#8) inserted into hole in Clevis Pin (#7)



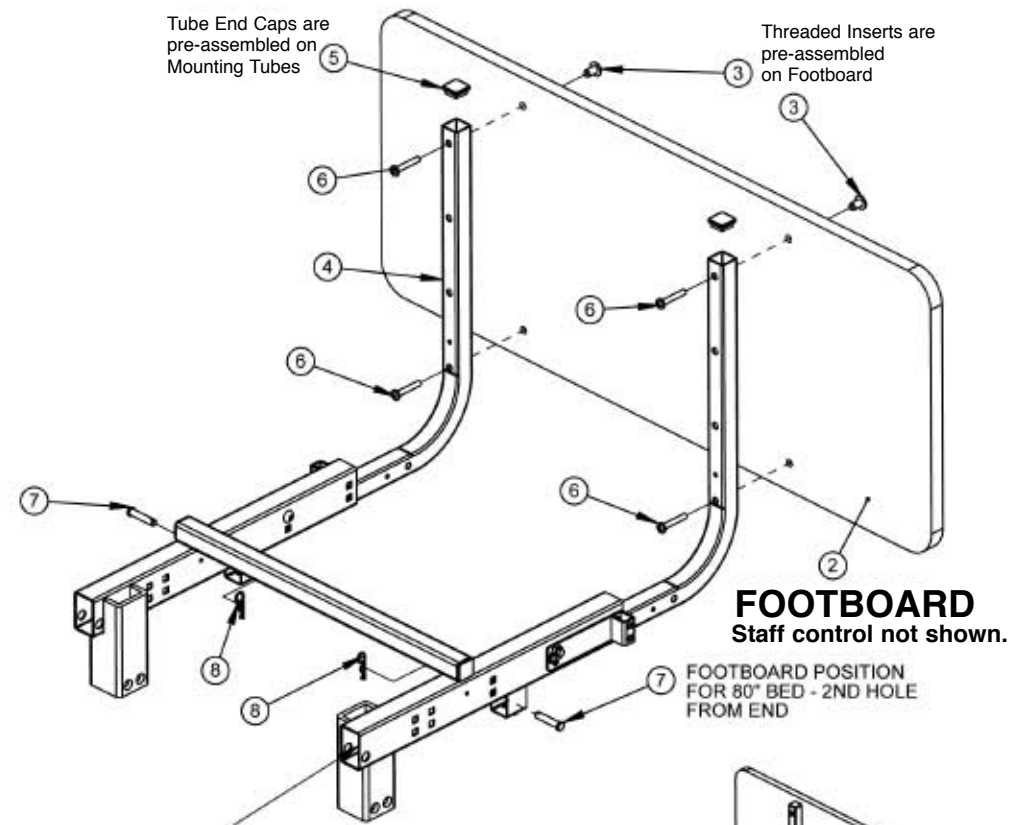
**TOOLS NEEDED:**  
(1) Phillips Screwdriver

## HEADBOARD



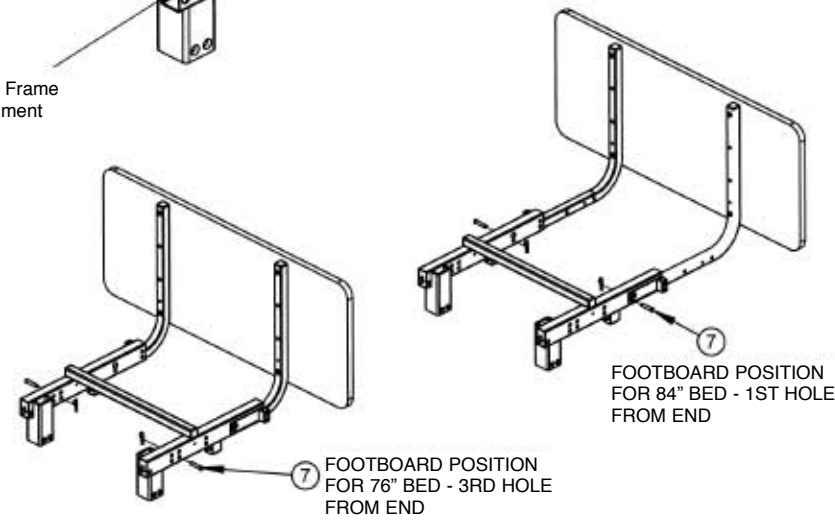
Tube End Caps are pre-assembled on Mounting Tubes

Threaded Inserts are pre-assembled on Footboard



## FOOTBOARD

Staff control not shown.



# A

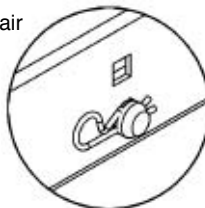
# ASSEMBLY - OPTIONAL FOOT BOARD EMBEDDED STAFF CONTROL

Item #	Qty	Part #	Description
<b>STAFF CONTROL ASSEMBLY KIT (ZL788053) INCLUDES:</b>			
1	1	Z53650	Std. Oak Head- & Footboard (with cut out)
2	1	999-0775-901	Staff Control Assembly with Cables
3	1	999-0775-006G	Wide Staff Control Shroud
4	6	100-5506-002	#6 x .50" Phillips Truss Head Screws (Blk)
5	3	100-1100-024	4" Nylon Cable Tie
<b>Mounting Tube to Main Frame Hardware</b>			
6	2	100-7931-007	5/16 x 1.50" Clevis Pin w/hole (existing)
7	2	100-2001-006	1-9/16 x .072 Hair Pin Clip (existing)

1. Assemble the footboard mounting tubes to the "staff control footboard" as shown on the previous pages if not already assembled. Note that the standard footboard does not have the cut outs for the staff control assembly. A separate footboard with cut outs must be ordered for the staff controller option.
2. Facing the footboard from the foot-end of the bed, carefully thread the male and female staff control cables through the hole in the footboard and position the staff control assembly (#2) into the pre-formed slot on the footboard, making sure all screw holes line up correctly. Using two black #6 X .50" Phillips Truss Head Screws (#4), from the back of the footboard secure the Staff Control via the outermost holes.
3. Place the Staff Control Shroud (#3) over the cables on the back of the footboard and attach with four black #6 X .50" Phillips Truss Head Screws (#4). Lightly tighten all screws with a phillips screwdriver. Tie the cables to the mounting tubes with ties (#5).

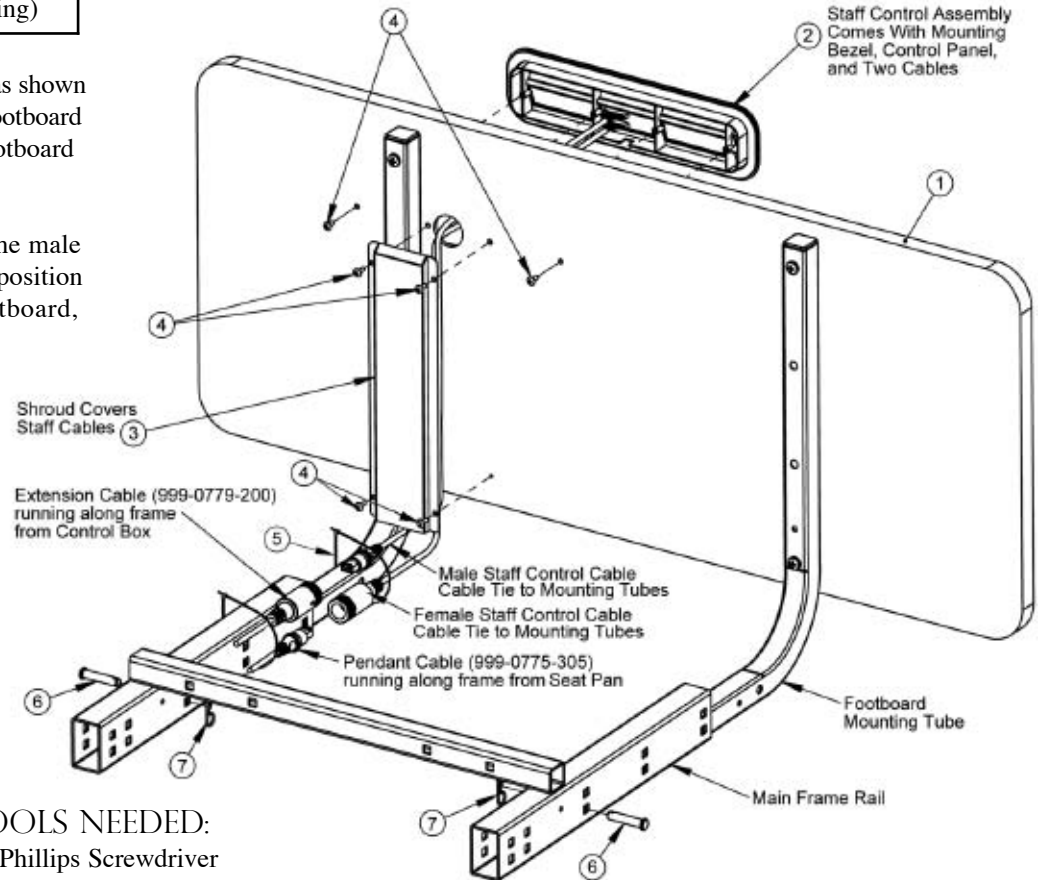


Close-up of Hair Pin Clip (#6) inserted into hole in Clevis Pin (#7)



To safely remove Hair Pin Clip grasp on circular end and pull.

4. Insert the Footboard Mounting Tubes into the Main Bed Frame Tubes so that the holes match up as shown. Secure with two 5/16 x 1-1/2" Clevis Pins (#6) and Hair Pin Clips (#7) (1 each per bed frame tube).
5. Unplug the Pendant cable from the Extension Cable that's already attached to the left side frame rail at the foot end of the bed.
6. Plug the male staff control cable into the cable extension that has been plugged into the control box in the HB Port. Plug the Pendant cable into the female staff control cable.
7. Tighten all screws on the Footboard with a phillips screwdriver. Be careful not to overtighten.



**TOOLS NEEDED:**  
(1) Phillips Screwdriver

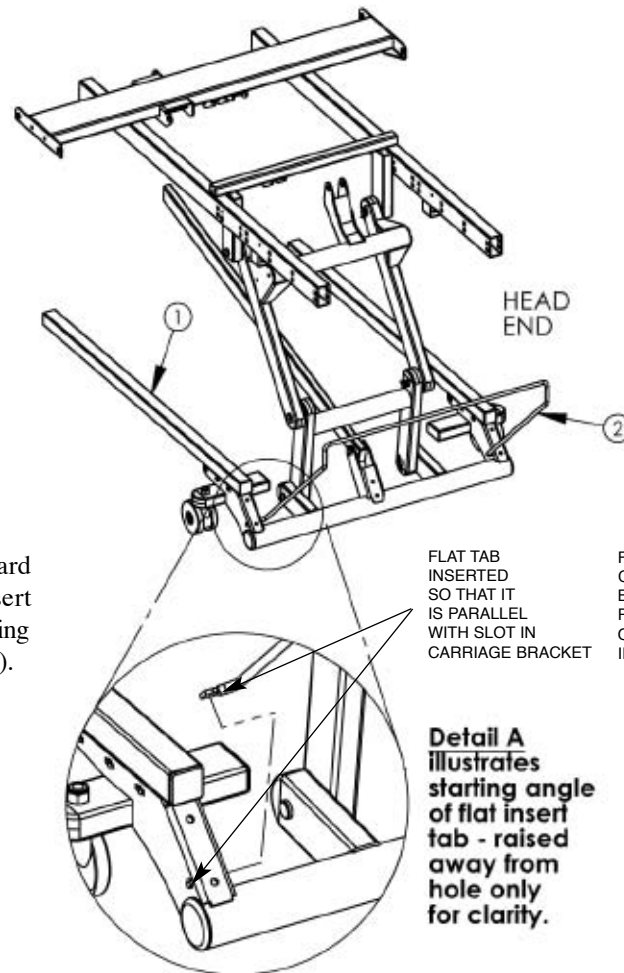
# WALLSAVERS, MATTRESS RETAINERS & EDEMA RATCHETS

# A

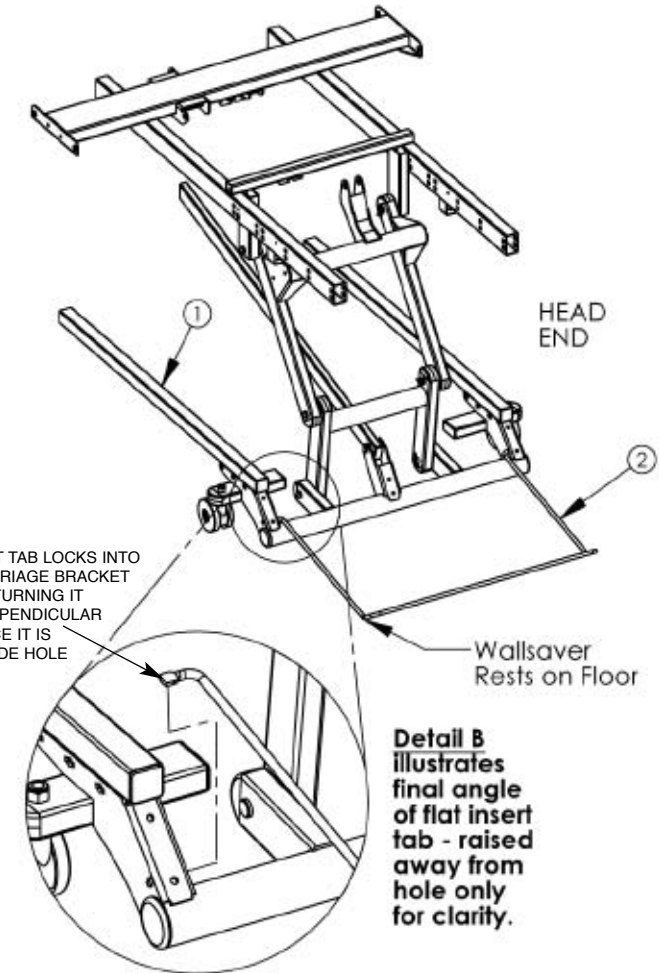
## SEMBLY - STANDARD WALLSAVER (with optional trapeze positioning)

1. The Matrix II 709 standard wireform wallsaver is easily attached to the head-end of caster carriage. Begin by positioning the wallsaver (#2) on the head end with the exposed ends (with flat insert tabs) facing the foot-end of the bed.
2. From the inside, locate the bottom last hole in the carriage bracket on both sides of the bed. Holding the wallsaver in a 45° position as shown, squeeze its sides inward toward center and insert the ends of the wallsaver into the bracket holes. (See Detail A)
3. Carefully lower the wallsaver downward until it rests on the floor. The flat insert tab will turn within the bracket hole, locking the wallsaver into place. (See Detail B).
4. The position of the wallsaver is very important on the Matrix II bed. It has been designed so that the bed will be kept a safe distance from the wall when raising or lowering the bed, thus preventing damage to the bed or resident/facility walls.

### WALLSAVER ATTACHING POSITION

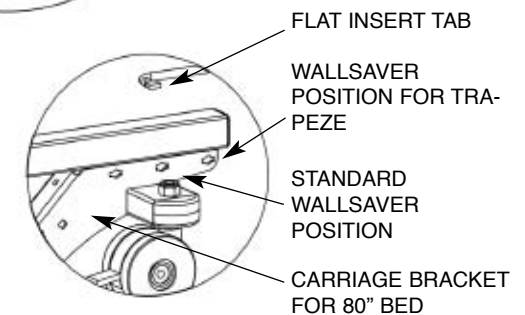


### FINAL WALLSAVER RESTING POSITION



### NO SPECIAL TOOLS REQUIRED

Item #	Quantity	Part #	Description
1	Reference	999-0807-955G	Standard Caster Carriage Assembly (Also works on Locking Carriage Assembly 999-0807-958G)
2	1	999-0779-180	Standard Wireform Wallsaver - 76", 80", or 84"





# A

## ASSEMBLY - STANDARD CORNER MATTRESS RETAINERS

NOTE: The Mattress retainers are interchangeable for both the head and foot ends of the bed. The foot retainers come standard with your bed. Head retainers are optional and must be ordered separately.

1. Install the Mattress Retainers (#1) into the holes on the corners of the Head Deck or Foot Deck.
  - a. Starting in a vertical position, place the ends into the holes as shown in Figure A so that the curved part of the retainer is facing outward.
  - b. Lower the mattress retainer and pivot it into a horizontal resting position as shown in Figure B.

