

D.I.Y. KIT™

[Model #DIY: Do-It-Yourself Wall Bed Kit]
Cut & Assembly Instructions

For **SINGLE - DOUBLE - QUEEN** size Wallbeds.
VERTICAL & HORIZONTAL installations

CONTAINS MECHANISM AND HARDWARE KIT

- Murphy Bed Lift Mechanisms
 - Steel Folding Leg System
 - All Necessary Hardware
-

Designed to Exceed International ISO 9002
Standards for residential specifications

***** 15 YEAR WARRANTY *****



Let's build a Wallbed together!

Project Start Up

- Familiarize yourself with all of the components in the D.I.Y. kit, as well as thoroughly study this manual so you may plan the steps required to complete the project.
- Study all illustrations and plan drawings. Make sure that the space available is adequate for the specified dimensions of the bed cabinet, both in the open and closed positions (see cut list pages 5-6 to cross check dimensions).
- Panels should be 3/4" (19mm) ply core. Particle board is acceptable but with more attention given to assembly procedures and handling. This is discussed further in this manual.
- Pull handles to open the bed down are not provided. Select these from your local decorative hardware supplier. Have them on site at the time of assembly.
- Check to be sure that all items are available
 - D.I.Y. Hardware Kit
 - Cabinet Components and Hardware
 - Necessary Tools
- If you choose a horizontal bed orientation, a separate cut list is provided and assembly diagrams are on page 20.

Steps to Complete Project

1. Prepare all wood cabinet components.
2. Mount Lift Mechanism.
3. Install springs in Lift Mechanisms.
4. Assemble the Bed Cabinet.
5. Attach Bed Cabinet to wall.
6. Assemble Bed Face Panel Unit.
 - Prepare and assemble Cleats and Rails to Bed Face.
7. Install the Bed Face Panel in Cabinet
8. Install Handles - Leg Assembly - Mechanism Covers - Mattress

Carton Contents for **D.I.Y. KIT™**

Qty.	Item	✓
2	#SBLM - Lift mechanisms, Left & Right	<input type="checkbox"/>
2	#LGD13 - Fold-Away Legs, Left & Right, with the following attached to each leg:	<input type="checkbox"/>
	1 - 3/4" x 1 1/4"(O.D.) "Lexan" Black Plastic Washer	<input type="checkbox"/>
	1 - 5/16 x 1 1/2"(O.D.) Flat Washer	<input type="checkbox"/>
	1 - 5/16" Nylock Hex Nut	<input type="checkbox"/>
2	Hardware Bag #1 (9 Springs Each) Mechanism Springs	<input type="checkbox"/>
2	Mechanism Spring Safety Cover Plates	<input type="checkbox"/>
1	13" (330mm) Plastic Pipe	<input type="checkbox"/>
1	Hardware Card #5 - Velcro Straps	<input type="checkbox"/>
1	Leg Rod - 6 pcs. (Single, Double or Queen Sizes) Combine for correct length with vertical or horizontal side tilt beds	<input type="checkbox"/>
Hardware Bag #20		
3	2" x 2" (51x51mm) L Brackets(secure Cabinet to wall)	<input type="checkbox"/>
6	#8 x 2" (Phillips Head Wood Screws (as above)	<input type="checkbox"/>
6	#8 x 3/4" Flat Head Wood Screws (as above)	<input type="checkbox"/>
3	3/8" Rounded Bumper Buttons (for Top Stretcher)	<input type="checkbox"/>
2	3/8" Flat Bumper Buttons (for Leg Bumpers)	<input type="checkbox"/>
1	Warning Label	<input type="checkbox"/>
10	5/16" x 1 1/4" Flat Head Slot Machine Screws (mount mechanism to side panel) ...	<input type="checkbox"/>
10	5/16" Plain Hex Nuts (as above)	<input type="checkbox"/>
2	#8 x 1 1/2" Phillips Pan Head Wood Screws (attach mechanism cover)	<input type="checkbox"/>
Hardware Bag #21		
4	5/16" x 1 1/4" Hex head Machine Bolts(attach Bed Unit to Mechanism)	<input type="checkbox"/>
2	5/16" x 1 1/4" Allen Key Socket head Bolts(as above)	<input type="checkbox"/>
6	5/16" x 7/8" Flat Washers (as above)	<input type="checkbox"/>
6	5/16" Nylock Hex Nuts (as above)	<input type="checkbox"/>
2	1/4" Star Washers (attach Legs to Leg Rod)	<input type="checkbox"/>
2	1/4-20 x 1 1/4" Hex Head Bolts (as above)	<input type="checkbox"/>
Hardware Bag #22		
22	1"x1"x1 3/4" (25x25x44mm) Assembly Brackets (attach Headboard, Top and Bottom Stretcher, Kick, Facia & Leg Stops).	<input type="checkbox"/>
96	#8 x 3/4" Phillips Pan Head Screws 88 for above, 8 for panel guards)	<input type="checkbox"/>
2	Universal Panel Guards	<input type="checkbox"/>
Hardware Bag #23		
12	Confirmat Screws (14 for Cabinet, 12 for Rails)	<input type="checkbox"/>
12	Confirmat Screw Caps (12 for Cabinet, 12 for Foot Rail)	<input type="checkbox"/>

Required Materials List

Qty.	Item	✓
3 sheets *or*	Single/Twin	} Wood Panelling (plycore) or MDF 3/4"x48"x96" (19x1219x2438mm) (use 4 sheets if needed for grain matched bed panels)
4 sheets	Double/Full/Queen	
200	#8 x 1 1/4" Countersink Woodscrews	<input type="checkbox"/>
1 Pint	Carpenter's Glue	<input type="checkbox"/>
6 Sheets	120 Grit Sandpaper	<input type="checkbox"/>
6 Sheets	180 Grit Sandpaper	<input type="checkbox"/>
20-24 linear feet	3/4"x3/4" (19x19mm) Spruce, Birch or Fir (see Cut List for length for cleats)	<input type="checkbox"/>
200 linear feet	13/16" (21mm) Iron-on or peel & stick, pre-glued wood-grain edge tape	<input type="checkbox"/>
1	Mattress (maximum 12" (305mm)thick)	<input type="checkbox"/>

Tools Needed for Assembly

Qty.	Item	✓
1	1/16"; 1/8"; 5/16"; 3/16"; 9/32" Drill Bits	<input type="checkbox"/>
1	3/4" (19mm) Spade Bit	<input type="checkbox"/>
1	1/4" (6mm) Allen Key	<input type="checkbox"/>
2	72" (1829mm) Bar Clamps	<input type="checkbox"/>
1	Awl	<input type="checkbox"/>
6	C-Clamps (6" (150mm) minimum capacity)	<input type="checkbox"/>
1	Household Iron (not needed if edge band is peel & stick)	<input type="checkbox"/>
1	Power Drill	<input type="checkbox"/>
2	Wrenches	<input type="checkbox"/>

Cabinet Cut List (Vertical Orientation)

Numbers in parenthesis () are millimeters.

Single / Twin (Mattress size 39"x75"x10" (991x1905x254) maximum thickness)

Overall Cabinet Dimensions: 44 7/8"W x 83 1/4"H x 15 7/8"D (1140 W x 2115 H x 403 D)
Protrusion from wall: 85 1/2"(2172)

Quantity	Description	Width	Length	Material
2 *or*	Bed Face Panels	21 1/4" (540)	77" (1956)	3/4" (19) Ply
1	Bed Face Panel	42 1/2" (1080)	77" (1956)	3/4" (19) Ply
2	Side Panel	16" (406)	83 1/4" (2115)	3/4" (19) Ply
2	Head Board (1) & Top Panel (1)	14 1/4" (362)	43" (1092)	3/4" (19) Ply
1	Top Facia	2" (51)	43" (1092)	3/4" (19) Ply
1	Bottom Rear Base	6" (152)	43" (1092)	3/4" (19) Ply
1	Bottom Kick	4" (102)	43" (1092)	3/4" (19) Ply
Frame Specifications Box: If you are using our BBF (Baltic Birch Frame) or our SBF (Steel Bed Frame) you will not need to produce these parts; they would be duplicated by the BBF or the SBF.				
3	Stiffeners	4" (102)	37 1/2" (953)	3/4" (19) Ply
2	Side Rails	4 1/2" (114)	74.5" (1892)	3/4" (19) Ply
2	End Rails	4 1/2" (114)	40 1/2" (1029)	3/4" (19) Ply
2	Side Cleats	3/4" (19)	73" (1854)	3/4" X 3/4" (19x19) solid
2	End Cleats	3/4" (19)	39" (991)	3/4" X 3/4" (19x19) solid

Double/Full Bed (Mattress size 54"x75"x10" (1372x1905x254mm) maximum thickness)

Overall Cabinet Dimensions: 59 7/8"W x 83 1/4"H x 15 7/8"D (1521 W x 2115 H x 403 D)
Protrusion from wall: 85 1/2"(2172)