Item #	1
Kit Qty.	(In sets of 2)
Kit #	999-0814-000
Single Part #	999-0814-001
Description	Corner Mattress Retainer

NO SPECIAL TOOLS  
REQUIRED

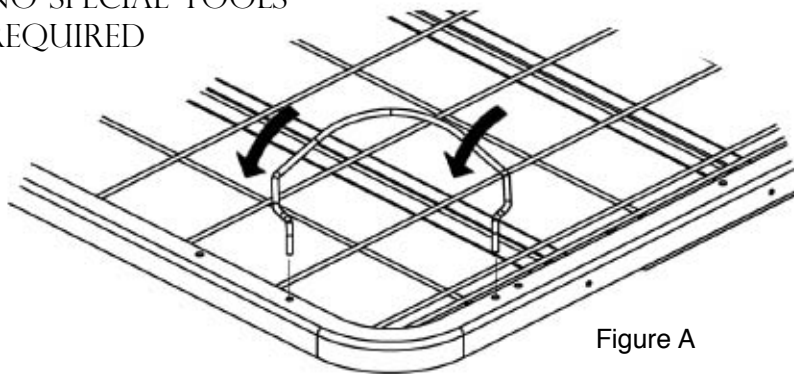
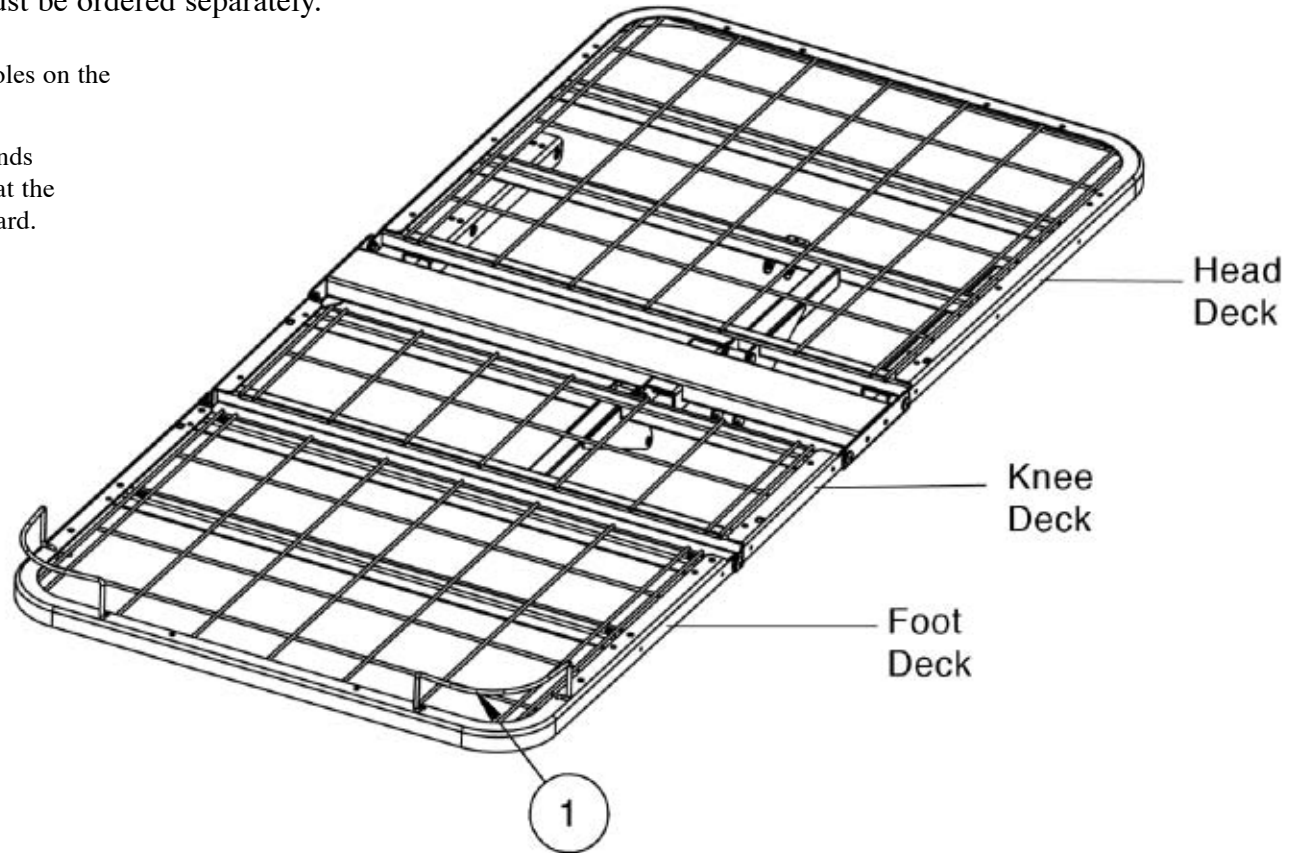


Figure A

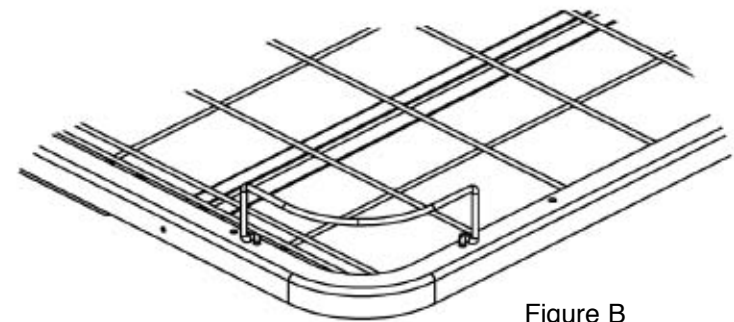


Figure B

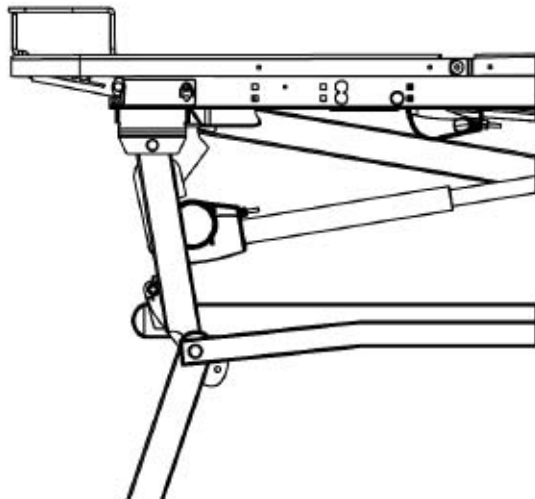


# OPERATION OF OPTIONAL EDEMA FOOT RATCHET 999-0748-001

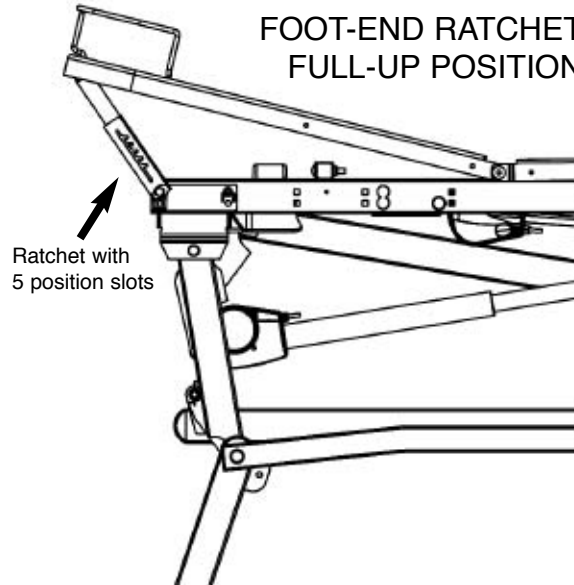
The foot ratchet allows the attendant to manually adjust the foot position for the resident/patient. It offers five different positions for comfort versatility. It was designed to be easily adjusted by hand.

Simply lift the foot end of the bed via the main frame and position the foot end in one of the five slots available for the preferred foot height. To release the ratchet so that it returns to the down position, lift the foot end to the outer most extension of the ratchet. This will release the pin from the slots and return the bed to the prone position.

FOOT-END RATCHET  
FULL-DOWN POSITION



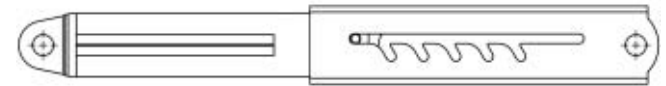
FOOT-END RATCHET  
FULL-UP POSITION



**NOTE:**

The foot-end ratchet adjustment can be used with the knee deck in any position.

Ratchet Fully Extended



Ratchet in First Slot



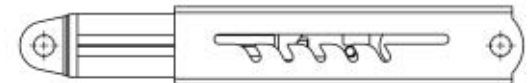
Ratchet Second Slot



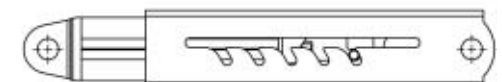
Ratchet in Third Slot



Ratchet in Fourth Slot



Ratchet in Fifth Slot



Ratchet Fully Collapsed



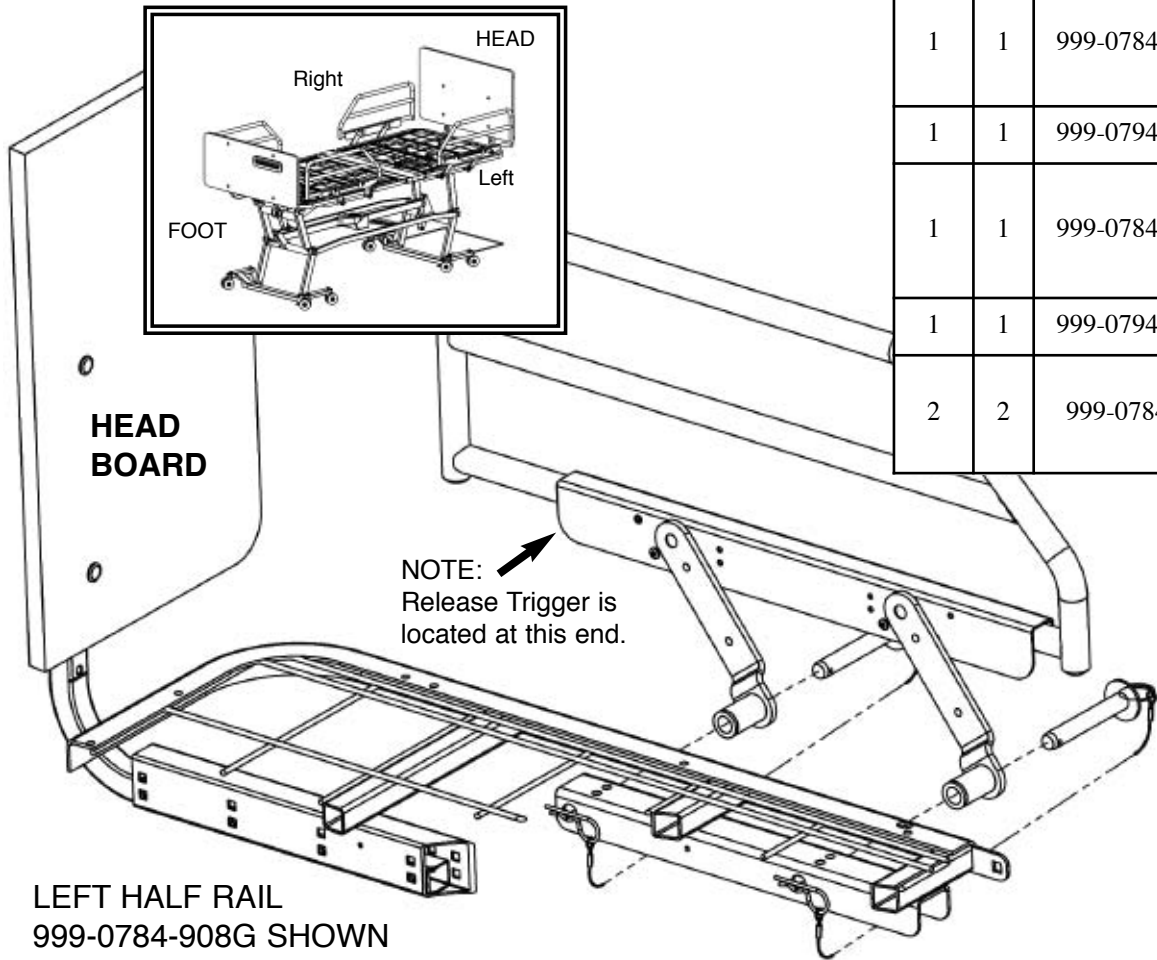
# ACCESSORY ASSEMBLY

# A

## CESSORY ASSEMBLY - HEAD & FOOT HALF RAILS

### HEAD-END HALF RAIL KIT: ZA78400

(Includes Part 999-0784-908G – Left Side and Part 999-0784-907G - Right Side, plus hardware bag)



Item #	Qty.	Part #	Description
1	1	999-0784-908G	Head-End Half Rail: Left-Hand Side - 76"
			Head-End Half Rail: Left-Hand Side - 80"
			Foot-End Half Rail: Right-Hand Side - 80" Only (Not shown)
1	1	999-0794-908G	Foot-End Half Rail: Right-Hand Side - 76" Only (Not shown)
1	1	999-0784-907G	Foot-End Half Rail: Left-Hand Side - 80" Only (Pg. 18)
			Head-End Half Rail: Right-Hand Side - 76" (Not shown)
			Head-End Half Rail: Right-Hand Side - 80" (Not shown)
1	1	999-0794-907G	Foot-End Half Rail: Left Hand Side - 76" Only (Pg. 18)
2	2	999-0784-100	Clevis Pin - 16mm. Dia. x 105mm. w/cross-hole, circle cotter, lanyard cable (LBK-3-06) and Hair Pin Clip

**NOTE:** Release Trigger is located at this end.

1. All Half Rails (#1) mount to the bed in a similar fashion. Left or right designations are based on the patient's orientation as he/she lies in the bed.
2. Insert the two Clevis Pins, with Circle Cotter and Lanyard Cable (#2), into the two Half Rail arms as shown.
3. Attach the Half Rail to the bed frame brace by aligning the arms and Clevis Pins to the holes on the brace. Slide the Clevis Pins so that they extend past the brace on the underside of the bed.
4. Insert the two Hair Pin Clips (#3) into the holes in the Clevis Pins to secure the rail to the bed.
5. **IMPORTANT:** Lubricate all pivot joints as needed. Aerosol White Lithium Grease is recommended.
6. **TO OPERATE:** Depress the Release Trigger to lower or raise the half rail assembly.

**NO SPECIAL TOOLS REQUIRED**



**WARNING:** The mattress support platform should always be placed in the flat position when not attended.

When assessing the Risk for Entrapment, you need to consider your bed, mattress, head- and footboards, half rails, assist bars, and other accessories as an entire system. All bed systems are evaluated for compliance to the FDA/CDRH "Hospital Bed System Dimensional and Assessment Guidance to Reduce Entrapment" guidelines.

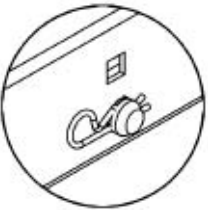
A resident/patient's condition could lead to resident/patient entrapment. It is extremely important to review the resident/patient's physical and mental condition, and initiate an appropriate individual care plan to address any entrapment risks.

## 80" FOOT-END HALF RAIL KIT: ZA78500

Includes (Part 999-0784-907G —Left Side, Part 999-0784-908G —Right Side, two Foot Brackets, and all mounting hardware)



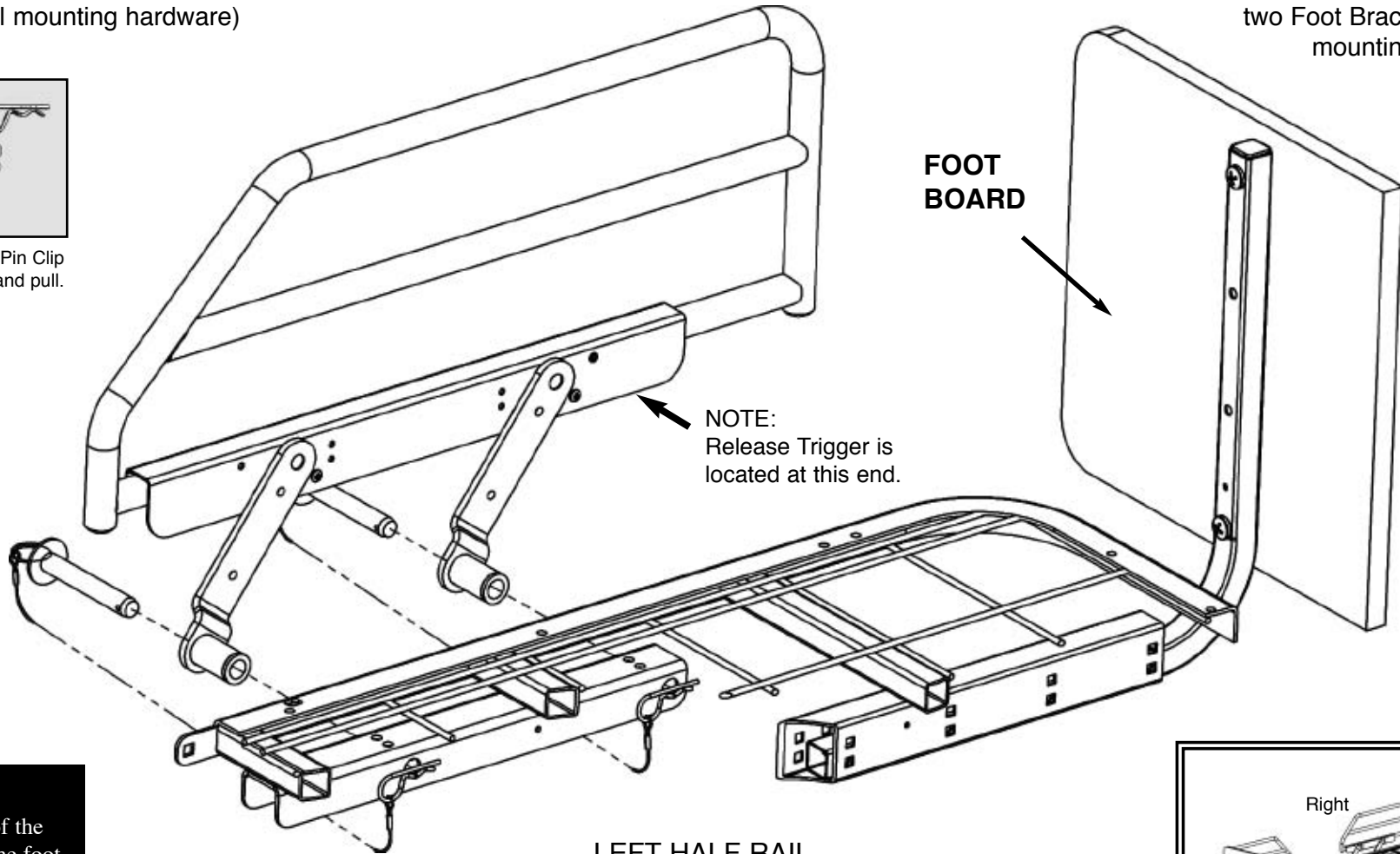
To safely remove Hair Pin Clip grasp on circular end and pull.



Close-up of Hair Pin Clip (#8) inserted into hole in Clevis Pin (#7)

### NOTE:

Pre-assembly of the Rail Bracket to the foot section is required before the foot-end Half Rail can be attached. Please see page 19.

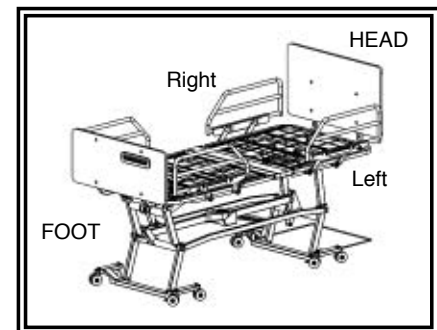


LEFT HALF RAIL  
999-0784-908G SHOWN

## 76" FOOT-END HALF RAIL KIT: ZA79400

Includes (Part 999-0794-907G —Left Side, Part 999-0794-908G —Right Side, two Foot Brackets, and all mounting hardware)

FOOT BOARD

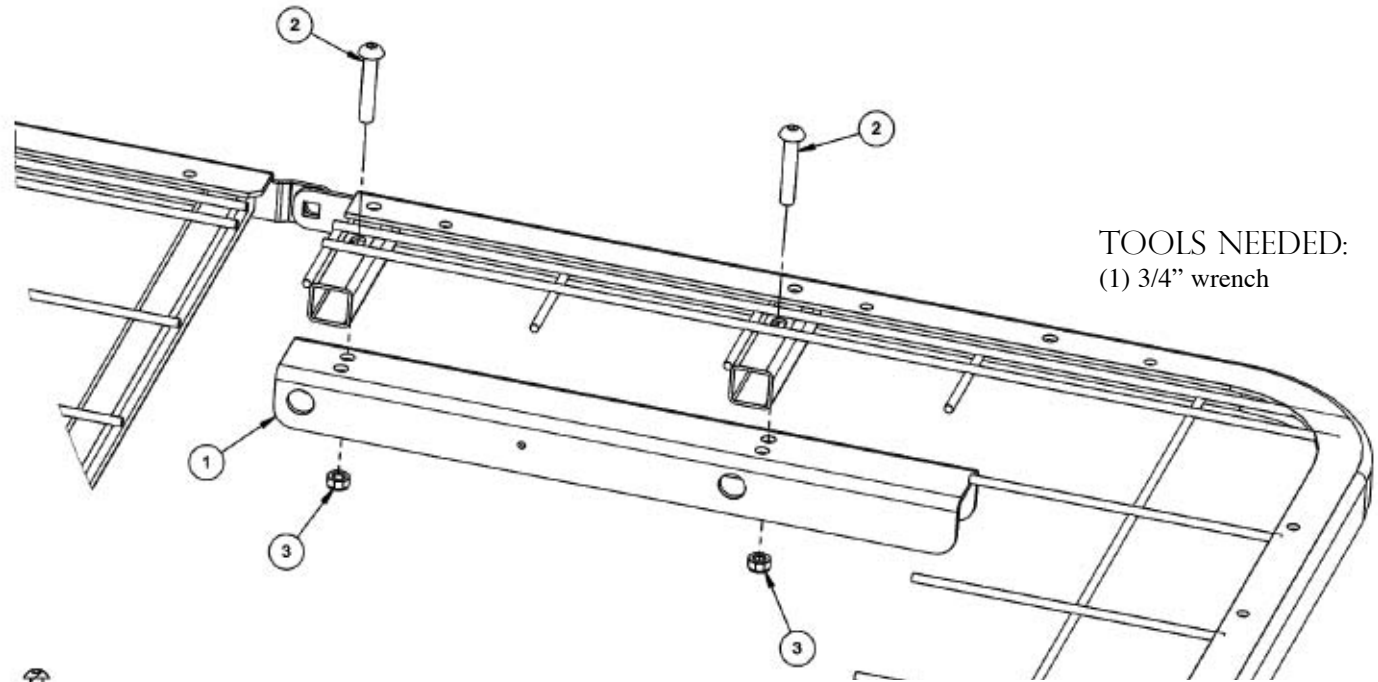


# A

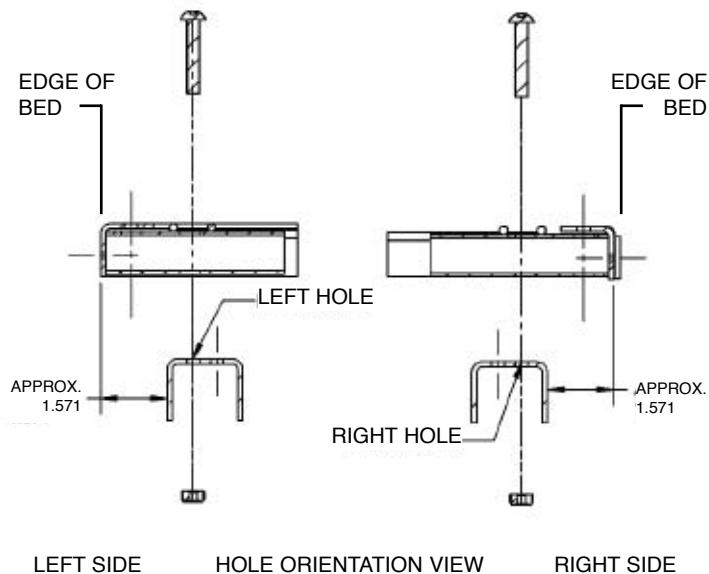
## CESSORY ASSEMBLY - FOOT RAIL BRACKET FOR HALF RAILS

NOTE: Installation of Foot Bracket for Half Rails or Assist Bars is only necessary on the Foot Section of the bed frame.

1. Using the outer most holes of the Rail Bracket, install the Bracket (#1) with two 5/16-18 x 1-3/4" Bolts (#2) and two 5/16-18 Nylon Lock Nuts (#3) as shown. Make sure the longer end of the bracket is toward the foot-end of the Bed Frame.
2. Use a 5/16 wrench and secure tightly.



TOOLS NEEDED:  
(1) 3/4" wrench



**For 2 Half Rail Foot Brackets Order Hardware Bag/Kit: 999-0785-905**  
(NOTE: Two Foot Brackets & Hardware included with Half Rails in ZA78500)

Item #	Qty.	Part #	Description
1	2	999-0775-025G	Rail Bracket
2	4	100-5431-036	5/16-18 x 1-3/4 Button Head Machine Screw
3	4	100-6731-006	Thin Nylon Lock Nut 5/16-18

**For 1 Assist Bar Foot Bracket Order Hardware Bag/Kit: 999-0786-995**  
(NOTE: Single Foot Bracket & Hardware included with Assist Bar in ZA80350)

Item #	Qty.	Part #	Description
1	1	999-0775-025G	Rail Bracket
2	2	100-5431-036	5/16-18 x 1-3/4 Button Head Machine Screw
3	2	100-6731-006	Thin Nylon Lock Nut 5/16-18

# A

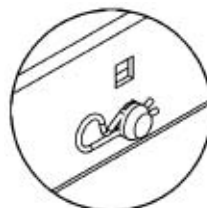
## CESSORY ASSEMBLY - FOOT-END ASSIST BAR

**NOTE:** Pre-assembly of the Rail Bracket to the foot section is required before the Foot-End Assist Bar can be attached. Please see page 19.

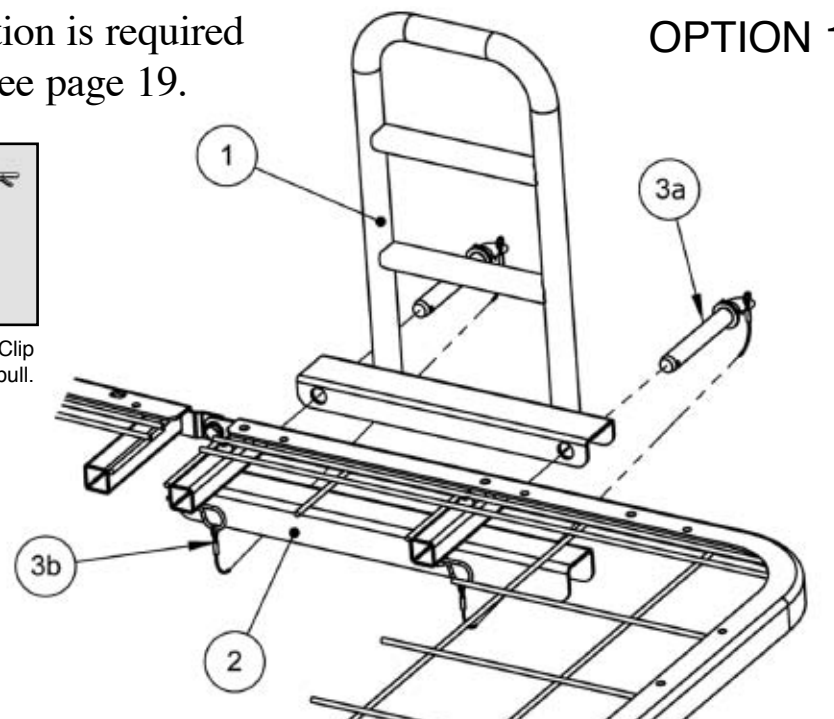
1. With the Assist Bar (#1) bracket facing inward toward the bed as shown, align the two holes on the bracket with the first and third holes (from the head-end of the bed) of the pre-welded head deck bracket (#2)
2. For the quick release option, insert the Clevis Pin end of the two Lanyard assemblies (3a) from the outside into the assist bar bracket holes. Insert the hair pins on the opposite end of the lanyard assemblies (3b) into the holes of the clevis pins.
3. For a fixed attachment option, insert two cap screws (#4) from the outside into the assist bar bracket holes. Secure the screws by attaching two Thin Nylon Lock Nuts (#5). Tighten with two 13/16 wrenches.



To safely remove Hair Pin Clip grasp on circular end and pull.



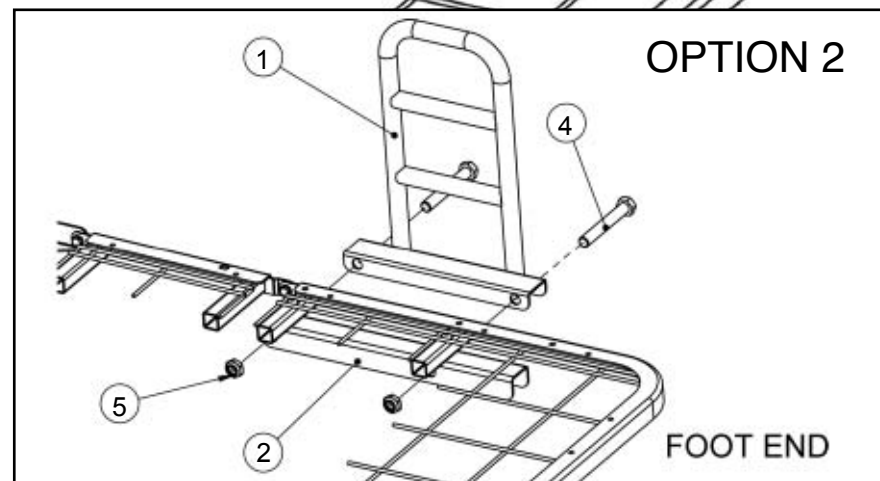
Close-up of Hair Pin Clip (#8) inserted into hole in Clevis Pin (#7)



OPTION 1

### Order Kit #ZA80350 - Includes Bracket and Hardware

Item #	Qty.	Part #	Description
1	1	999-0803-902G	Assist Bar - Foot End
2	1	999-0786-995 (included)	Attach Foot Rail Bracket (see page 19)
not shown	2	100-4710-003	1.00" Dia. End Cap
Option 1: Quick Release (in Hdw Bag 999-0803-905)			
3	2	999-0784-100	Quick Release Lanyard Assembly
Option 2: Fixed Attachment (in Hdw Bag 999-0803-905)			
4	2	100-5463-004	5/8-11 x 4.50" Hex Head Cap Screw
5	2	100-6763-001	5/8-11 Thin Nylon Lock Nut



OPTION 2

FOOT END



**WARNING:** The mattress support platform should always be placed in the flat position when not attended.

When assessing the Risk for Entrapment, you need to consider your bed, mattress, head- and footboards, half rails, assist bars, and other accessories as an entire system. All bed systems are evaluated for compliance to the FDA/CDRH "Hospital Bed System Dimensional and Assessment Guidance to Reduce Entrapment" guidelines.

A resident/patient's condition could lead to resident/patient entrapment. It is extremely important to review the resident/patient's physical and mental condition, and initiate an appropriate individual care plan to address any entrapment risks.

# A

## CESSORY ASSEMBLY - HEAD-END ASSIST BAR

1. With the Assist Bar (#1) bracket facing inward toward the bed as shown, align the two holes on the bracket with the first and third holes (from the head-end of the bed) of the pre-welded head deck bracket (#2)
2. For the quick release option, insert the Clevis Pin end of the two Lanyard assemblies (3a) from the outside into the assist bar bracket holes. Insert the hair pins on the opposite end of the lanyard assemblies (3b) into the holes of the clevis pins.
3. For a fixed attachment option, insert two cap screws (#4) from the outside into the assist bar bracket holes. Secure the screws by attaching two Thin Nylon Lock Nuts (#5).

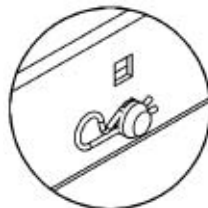


To safely remove Hair Pin Clip grasp on circular end and pull.

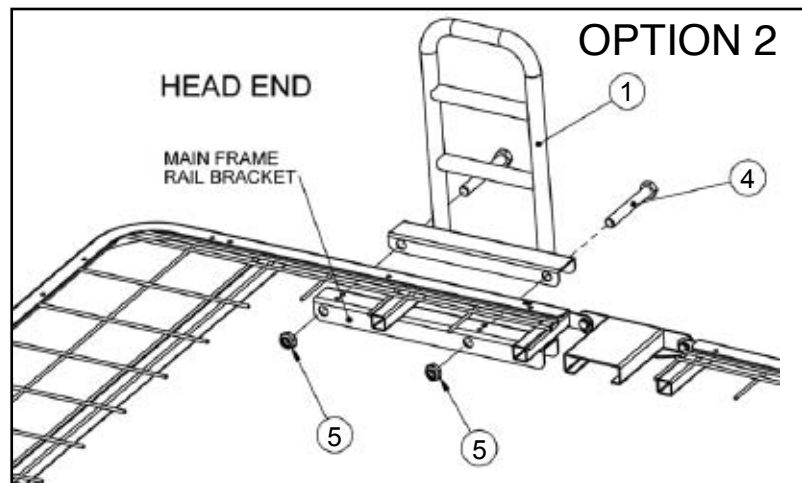
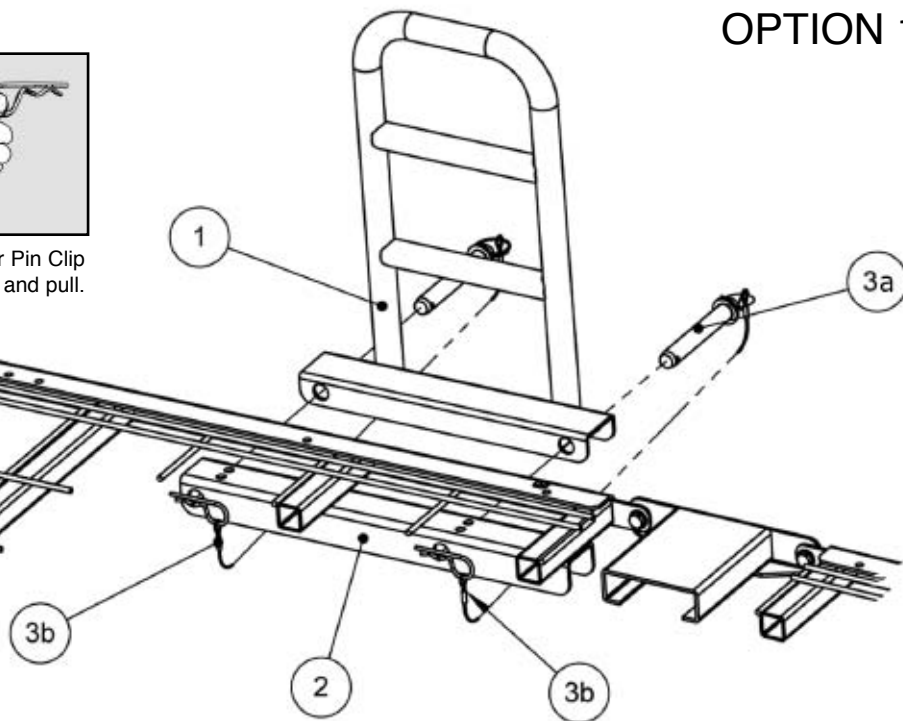
OPTION 1

### Order Kit #ZA80300

Item #	Qty.	Part #	Description
1	1	999-0803-902G	Assist Bar - Head End
2	1	-	Head Deck Rail Bracket (pre-welded on deck)
not shown	2	100-4710-003	1.00" Dia. End Caps
Quick Release Option 1 (in Hdw Bag 999-0803-905)			
3	2	999-0784-100	Quick Release Lanyard Assembly
Fixed Attachment Option 2 (in Hdw Bag 999-0803-905)			
4	2	100-5463-004	5/8-11 x 4.50" Hex Head Cap Screw
5	2	100-6763-001	5/8-11 Thin Nylon Lock Nut



Close-up of Hair Pin Clip (#8) inserted into hole in Clevis Pin (#7)



**WARNING:** The mattress support platform should always be placed in the flat position when not attended.

When assessing the Risk for Entrapment, you need to consider your bed, mattress, head- and footboards, half rails, assist bars, and other accessories as an entire system. All bed systems are evaluated for compliance to the FDA/CDRH "Hospital Bed System Dimensional and Assessment Guidance to Reduce Entrapment" guidelines.

A resident/patient's condition could lead to resident/patient entrapment. It is extremely important to review the resident/patient's physical and mental condition, and initiate an appropriate individual care plan to address any entrapment risks.