Quantity	Description	Width	Length	Material
4 *or*	Bed Face Panels	14 3/8" (365)	77" (1956)	3/4" (19) Ply
2	Bed Face Panels	28 3/4" (730)	77" (1956)	3/4" (19) Ply
2	Side Panel	16" (406)	83 1/4" (2115)	3/4" (19) Ply
2	Head Board (1) & Top Panel (1)	14 1/4" (362)	58" (1473)	3/4" (19) Ply
1	Top Facia	2" (51)	58" (1473)	3/4" (19) Ply
1	Bottom Rear Base	6" (152)	58" (1473)	3/4" (19) Ply
1	Bottom Kick	4" (102)	58" (1473)	3/4" (19) Ply
Frame Specifications Box: If you are using our BBF (Baltic Birch Frame) or our SBF (Steel Bed Frame) you will not need to produce these parts; they would be duplicated by the BBF or the SBF.				
3	Stiffeners	4" (102)	52 1/2" (1334)	3/4" (19) Ply
2	Side Rails	4 1/2" (114)	74 1/2" (1892)	3/4" (19) Ply
2	End Rails	4 1/2" (114)	55 1/2" (1410)	3/4" (19) Ply
2	Side Cleats	3/4" (19)	73" (1854)	3/4" X 3/4" (19x19) solid
2	End Cleats	3/4" (19)	54" (1372)	3/4" X 3/4" (19x19) solid

Cabinet Cut List (Vertical Orientation) - continued

Queen Bed (Mattress size 60"x80"x10" (1524x2032x254mm) maximum thickness)

Overall Cabinet Dimensions: 65 7/8"W x 88 1/4"H x 15 7/8" D (1673 W x 2242 H x 403 D)
 Protrusion from wall: 90 1/2"(2299)

Quantity	Description	Width	Length	Material
4 *or*	Bed Face Panels	15 7/8" (403)	82" (2083)	3/4" (19) Ply
2	Bed Face Panels	31 3/4" (806)	82" (2083)	3/4" (19) Ply
2	Side Panel	16" (406)	88 1/4" (2242)	3/4" (19) Ply
2	Head Board (1) & Top Panel (1)	15" (381) 14 1/4" (362)	64" (1626) 64" (1626)	3/4" (19) Ply 3/4" (19) Ply
1	Top Facia	2" (51)	64" (1626)	3/4" (19) Ply
1	Bottom Rear Base	6" (152)	64" (1626)	3/4" (19) Ply
1	Bottom Kick	4" (102)	64" (1626)	3/4" (19) Ply
Frame Specifications Box: If you are using our BBF (Baltic Birch Frame) you will not need to produce these parts; they would be duplicated by the BBF or the SBF.				
3	Stiffeners	4" (102)	58 1/2" (1486)	3/4" (19) Ply
2	Side Rails	4 1/2" (114)	79 1/2" (2019)	3/4" (19) Ply
2	End Rails	4 1/2" (114)	61 1/2" (1562)	3/4" (19) Ply
2	Side Cleats	3/4" (19)	78" (1981)	3/4" X 3/4" (19x19) solid
2	End Cleats	3/4" (19)	60" (1524)	3/4" X 3/4" (19x19) solid

Step by Step Instructions

STEP 1: Prepare all Wood Cabinet Components

1. Clean and sand where necessary.
2. Tape edges that will be exposed:
 - Face Panels - Tape all four edges
 - Bottom Kick - Tape two long edges
 - Bottom Rear Base - Tape one long edge
 - Head Board - Tape two long edges
 - Top Panel - Tape one long edge
 - Top Facia - Tape two long edges
 - Side Panels - Tape two long edges
3. Finish Components to your desired stain or paint colors.
 (Side Panels, Headboard, Top Facia, Top Panel, and Bottom Kick)

NOTE: Do Not Finish the Bed Face Panels or the Rails at this time. To insure a positive glue bond, they should not be finished until after assembly. (Step #6).

Cabinet Cut List (Horizontal Orientation)

Cabinet Components Description & Cut List

Cabinet Material: 3/4" (19) MDF or Plycore

Numbers in parenthesis () are millimeters.