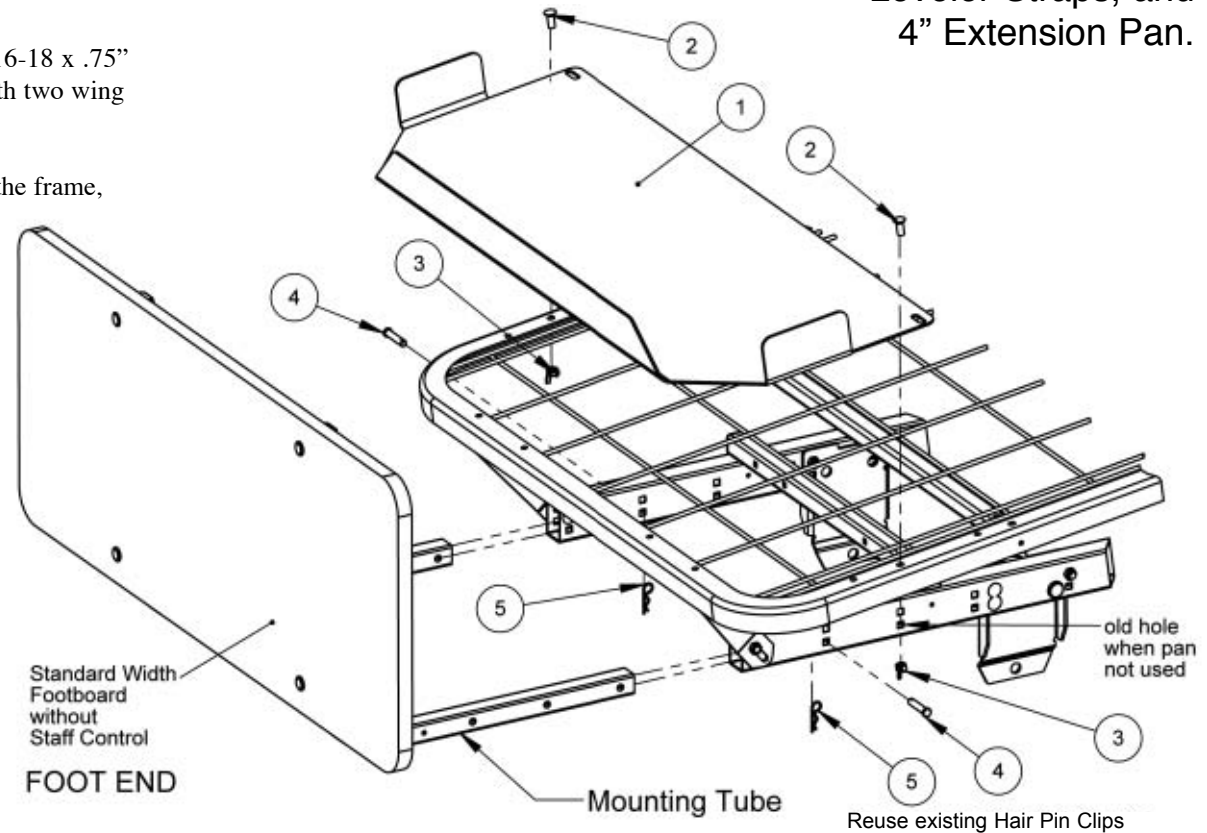
# A

# CESSORY ASSEMBLY - STANDARD 4" EXTENSION PAN KIT

## ASSEMBLY INSTRUCTIONS

1. Raise the bed to a comfortable working height and elevate the knee deck to its highest position. Now unplug the power cord.
2. Separate the footboard assembly from the main frame by removing the existing clevis pins and hair pin clips. Put aside hardware. You will reuse the clevis pins and hair pin clips in step 4 below.
3. Attach the standard 4" extension pan (#1) to the foot deck using two 5/16-18 x .75" carriage bolts (#2) through the top designated holes and secure tightly with two wing nuts (#3) from the bottom.
4. Now reinstall the footboard assembly by sliding the mounting tubes into the frame, lining up the holes as shown (Note: The last hole in the tube will now be one hole closer to the end of the main frame). Re-insert the 5/16 x 1.75" clevis pins (#4) from the outside in and secure with 1-9/16 hair pin clips (#5).
5. Replug the power cord and verify that all bed functions work properly and all parts have adequate clearance.

**PICTURED:**  
Matrix II Foot End with  
Standard- Footboard,  
Leveler Straps, and  
4" Extension Pan.



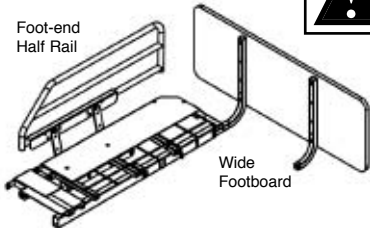
**STANDARD KIT: #ZA71900 (Includes Items 1 - 4)**  
Hardware Bag 999-0719-995)

Item #	Qty.	Part #	Description
1	1	999-0719-001G	Standard 4" Extension Pan
2	2	100-5231-001	5/16-18 x .75" Carriage Bolt
3	2	100-6931-001	5/16-18 Wing Nut
4	2	100-7931-006	5/16 x 1.75" Clevis Pin w/Hole
5	2	100-2001-006	1-9/16 Hair Pin Clip (Use existing)

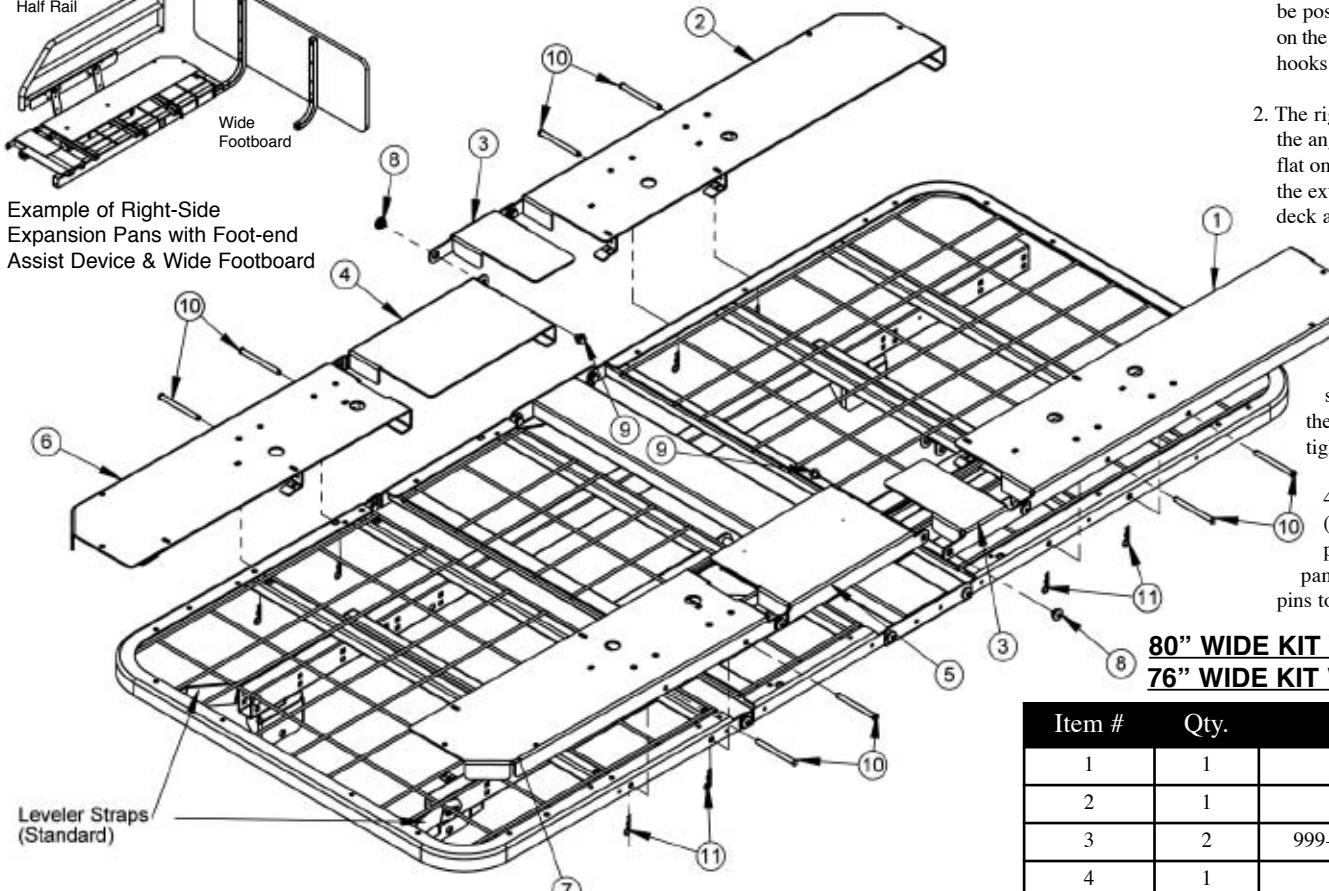
# A

# CESSORY ASSEMBLY - 42" WIDE DECK (ORDER KIT# ZA811000)

**WARNING:** To reduce the risk of entrapment it is highly recommended to include both wide head- & footboards and assist devices when purchasing any 42" expansion kit. A variety of complete kits are available.



Example of Right-Side Expansion Pans with Foot-end Assist Device & Wide Footboard



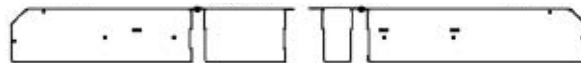
Leveler Straps (Standard)

**Packaged in four assemblies for easy assembly (kit includes all mounting hardware)**

5/16-18 Machine Screws    Self-Wrenching Nuts



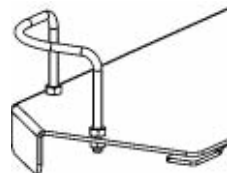
**Right Side Foot Assembly    Right Head Foot Assembly**



**Left Side Foot Assembly    Left Side Head Assembly**



**Wide Kit Mattress Retainers**



The Matrix II expansion kit uses special bolt-on mattress retainers (999-0810-008) ORDER KIT# 999-0810-000 for two retainers.

## ASSEMBLY INSTRUCTIONS

1. Align the right-hand foot assembly above the foot and knee decks with the angle hooks facing downward and toward the foot end. The right knee extension (#4) hook should be positioned just above the knee deck (toward the head end). Place the assembly flat on the two decks making sure they are flush with the decks' sides. Slide the foot extension's hooks onto the foot-end decks. Follow the same procedure for the left side.
2. The right-hand head assembly should be aligned above the head-deck as shown, with the angle hook positioned downward and just above the head deck. Place the assembly flat on the head deck and seat pan making sure they are flush with the deck's side. Slide the extension assembly toward the foot end to lock the extension's hooks onto the head deck and pan seat. **Make sure that the right-hand seat pan extension (#3) is on the outside of the right-hand knee extension (#4).** Follow the same procedure for the left side.
3. Locate the two 5/16-18 x .375" Hex Washer Head Machine Screws (#9) and the two Self-Wrenching Nuts (#8) in your hardware bag. From the outside, insert a self-wrenching nut so that the square part of the nut fits into the square hole of the head assembly mounting arm and the end extends through the hole in the foot mounting arm. From the inside, screw in a machine screw and tighten using a 1/2" wrench. Follow the same procedure for the opposite side.
4. Locate the eight 5/16 x 3.50" Clevis Pins (#10) and eight 1-9/16 Hair Pin Clips (#11) in your hardware bag. From the outside, insert the clevis pins through the pre-drilled holes in the sides of the right- and left-hand head and foot expansion pans. From the inside, insert the hair pin clips into the exposed holes on the clevis pins to secure the pins to all decks.

**80" WIDE KIT WITHOUT BOARDS: #ZA811000 (Includes Items 1 - 11)**  
**76" WIDE KIT WITHOUT BOARDS: #ZA846000 (Includes Items 1 - 11)**

Item #	Qty.	Part #	Description
1	1	999-0811-921G	Left-Hand Head Extension Weldment
2	1	999-0811-922G	Right-Hand Head Extension Weldment
3	2	999-0811-004G & 005G	Left- & Right-Hand Seat Pan Extension
4	1	999-0810-012G	Right-Hand Knee Extension
5	1	999-0810-002G	Left-Hand Knee Extension
6	1	999-0811-932G	80" Right-Hand Foot Extension Weldment
7	1	999-0811-931G	80" Left-Hand Foot Extension Weldment
Not Shown	1	999-0846-932G	Opt. 76" Right-Hand Foot Extension Weldment
Not Shown	1	999-0846-931G	Opt. 76" Left-Hand Foot Extension Weldment
<b>Both Kits Include Hardware Box: 999-0811-950 which has the following . . .</b>			
8	6	999-0032-010	Self-Wrenching Nut (4 pre-assembled on decks)
9	6	100-5431-002	5/16-18 x .375" HWHMS (4 pre-assembled on decks)
10	8	100-7931-008	5/16 x 3.50" Clevis Pin w/Hole
11	8	100-2001-006	1-9/16 Hair Pin Clip

# A

# CESSORY ASSEMBLY - 4" WIDE DECK EXTENSION PAN KIT

## ASSEMBLY INSTRUCTIONS

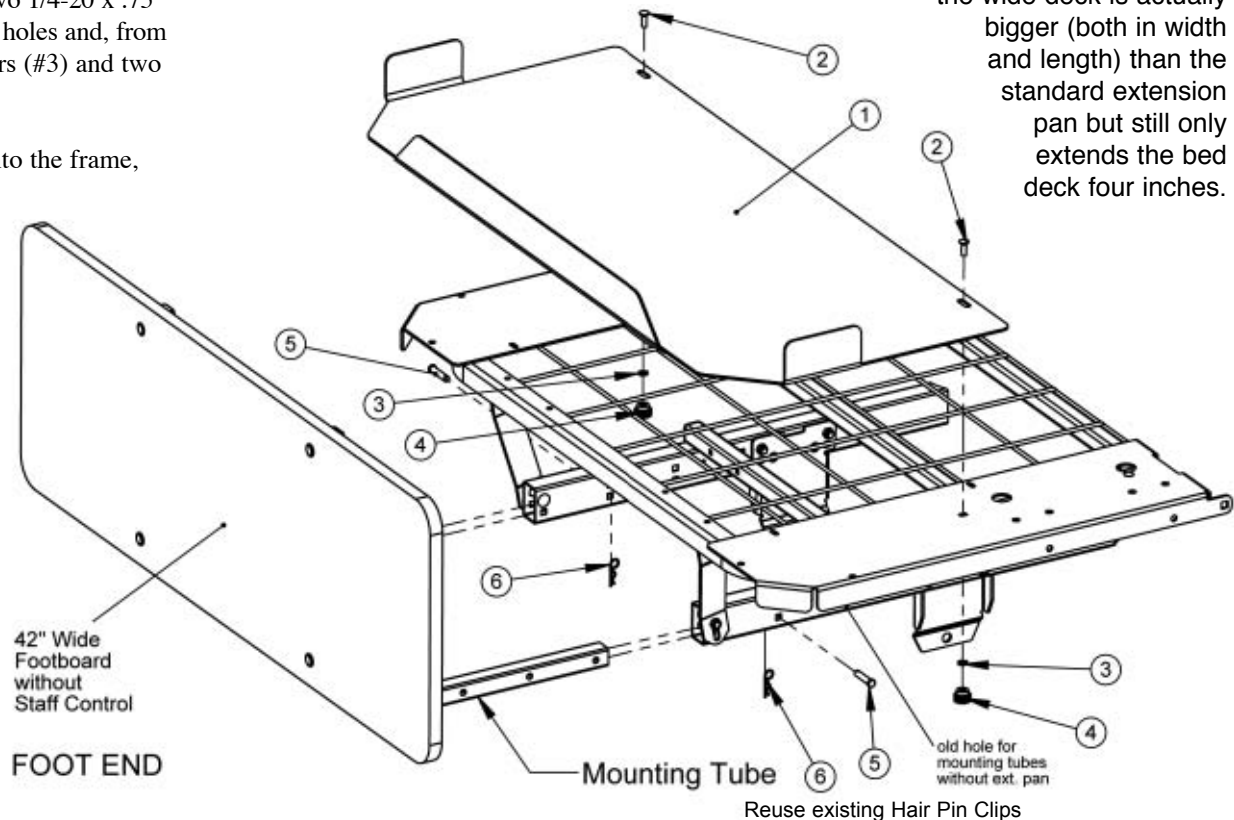
1. Raise the bed to a comfortable working height and elevate the knee deck to its highest position. Now unplug the power cord.
2. Separate the footboard assembly from the main frame by removing the existing clevis pins and hair pin clips. Put aside hardware. You will reuse the clevis pins and hair pin clips in step 4 below.
3. Attach the wide 4" extension pan (#1) to the foot deck by inserting the two 1/4-20 x .75" Carriage Bolts (#2) from your hardware bag through the top designated holes and, from the bottom, secure the pan tightly to the deck with two Spring Washers (#3) and two Pan Knobs (#4).
4. Now reinstall the footboard assembly by sliding the mounting tubes into the frame, lining up the holes as shown (Note: The last hole in the tube will now be one hole closer to the end of the main frame). Re-insert the 5/16 x 1.75" clevis pins (#5) from the outside in and secure with 1-9/16 hair pin clips (#6).
5. Replug the power cord and verify that all bed functions work properly and all parts have adequate clearance.

**STANDARD KIT: #ZA82100 (Includes Items 1 - 5)**  
Hardware Bag 999-0821-995)

Item #	Qty.	Part #	Description
1	1	999-0821-001G	4" Wide Kit Extension Pan
2	2	100-5225-009	1/4-20 x .75" Carriage Bolt
3	2	100-8525-001	1/4 Spring Lock Washer
4	2	999-0810-009	Black Pan Knob
5	2	100-7931-006	5/16 x 1.75" Clevis Pin w/Hole
6	2	100-2001-006	1-9/16 Hair Pin Clip (Use existing)

**PICTURED:**  
Matrix II Foot End with  
Standard Leveler Straps, Wide  
Footboard, and Wide Deck  
4" Extension Pan.

**NOTE:**  
The Extension Pan for the wide deck is actually bigger (both in width and length) than the standard extension pan but still only extends the bed deck four inches.

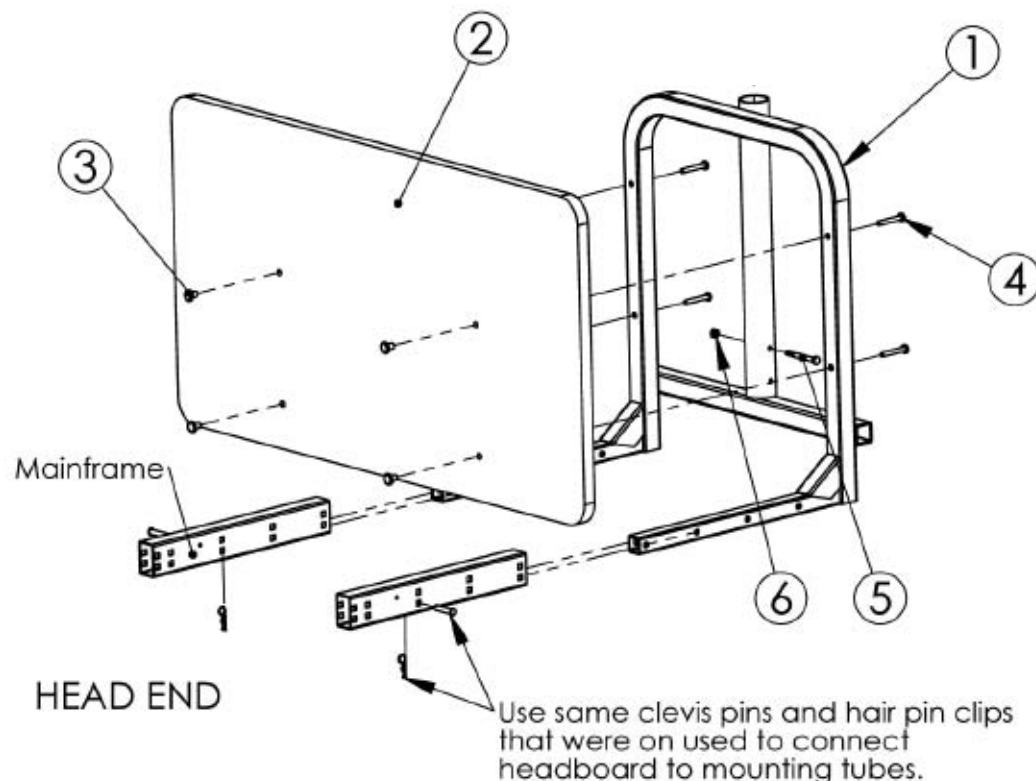


# A

## CESSORY ASSEMBLY - TRAPEZE SUPPORT

Assembly Kit# 999-0790-901

1. Remove the headboard panel assembly if previously assembled to bed by pulling out the Clevis Pins and Hair Pin Clips that attach the main frame tubes to the headboard's mounting tubes and set aside.
2. Detach the headboard panel from the mounting tubes by removing the four 1/4-20 x 1.5" Machine Screws from the mounting tubes.
3. Assemble the Trapeze Support to the bed frame using the two Clevis Pins and Hair Pin Clips you previously removed from the headboard's mounting tubes.
4. Insert a 1/4-20 x 2.5" Carriage Bolt (#5) into the vertical support as shown and fasten with a 1/4-20 Hex Head Lock Nut (#6).
5. Assemble the headboard to Trapeze Support using the supplied four 1/4-20 x 1.75" Machine Screws (#3) from your hardware bag, threading them through the headboard into the 1/4-20 inserts. DO NOT OVERTIGHTEN.



6. **OPTIONAL—FOR TMI TRAPEZE BAR**  
Insert the Sleeve (#7) into the vertical support with the slot on the bottom as shown. Rotate the sleeve until it falls into place over the bolt and into a locked position. **(Top of Sleeve will be flush with top of vertical support on the Trapeze Adaptor.)**

### TOOLS NEEDED:

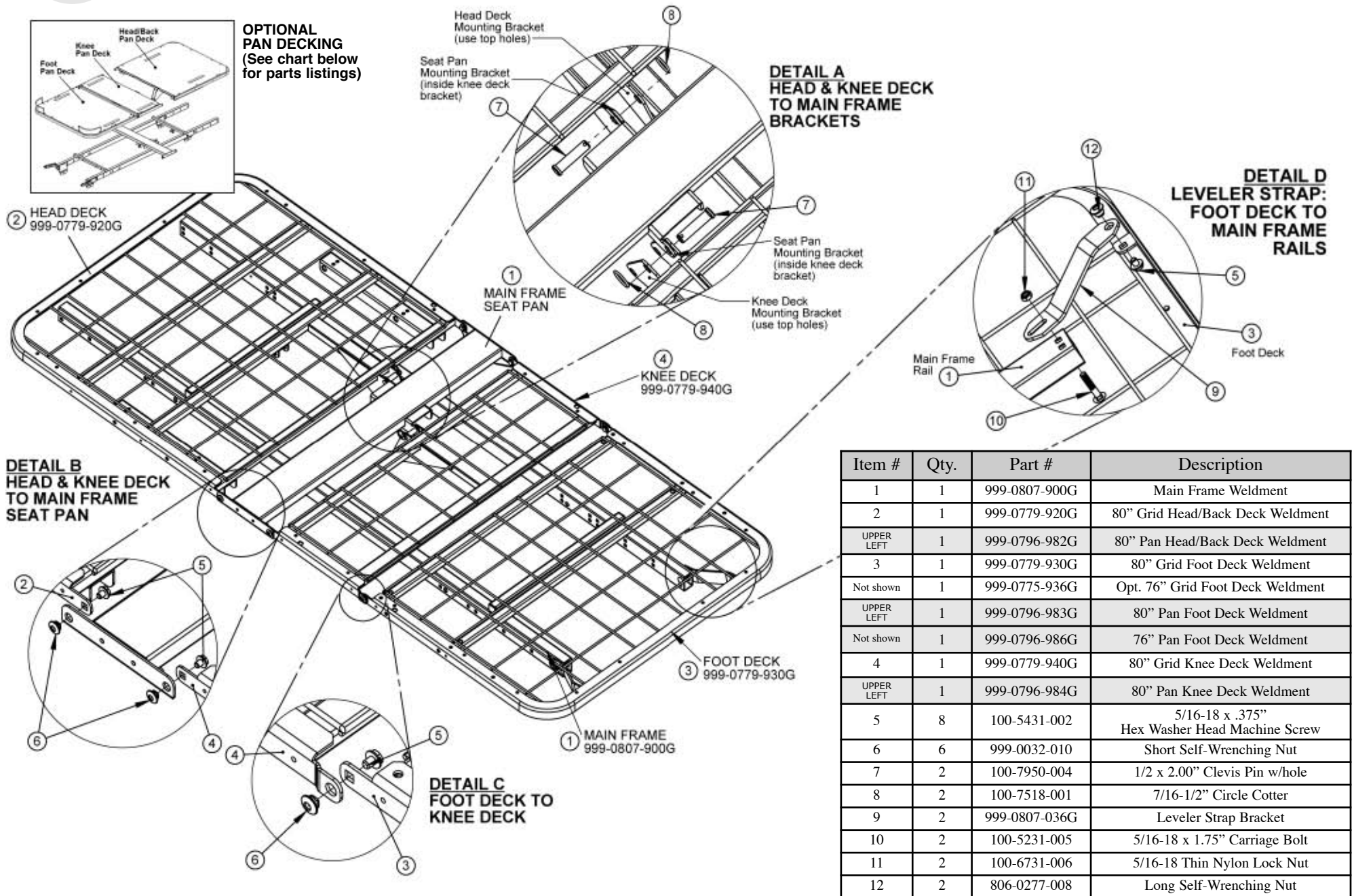
(1) 7/16" wrench & (1) phillips screwdriver

Item #	Qty.	Part #	Description
1	1	999-0790-901G	Trapeze Support Assembly
2	1	Headboard	Headboard - 8" Boring
3	4	100-7025-004	1/4-20 x .60 Insert
4	4	100-5425-014	1/4-20 x 1.75" Phillips Pan Head Machine Screw
5	1	100-5425-059	1/4-20 x 2.50" Hex Head Cap Screw
6	1	100-6725-005	1/4-20 Hex Head Lock Nut

# PARTS & HARDWARE

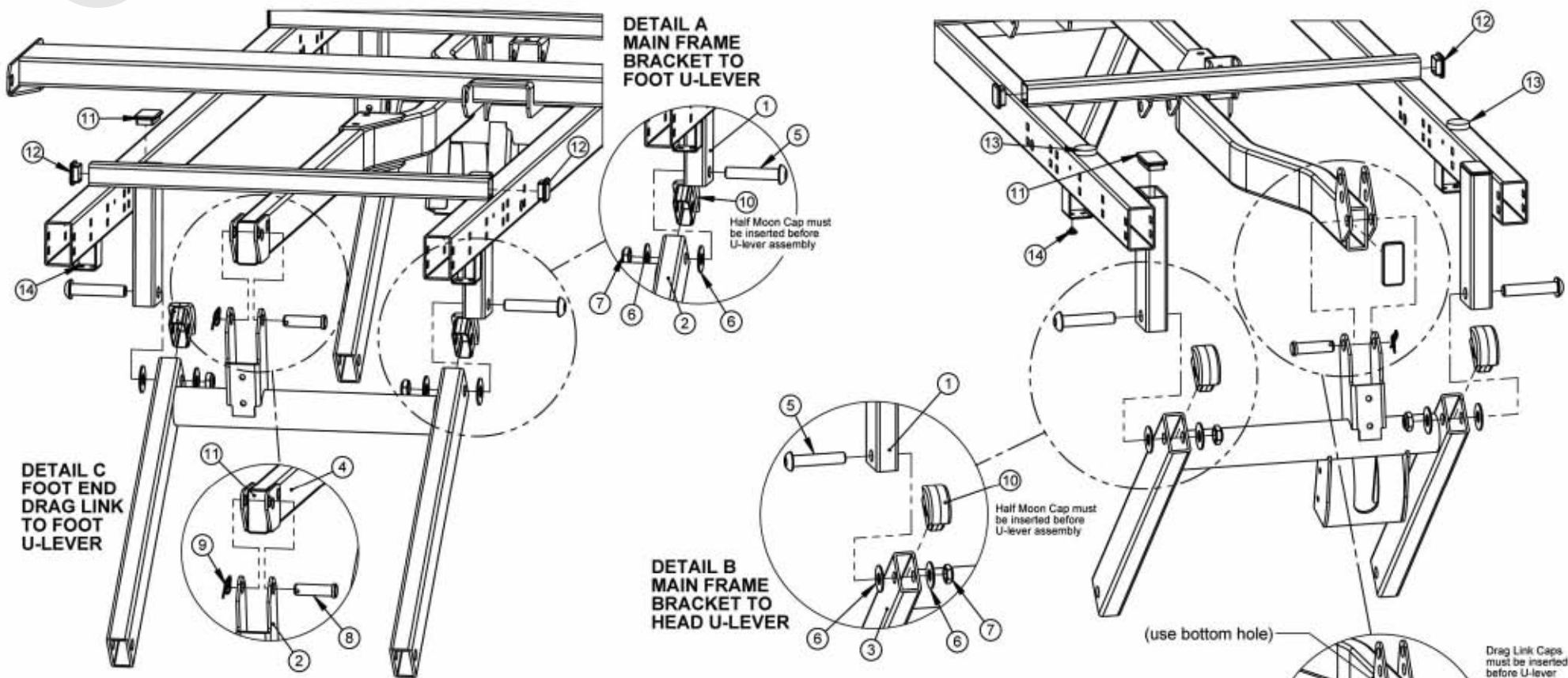
# A

## ASSEMBLY OF HEAD, KNEE, & FOOT DECKS TO MAIN FRAME



# A

# ASSEMBLY OF MAIN FRAME TO U-LEVERS AND DRAG LINK



**DETAIL C  
FOOT END  
DRAG LINK  
TO FOOT  
U-LEVER**

**DETAIL A  
MAIN FRAME  
BRACKET TO  
FOOT U-LEVER**

**DETAIL B  
MAIN FRAME  
BRACKET TO  
HEAD U-LEVER**

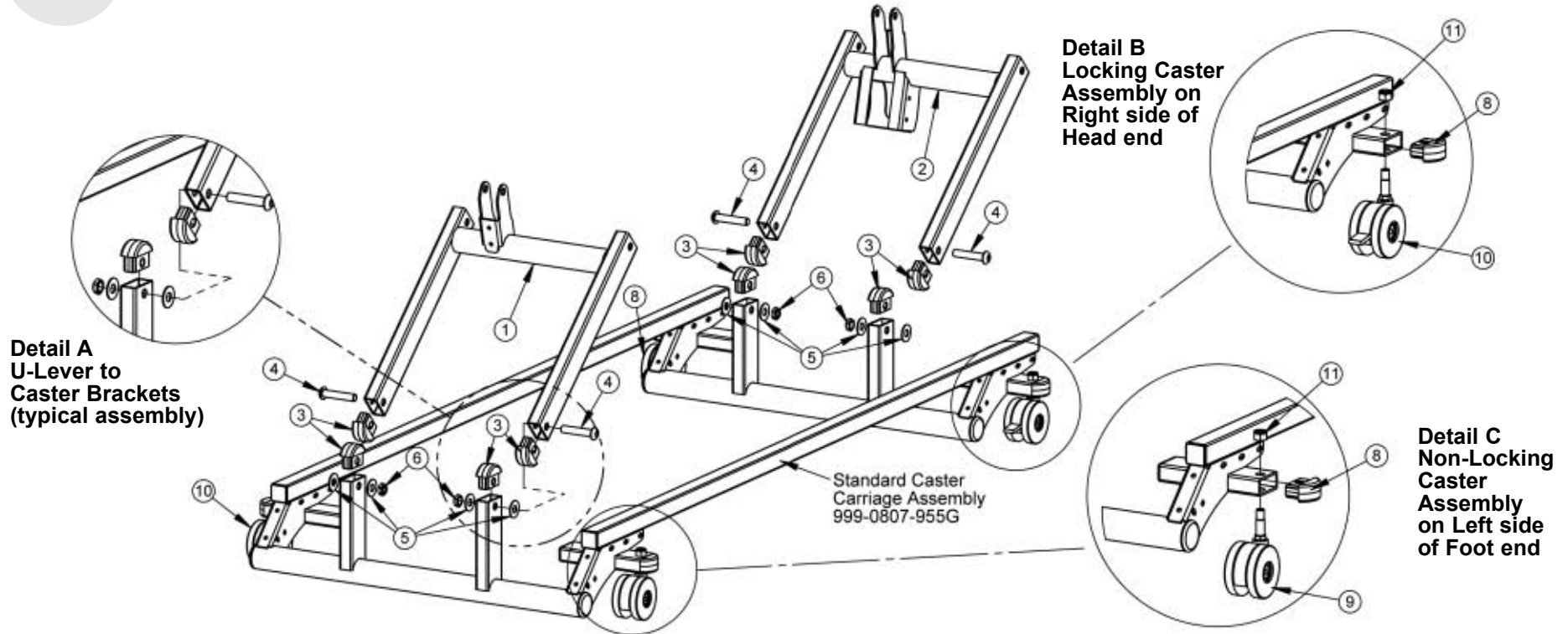
**DETAIL D  
HEAD END DRAG LINK  
TO HEAD U-LEVER**

Item #	Qty.	Part #	Description
1	1	999-0807-900G	Main Frame Weldment
2	1	999-0807-903G	Foot U-Lever Weldment
3	1	999-0807-913G	Head U-Lever Weldment
4	1	999-0807-906G	Drag Link Weldment
5	4	999-0779-100	1/2-13" x 2.50" Shoulder Bolt
6	8	100-8601-001	.516ID x 1.25OD x .062Thk Washer
7	4	100-6750-006	1/2-13 Low Nylon Lock Nut

Item #	Qty.	Part #	Description
8	2	100-7950-005	.50" x 1.75" Clevis Pin w/Hole
9	2	100-7500-015	.50" Reg. .62 Rue Ring
10	4	999-0775-001	Half Moon Cap
11	6	100-4700-017	1.00" x 2.00" Rect. Tube End Cap
12	4	100-4700-015	1.00" Square Tube End Cap
13	2	100-8600-015	1.00" x .25" Thk Duopreen Disk
14	4	100-4550-010	Button Stop

# A

## ASSEMBLY OF U-LEVERS TO STD. CASTER CARRIAGE - 999-0807-955G



Item #	Qty.	Part #	Description
1	1	999-0807-903G	Foot U-Lever Weldment
2	1	999-0807-913G	Head U-Lever Weldment
3	4	999-0775-001	Half Moon Cap
4	4	999-0779-100	1/2-13NC x 2.50" Long Button Head Cap Screw (T55)
5	8	100-8601-001	.516ID x 1.25"OD x .062" Thk. Nylon Washer
6	4	100-6750-006	1/2-13 Low Nylon Lock Nut
<b>Standard Caster Carriage Assembly 999-0807-955G Includes the following parts</b>			
7	1	999-0807-905G	Caster Carriage Weldment
8	8	999-0775-001	Half Moon Cap (on Locking Carriage)
9	2	100-6330-061	3" Twin Non-Locking Caster
10	2	100-6330-062	3" Twin Locking Caster
11	4	100-6744-001	7/16-14 Nylon Lock Nut
12	4	100-4700-017	1.00" x 2.00" Rectangular End Cap
13	4	100-4200-004	1.25" Square Plastic Plug
14	4	100-4717-002	1.75" x 10-12GA Round End Cap

The Standard Caster Carriage (999-0807-955G) should come pre-assembled. Callouts for replacing the casters and caps on both the head and foot end (Details B & C) have been included for your convenience. To attach or detach the standard caster carriage from the Matrix II u-levers, please follow the instructions below.

1. Place the four Half Moon Caps (#3) into the bottoms of both u-levers (#1 & #2) and into the four upright mounting brackets on the Caster Carriage.
2. Locate the four 1/2-13 x 2.50" Button Head Cap Screws (#4) and, from the outside, insert them in the bottom holes of the u-levers.
3. Place a Nylon Washer (#5) onto the ends of each of the exposed ends of the cap screws. Carefully position the u-lever legs onto the upright brackets so that the nylon washers rest between them. Push the cap screws through the holes in the upright brackets.
4. Slide the remaining Nylon Washers (#5) onto the cap screws and secure using four 1/2-13 Nylon Lock Nuts (#6). Tighten all hardware using a 5/16 crescent/socket wrench and a T55 torx wrench.