#	Qty	Description	Single	Double	Queen	Edge Band
1	2	Bed Face Panel	39" x 41 3/4" (990x1060)	39" x 56 3/4" (990x1441)	41 1/2" x 62 3/4" (1054x1594)	4 Edges
2	2	Side Panel	16" x 49 3/4" (406x1289)	16" x 64 3/4" (406x1670)	16" x 70 3/4" (406x1822)	2 Long Edges
3	1	Top Panel	16" x 78 1/2" (406x1994)	16" x 78 1/2" (406x1994)	16" x 83 1/2" (406x2121)	2 Long Edges
4	1	Top Facia	2" x 78 1/2" (51x1994)	2" x 78 1/2" (51x1994)	2" x 83 1/2" (51x2121)	2 Long Edges
5	1	Top Facia Stiffener	3" x 78 1/2" (76x1994)	3" x 78 1/2" (76x1994)	3" x 83 1/2" (76x2121)	2 Long Edges
6	2	Top Rear Stiffener (1) Bottom Rear Base (1)	4" x 78 1/2" (102x1994)	4" x 78 1/2" (102x1994)	4" x 83 1/2" (102x2121)	2 Long Edges
7	2	Bottom Kick (1) & Kick Stiffener (1)	4" x 78 1/2" (51x2045)	4" x 78 1/2" (51x2045)	4" x 83 1/2" (51x2172)	2 Long Edges
8	1	Head Board	15" x 78 1/2" (381x1994)	15" x 78 1/2" (381x1994)	15" x 83 1/2" (381x2121)	2 Long Edges
9	1	Head Board Stiffener	6" x 78 1/2" (152x1994)	6" x 78 1/2" (152x1994)	6" x 83 1/2" (152x2121)	0 Edges
10	1	Panel Connector	3" x 37" (76x940)	3" x 52" (76x1321)	3" x 58" (76x1473)	0 Edges



Cabinet Footprint Dimensions & Protrusion Distance from Wall (Horizontal)

Numbers in parenthesis () are millimeters.

	Single	Double	Queen
Cabinet Size (D,W,H)	16" x 80" x 49 3/4" (406 x 2032 x 1264)	16" x 80" x 64 3/4" (406 x 2032 x 1645)	16" x 85" x 70 3/4" (406 x 2159 x 1797)
Projection from Wall	49" (1245)	64" (1626)	70" (1778)
Max Mattress Size	39" x 75" (990 x 1905)	54" x 75" (1372 x 1905)	60" x 80" (1524 x 2032)
Max Mattress Thickness	12" (305)	12" (305)	12" (305)

Marking the Mounting Holes for the Lift Mechanism

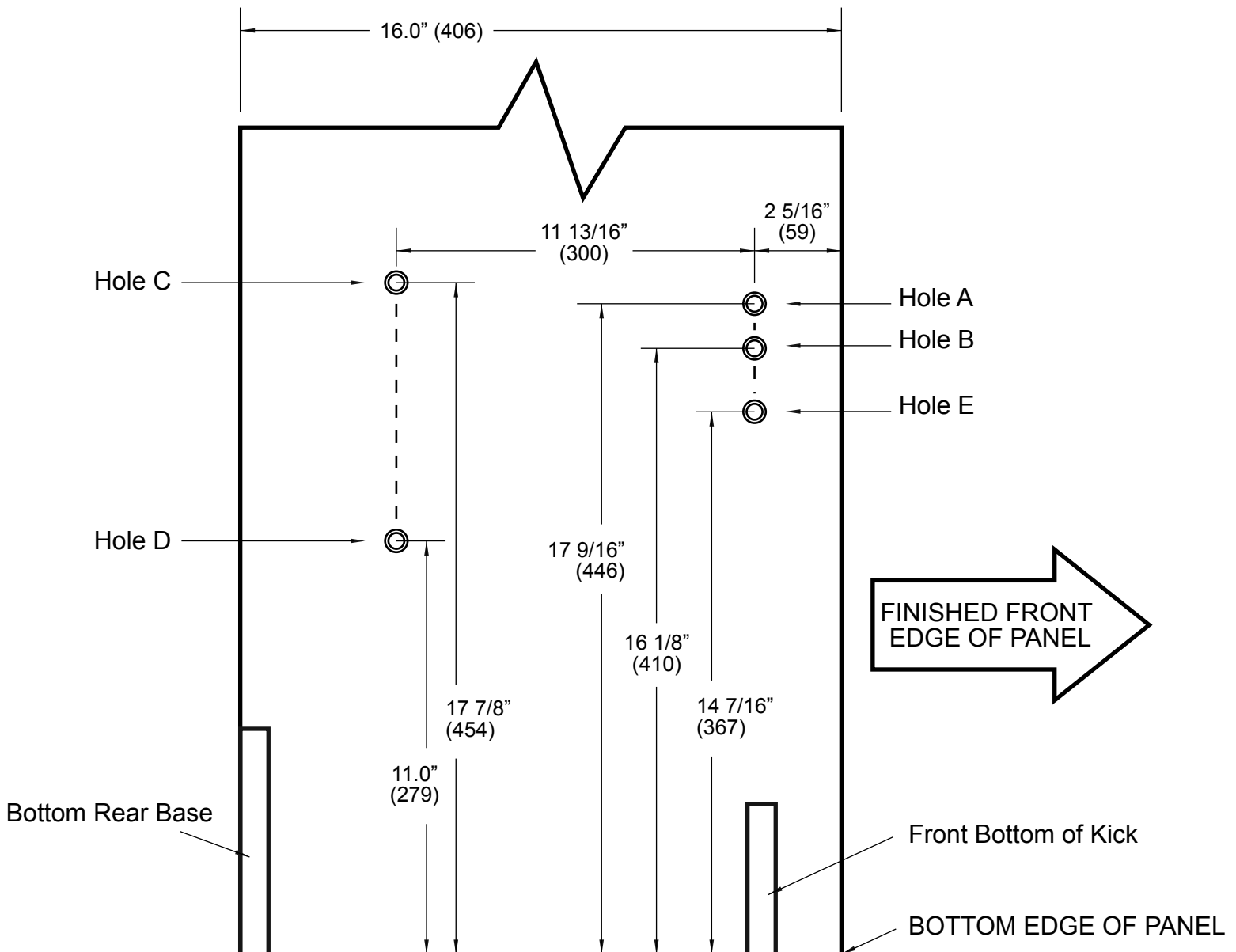
Numbers in parenthesis () are millimeters.