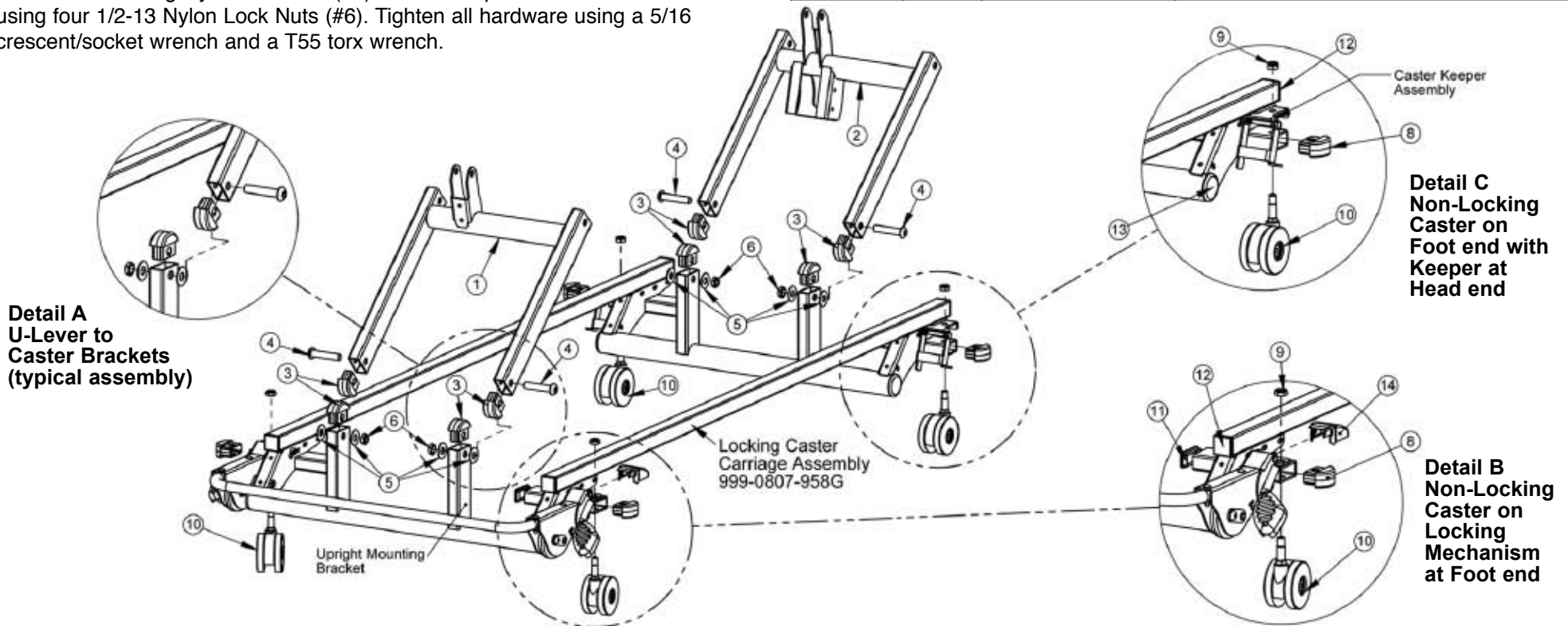
# A

# ASSEMBLY OF U-LEVERS TO LOCKING CASTER CARRIAGE - 999-0807-958G

The Caster Carriage with Locking Mechanism (999-0807-958G) should come pre-assembled. Callouts for replacing the casters and caps on both the head and foot end (Details B & C) have been included for your convenience. To attach or detach the locking caster carriage from the Matrix II u-levers, please follow the instructions below.

1. Place the four Half Moon Caps (#3) into the bottoms of both u-levers (#1 & #2) and into the four upright mounting brackets on the Caster Carriage.
2. Locate the four 1/2-13 x 2.50" Button Head Cap Screws (#4) and, from the outside, insert them in the bottom holes of the u-levers.
3. Place a Nylon Washer (#5) onto the ends of each of the exposed ends of the cap screws. Carefully position the u-lever legs onto the upright brackets so that the nylon washers rest between them. Push the cap screws through the holes in the upright brackets.
4. Slide the remaining Nylon Washers (#5) onto the cap screws and secure using four 1/2-13 Nylon Lock Nuts (#6). Tighten all hardware using a 5/16 crescent/socket wrench and a T55 torx wrench.

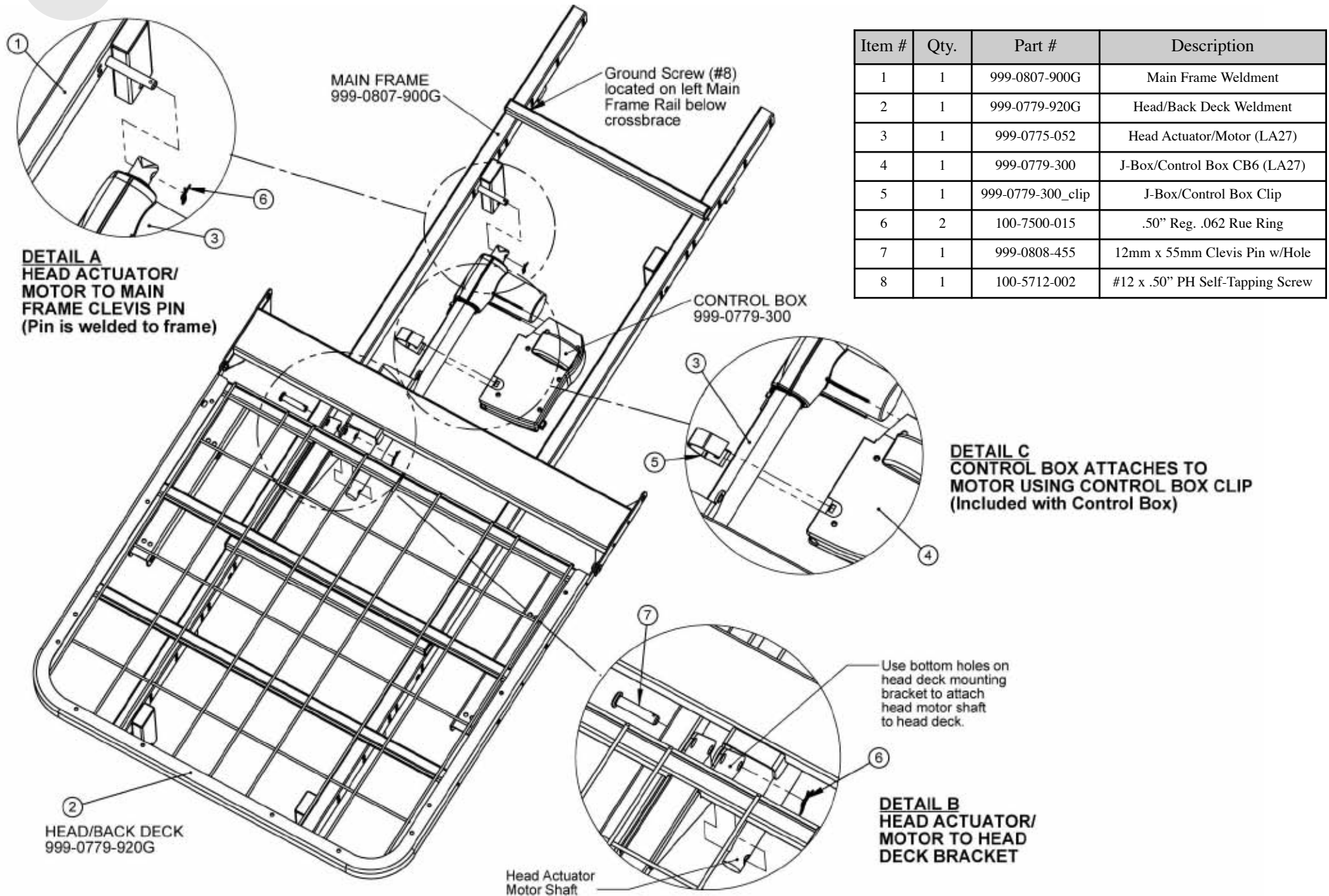
Item #	Qty.	Part #	Description
1	1	999-0807-903G	Foot U-Lever Weldment
2	1	999-0807-913G	Head U-Lever Weldment
3	4	999-0775-001	Half Moon Cap
4	4	999-0779-100	1/2-13NC x 2.50" Large Button Head Cap Screw (T55)
5	8	100-8601-001	.516ID x 1.25"OD x .062"Thk. Nylon Washer
6	4	100-6750-006	1/2-13 Low Nylon Lock Nut
<b>Optional Locking Caster Carriage Assembly (999-0807-958G) includes the following parts:</b>			
7	1	999-0807-905G	Locking Carriage Weldment
8	8	999-0775-001	Half Moon Cap (On Locking Carriage)
9	4	100-6744-002	7/16-14 Thin Nylon Lock Nut
10	4	100-6300-061	3" Twin Non-Locking Caster
11	4	100-4700-017	1.00" x 2.00" Rectangular End Cap
12	4	100-4200-004	1.25" Square Plastic Plug
13	4	100-4717-002	1.75" x 10-12GA Round End Cap
14	2	999-0809-014	Caster Cap (Only on Locking Mechanism)



# ELECTRONICS

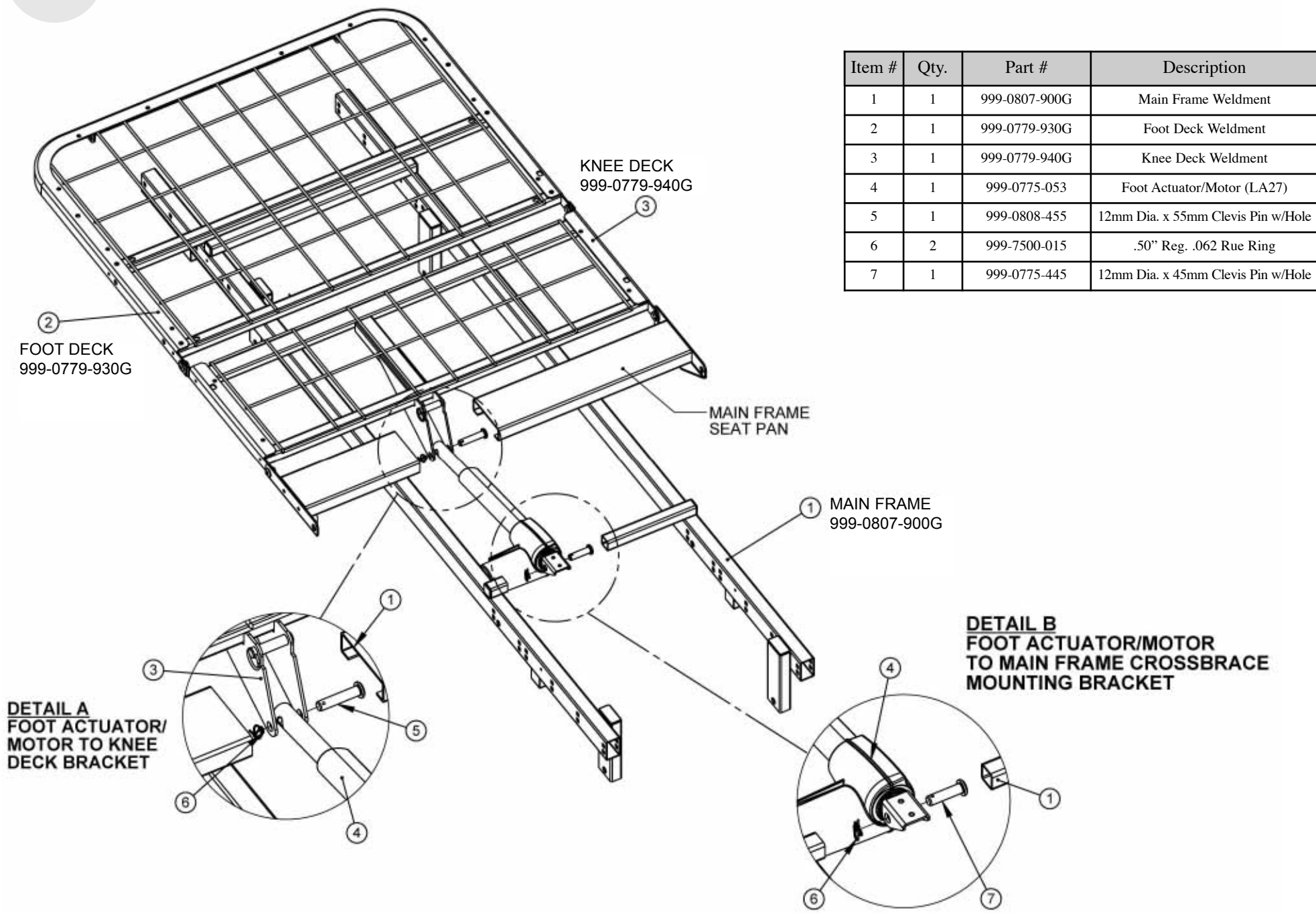
# A

## ASSEMBLY OF HEAD ACTUATOR/MOTOR TO HEAD DECK & FRAME



# A

## ASSEMBLY OF FOOT ACTUATOR/MOTOR TO KNEE DECK & FRAME



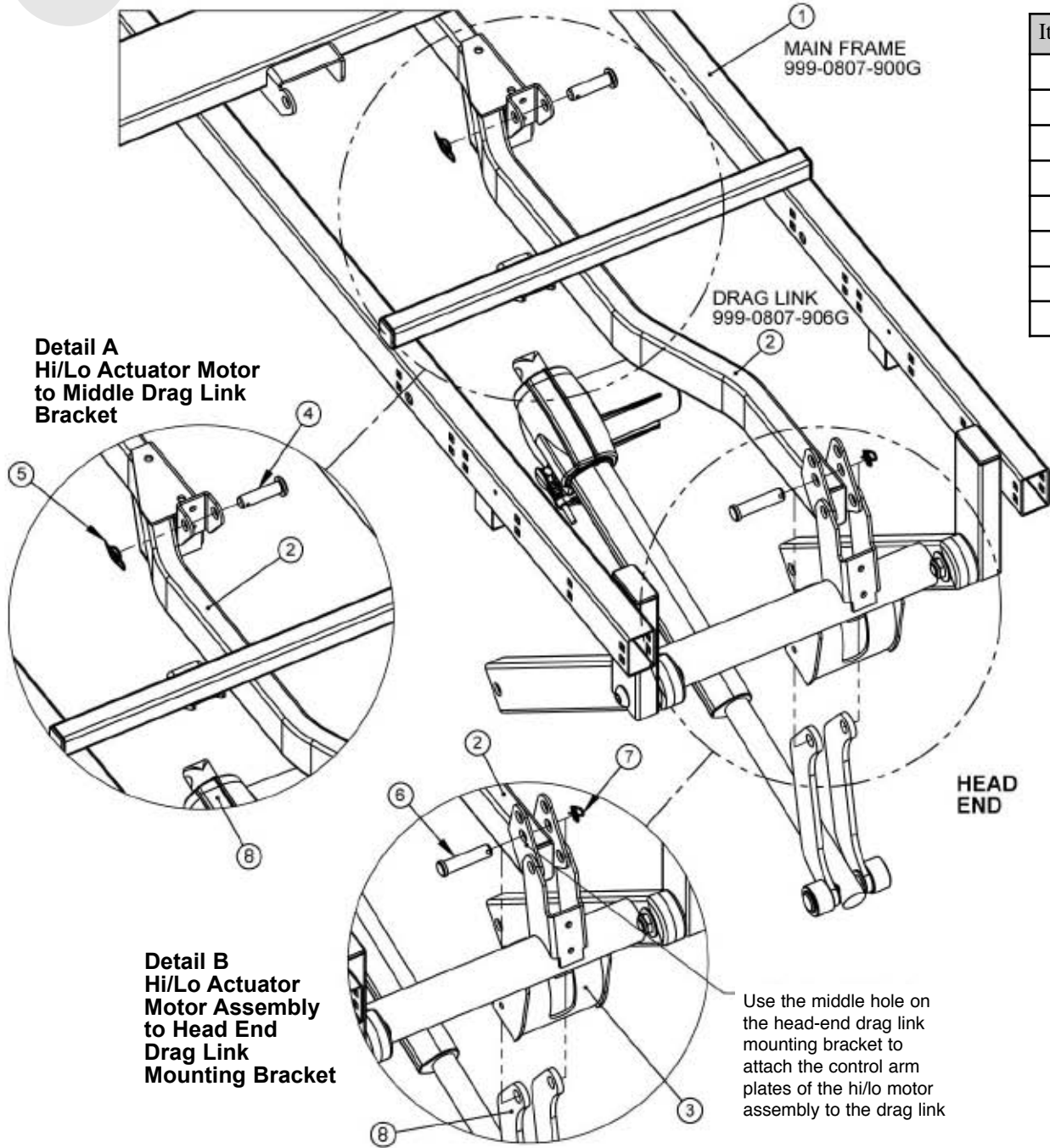
Item #	Qty.	Part #	Description
1	1	999-0807-900G	Main Frame Weldment
2	1	999-0779-930G	Foot Deck Weldment
3	1	999-0779-940G	Knee Deck Weldment
4	1	999-0775-053	Foot Actuator/Motor (LA27)
5	1	999-0808-455	12mm Dia. x 55mm Clevis Pin w/Hole
6	2	999-7500-015	.50" Reg. .062 Rue Ring
7	1	999-0775-445	12mm Dia. x 45mm Clevis Pin w/Hole

**DETAIL A**  
FOOT ACTUATOR/  
MOTOR TO KNEE  
DECK BRACKET

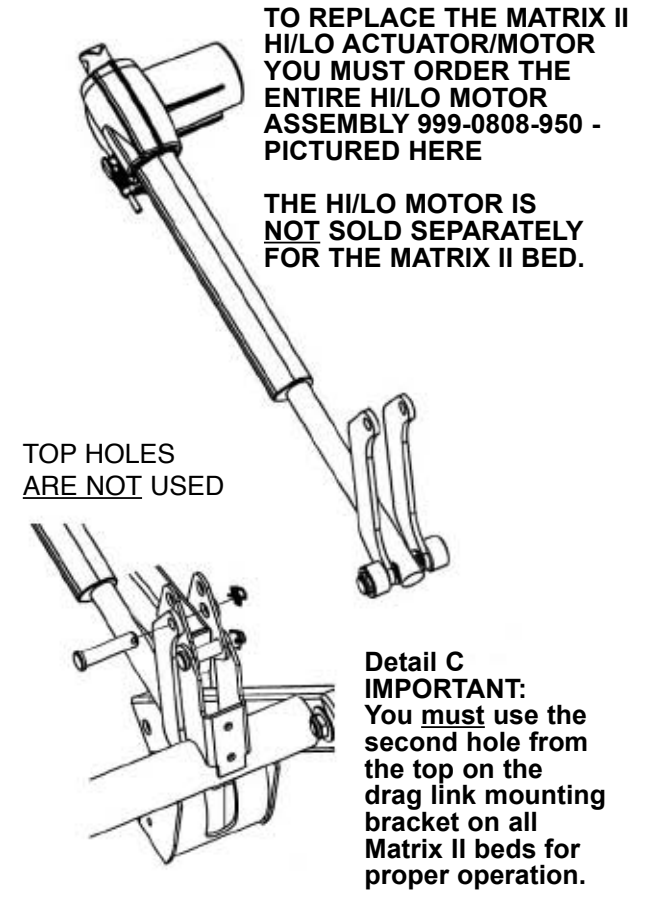
**DETAIL B**  
FOOT ACTUATOR/MOTOR  
TO MAIN FRAME CROSSBRACE  
MOUNTING BRACKET

# A

# ASSEMBLY OF HI/LO ACTUATOR/MOTOR TO DRAG LINK & U-LEVER

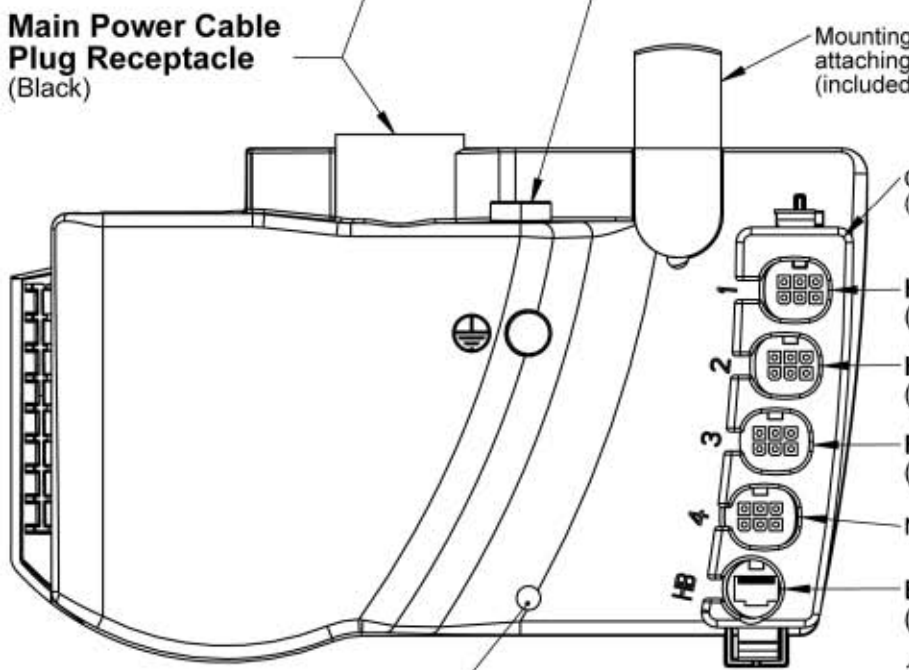
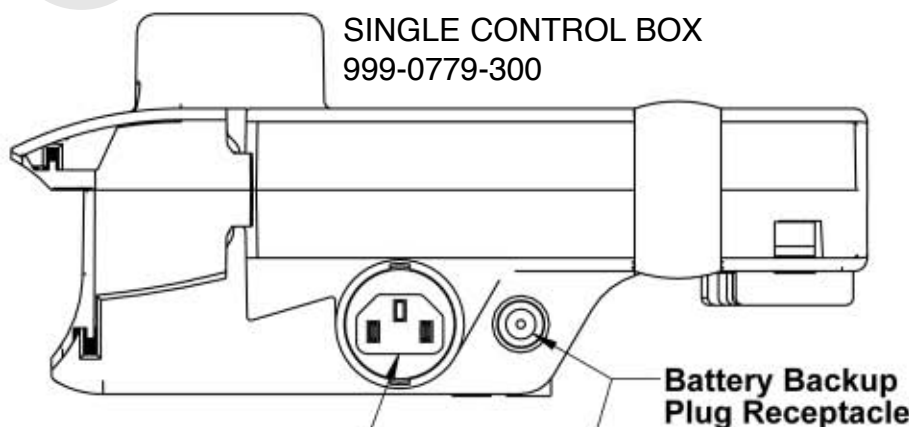


Item #	Qty.	Part #	Description
1	1	999-0807-900G	Main Frame Weldment
2	1	999-0807-906G	Drag Link Weldment
3	1	999-0807-913G	Head-End U-Lever Weldment
4	1	999-0775-445	12mm Dia. x 45mm Clevis Pin w/Hole
5	1	100-2001-006	1-9/16 Hair Pin Clip
6	2	100-7950-004	.50" x 2.00" Clevis Pin w/Hole
7	1	999-7500-015	.50" Reg. .062 Rue Ring
8	1	999-0808-950	Hi/Lo Actuator/Motor Assembly



# CABLING

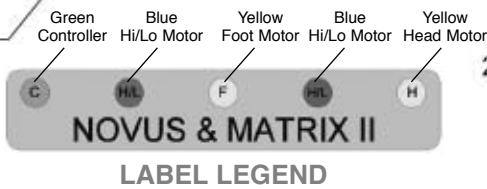
# C CONTROL BOX CABLING CONNECTIONS & CABLES



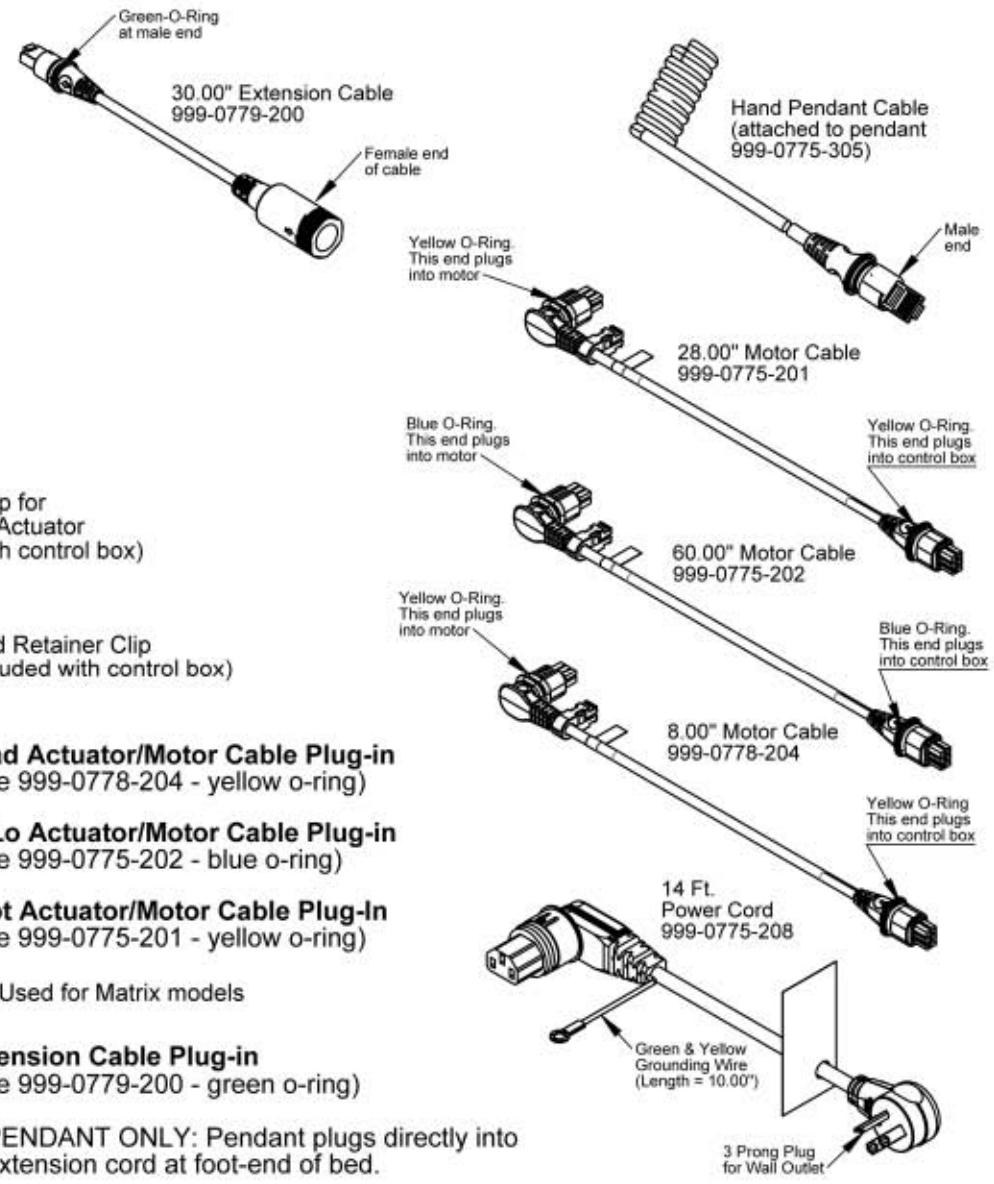
**Power Indicator Light**

1. Green: Getting power

3. Constant orange light and hear clicking when pressing pendant functions: Possibly Bad Control Box



1. PENDANT ONLY: Pendant plugs directly into extension cord at foot-end of bed.
2. PENDANT & NURSE/STAFF CONTROL: Staff control male end plugs into extension cord female end at foot-end of bed. Pendant male end plugs into female end of staff control cable.

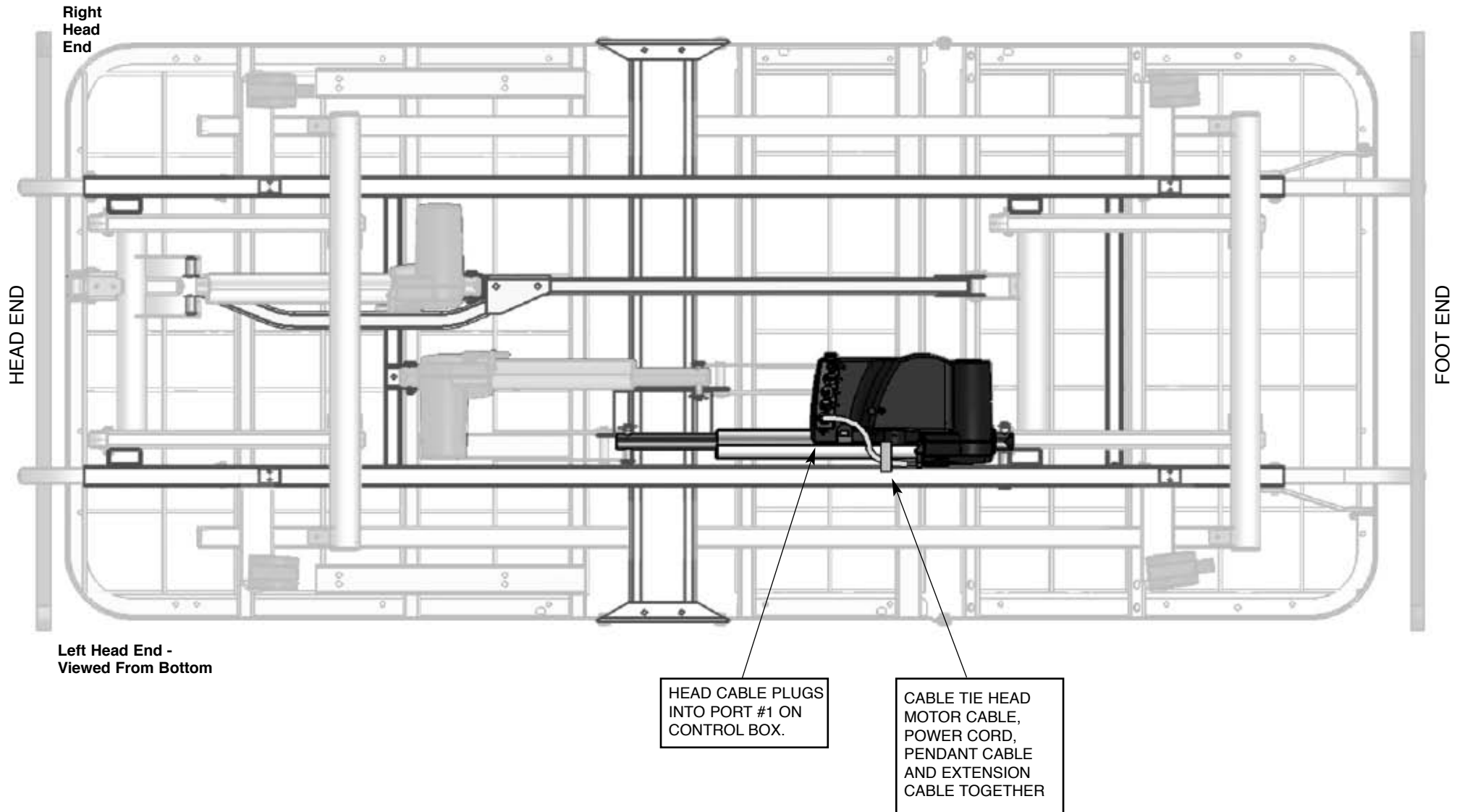




# HEAD MOTOR CABLING (999-0778-204) - VIEWED FROM BOTTOM

## HEAD MOTOR CABLE ROUTING WITH CABLE TIES

The Head Motor Cable (999-0778-204) is very short on the Matrix II bed. It runs directly underneath the control box and plugs in port #1. Cable tie the Head Cable together with the Power Cable, Pendant Cable, and Pendant Extension Cable just above the power cable plug-in as shown.



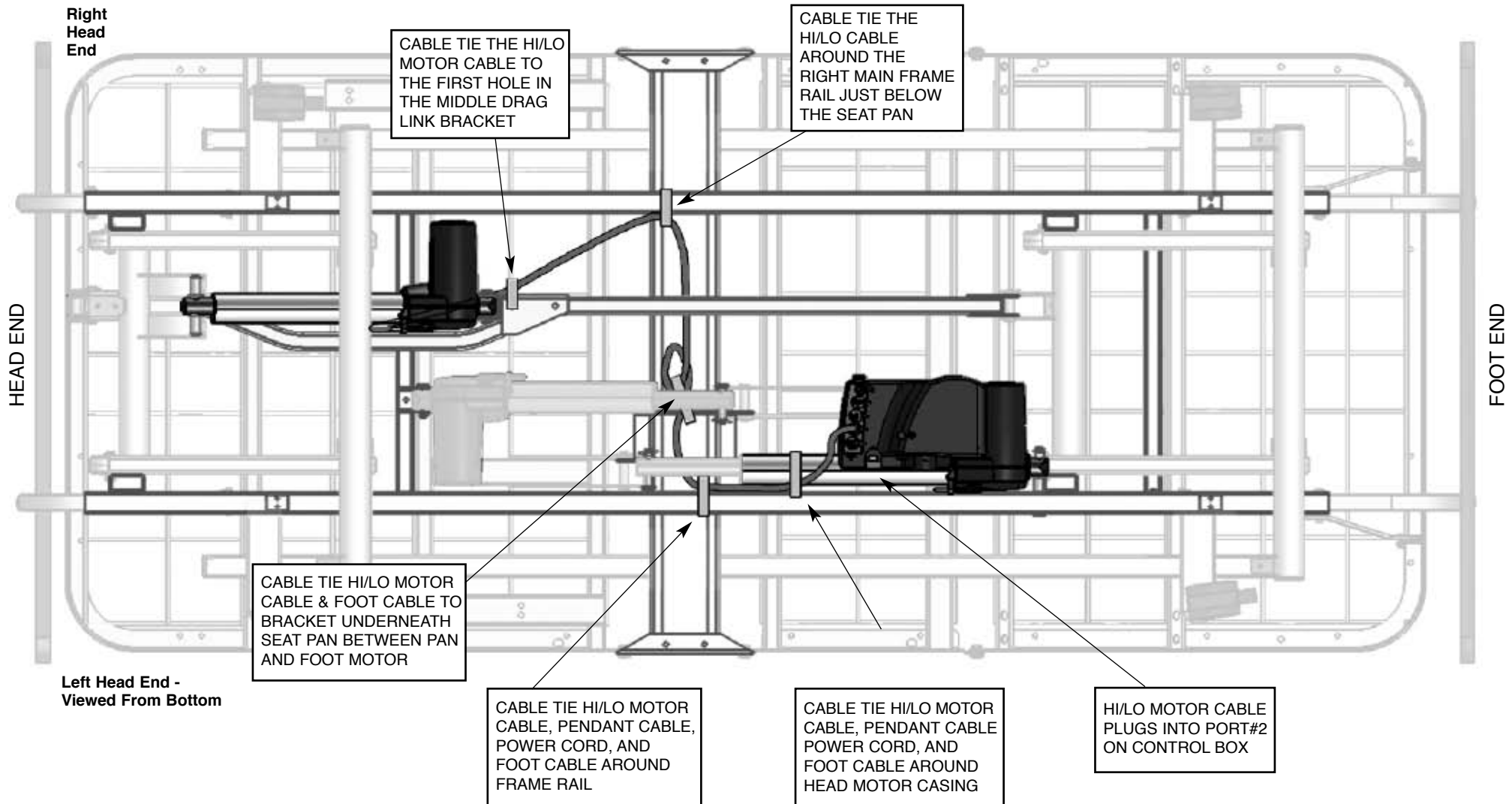


# H

## I/O MOTOR CABLING (999-0775-202) - VIEWED FROM BOTTOM

### HI/LO CABLE ROUTING WITH CABLE TIES

The Matrix II features only one Hi/lo Motor. The Hi/Lo Cable (999-0775-202) runs above the motor (between the motor and the deck) and gets cable tied to the drag link bracket. It then runs across to the right main frame rail, runs underneath the seat pan, runs along the left main frame rail and head motor, and then plugs into port #2 on the control box.

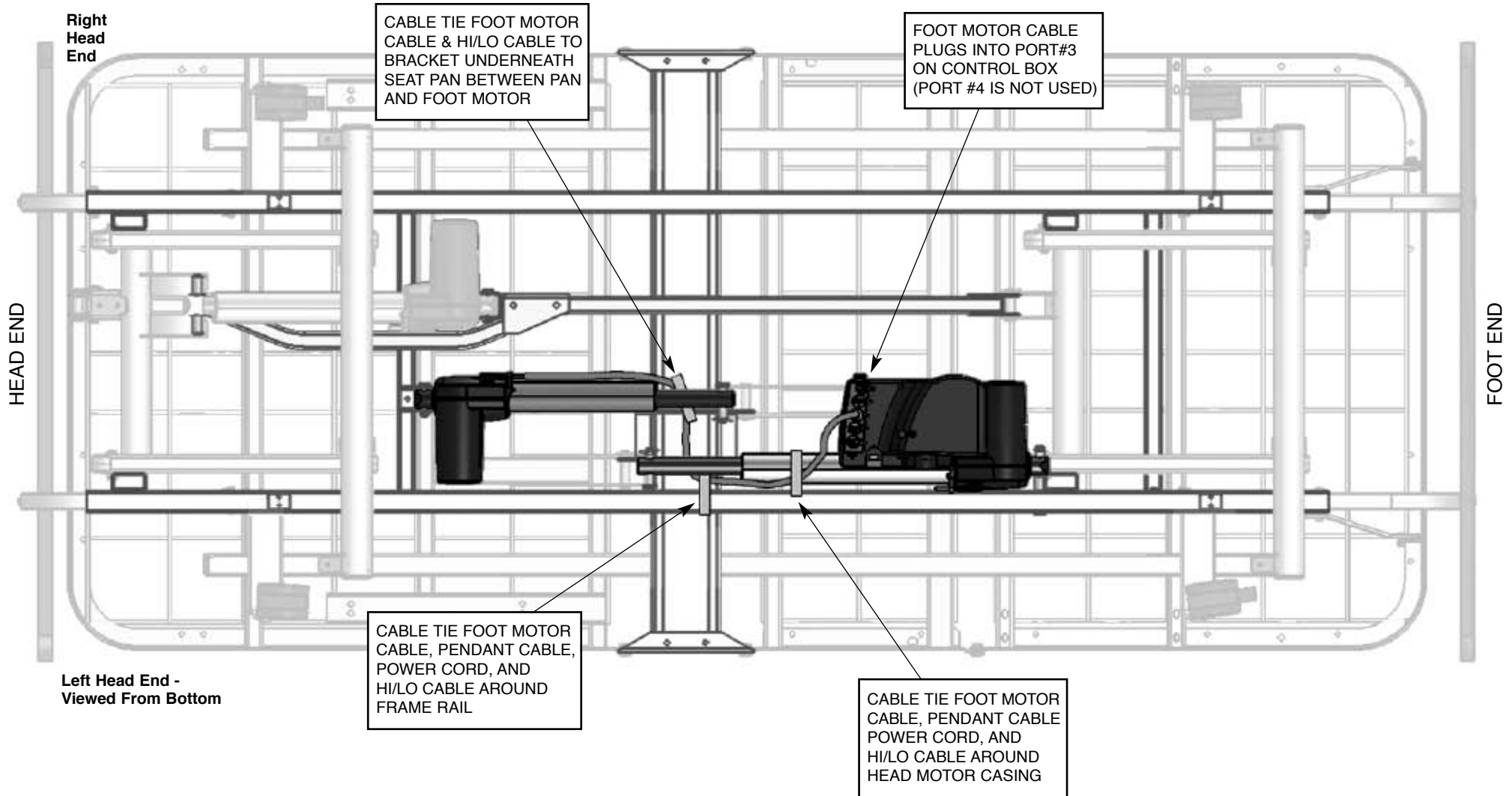


# F

## OOT MOTOR CABLING (999-0775-201) - VIEWED FROM BOTTOM

### FOOT MOTOR CABLE ROUTING WITH CABLE TIES

Foot Motor Cable (999-0775-201) runs along the motor, under the seat pan bracket, along the left side frame rail from Foot Actuator/Motor and plugs into port #3 on the Control Box. Cable tie cable to frame and brackets as indicated.

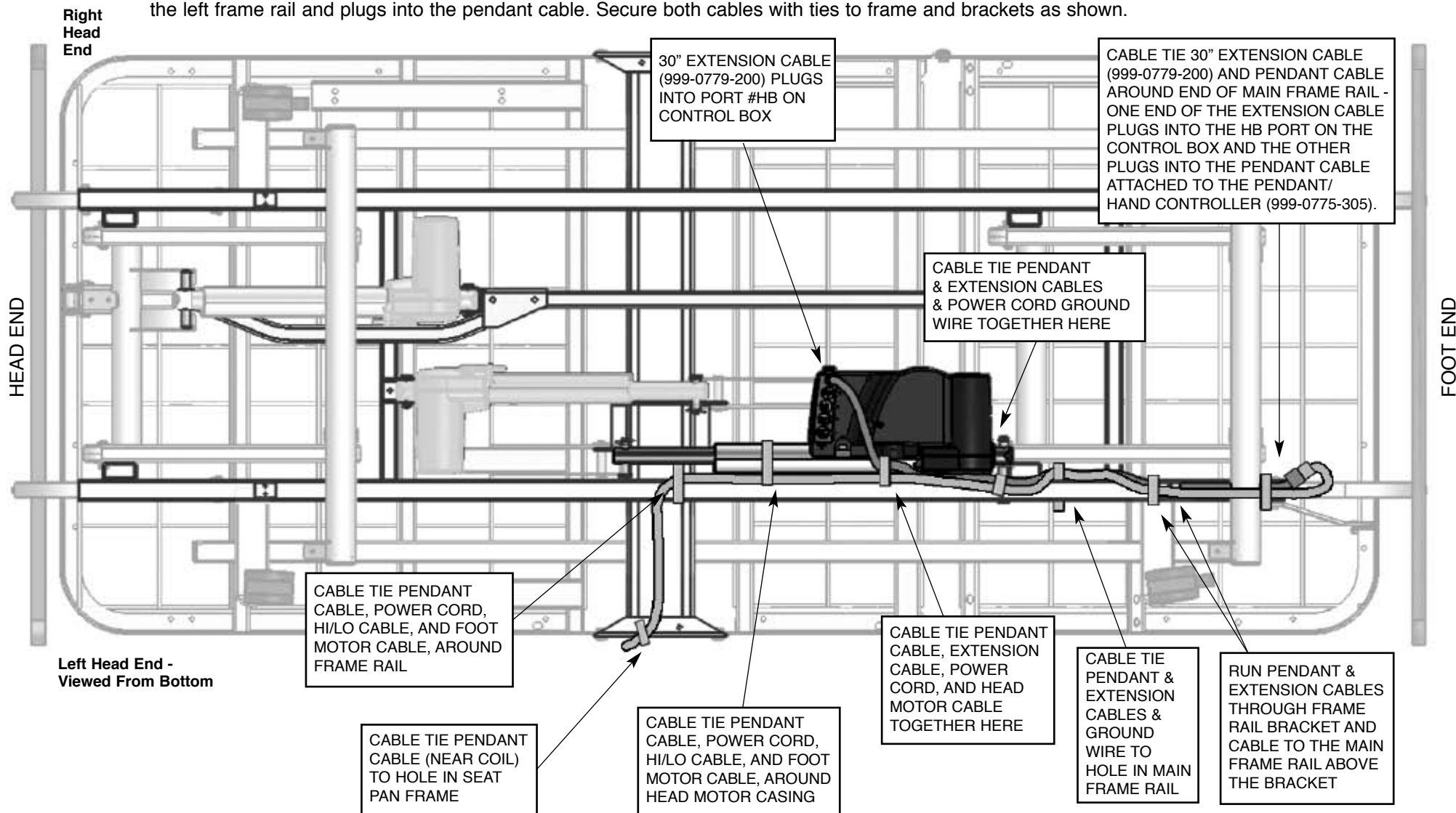


# P

## ENDANT CABLING (999-0775-305 & 999-0779-200) - FROM BOTTOM

### PENDANT CABLE AND 30" EXTENSION CORD ROUTING WITH CABLE TIES

The Pendant Cable (attached to pendant 999-0775-305) runs along the left underside of the main frame's seat pan, along the left frame rail toward the control box, around the vertical bracket, continues along the left frame rail, and finally plugs into the extension cable. The extension cable (999-0779-200) runs from the HB port in the control box, underneath the box, gets cable tied to the power cable, runs around the vertical bracket, continues along the left frame rail and plugs into the pendant cable. Secure both cables with ties to frame and brackets as shown.

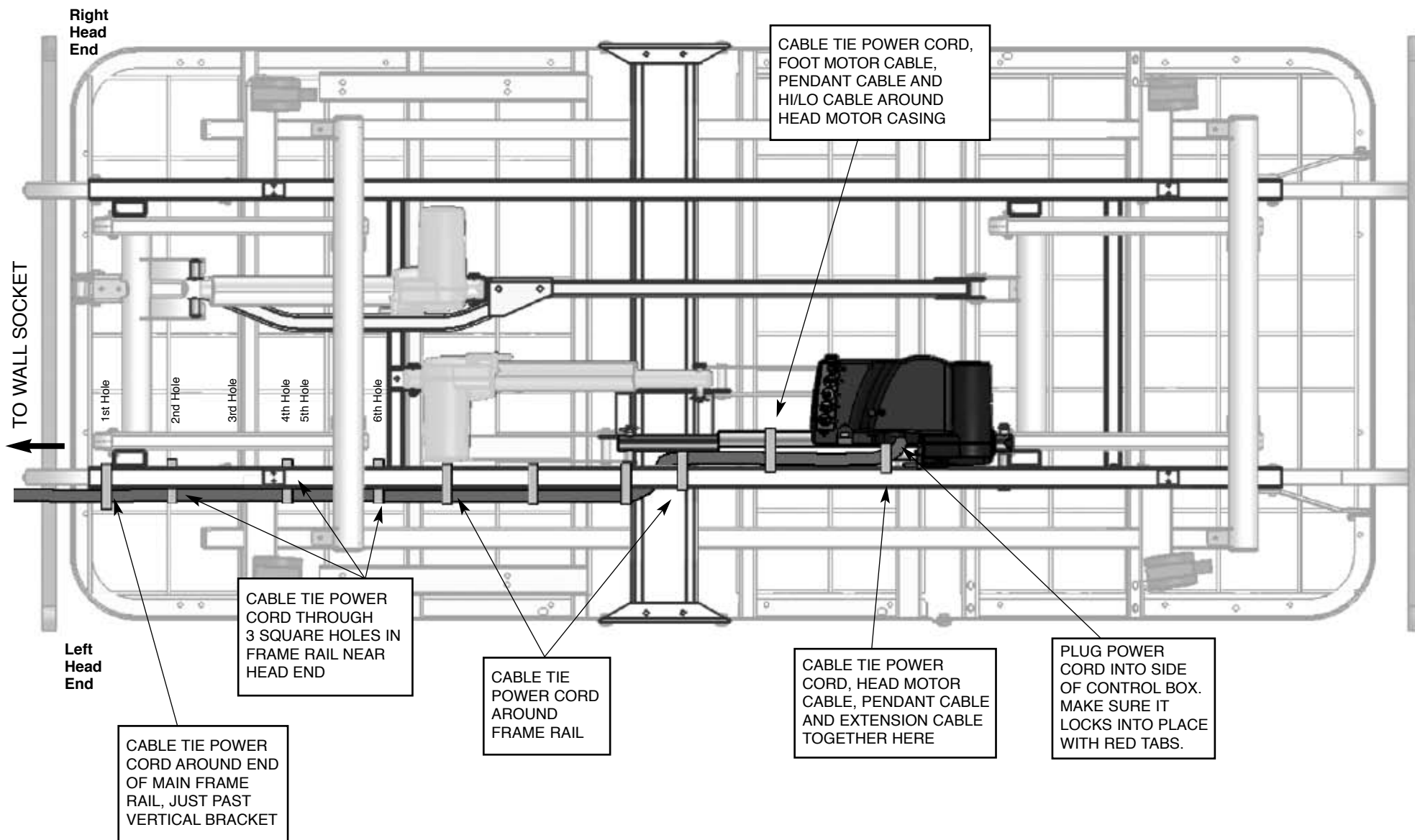


# P

## OWER CORD CABLING (999-0775-208) - VIEWED FROM BOTTOM

### POWER CORD ROUTING WITH CABLE TIES

Power Cord (999-0775-208) runs from the Control Box toward the head-end along the left side frame rail and plugs into the wall receptacle. Cable tie to main frame rail as indicated.



# ELECTRONIC TROUBLESHOOTING

If you experience any problems with the electrical components of your bed (i.e. motors not working properly resulting in the head or foot decks not working, the entire bed not raising up or down, hand controller or staff controller not working, or control box not working) follow the procedures below to see if they can solve your problem. If you continue to have problems please call the Basic American Customer Service Department at 800-365-2338. Please have your bed's serial number and/or model number available (located on your bed label on either side of the main frame below the decks). To determine if your bed is under warranty you will also need to provide the manufacturing date also located on the label.

Event	Possible Solutions
Using Hand Control/Pendant but nothing works	<ol style="list-style-type: none"> <li>1. Check to see if lockout has been selected on lock outs or staff/nurse control.</li> <li>2. Check to see if cable is securely inserted.</li> <li>3. Check to see if you have power - control box cable is plugged into wall and green light is on underneath the control box (where available).</li> <li>4. Did not fix the problem - call Customer Service at 800-365-2338.</li> </ol>
Using Foot end Nurse/Staff Control but nothing works	<ol style="list-style-type: none"> <li>1. Check to see if lockout has been selected on lock outs or staff/nurse control.</li> <li>2. Check to see if cables running from the nurse/ staff control are securely inserted.</li> <li>3. Check to see if you have power - control box cable is plugged into wall and green light is on underneath the control box.</li> <li>4. Did not fix the problem - call Customer Service at 800-365-2338.</li> </ol>
Head deck does not go up or down when using pendant or staff control, but foot and hi/lo functions work properly	<ol style="list-style-type: none"> <li>1. Check to see if cable is securely inserted both at the motor end and the control box.</li> <li>2. Unplug the head motor cable from the control box port. Unplug the foot motor cable from the control box and replug it into the head port. Press the head function on the pendant or staff control.               <ol style="list-style-type: none"> <li>a) If the foot/knee decks raise and lower, there is a problem with either your head motor or head motor cable. Replace.</li> <li>b) If the foot/knee decks DO NOT raise and lower, there is a problem with the head port on your control box. Replace the box.</li> </ol> </li> <li>3. To replace either the head motor/cable or control box call Customer Service at 800-365-2338.</li> </ol>

Event	Possible Solutions
Foot/Knee decks do not go up or down when using pendant or staff control but head and hi/lo functions work properly	<ol style="list-style-type: none"> <li>1. Check to see if cable is securely inserted both at the motor end and the control box.</li> <li>2. Unplug the foot motor cable from the control box port. Unplug the head motor cable from the control box and replug it into the foot port. Press the foot function on the pendant or staff control.               <ol style="list-style-type: none"> <li>a) If the head deck raises and lowers, there is a problem with either your foot motor or foot motor cable. Replace.</li> <li>b) If the head deck DOES NOT raise and lower, there is a problem with the foot port on your control box. Replace the box.</li> </ol> </li> <li>3. To replace either the foot motor/cable or control box call Customer Service at 800-365-2338.</li> </ol>
Entire bed does not go up or down when using pendant or staff control (hi/lo function) but head and foot functions work properly	<ol style="list-style-type: none"> <li>1. Check to see if cables are securely inserted both at the motor end and the control box.</li> <li>2. Unplug one of the hi/lo motor cables from the control box port. Unplug the foot or head motor cables from the control box and replug it into the hi/lo port. Press the hi/lo function on the pendant or staff control.               <ol style="list-style-type: none"> <li>a) If the head/foot deck raises and lowers, there is a problem with either your hi/lo motor or hi/lo motor cable. Replace.</li> <li>b) If the head/foot deck DOES NOT raise and lower, there is a problem with the hi/lo port on your control box. Replace the box.</li> </ol> </li> <li>3. To replace either the hi/lo motor/cable or control box call Customer Service at 800-365-2338.</li> </ol>

**► Maintenance Inspection of All Components (Receipt of shipment)**

- Make sure all parts/components are included (see pages C1 through C8 for parts lists and diagrams)
- Check all bed components for obvious damage
- Inspect the Power Supply Cord for any cuts and/or damage
- Check to see all actuator cords are routed and connected properly to the control box

**► Mechanical Inspection of Assemblies (6 months)**

- Inspect all welds on the sleeping surface, frame, and base assemblies for stress fractures
- Inspect all fasteners for wear and looseness
- **IMPORTANT:** Lubricate all pivot points as needed. Aerosol White Lithium Grease is recommended.

**► Mechanical Inspection of Casters (1 year)**

- Check all locks on locking casters to ensure they are operational
- Check all casters to ensure that they roll properly and are unobstructed

**► Electrical Inspection of Control Box (6 months)**

- Check the power cord connected to the control box for any chafing cuts or wear
- Make sure all attaching hardware is securely tightened
- Check all electrical connections for any wear or fractures

**► Electrical Inspection of Pendant and staff control (6 months)**

- Check the pendant cord for any chafing cuts or wear
- Check all pendant functions . . .
  - ✓ Head raises and lowers properly
  - ✓ Foot raises and lowers properly
  - ✓ Entire bed raises and lowers properly
- Check to make sure each button and associated function work properly (i.e. the head section raises when the Head Up button is activated)

**► Electrical Inspection of Actuators (6 months)**

- Check the actuator cords for any chafing cuts or wear
- Check the range of movement on all motors to ensure they do not bind in the Full Up and Full Down positions



**WARNING:** Possible Shock Hazard. Please unplug the Power Cord from the electrical outlet before performing any maintenance/service to the Power Box.





**GF HEALTH PRODUCTS, INC.**

336 Trowbridge Dr. • Fond du Lac, WI 54937  
Customer Service: 1.800.365.2338 • Fax: 920.929.8213  
[www.grahamfield.com](http://www.grahamfield.com)