STEP 2: Mount the Lift Mechanism

Note: Mount the Lift Mechanisms prior to assembly of the Bed Cabinet (STEP 4).

1. Exactly mark the mounting holes on the inside of each side panel from the drill pattern in Drawing 3.
2. Drill a 1/16" (2mm) pilot hole for each mounting bolt. Drill the final hole with a 5/16" (8mm) bit.
3. Counter sink 5/8" (15mm) on the outside of the panels just deep enough for the 5/16" x 1 1/4" (8x32mm) Machine Screws.

NOTE: All location measurements are from the front edge of the Cabinet Side Panels. Refer to Drawing 3.



Drawing 3. (Drill pattern for SBLM Lift Mechanism)

STEP 3: Install the Springs on the Lift Mechanisms

NOTE: The maximum number of springs that each Lift Mechanism can use is nine. Nine springs are provided for each lift mechanism; a varying number will be needed depending on bed size, mattress weight, and materials added to the panel face such as moldings or accessories.

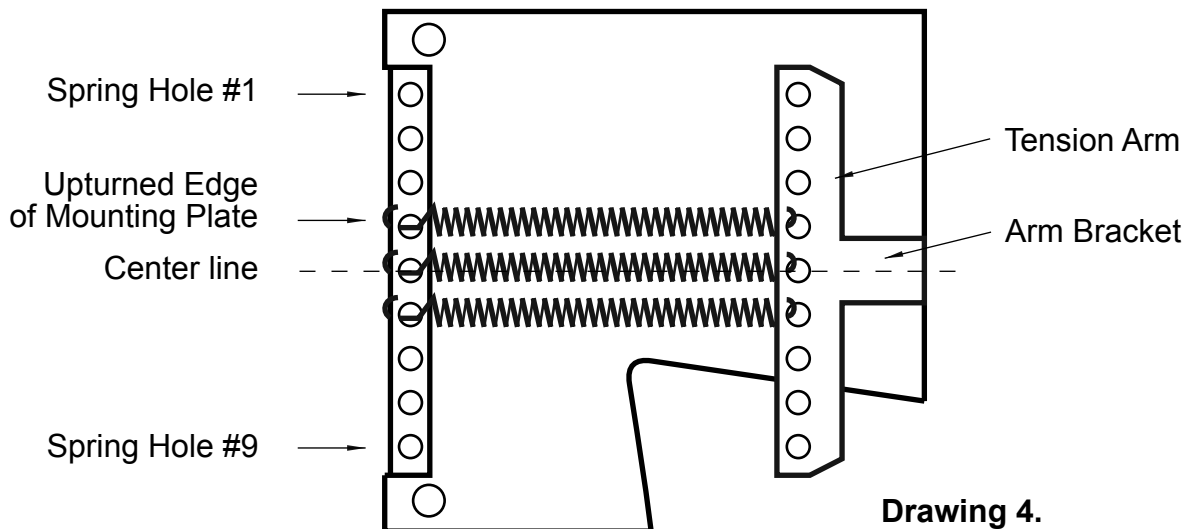
Select from this chart for your bed:

Mattress Sizes	6" (150)	8" (200)	10" (250)
Single/Twin	3-4 per side	4-5 per side	4-6 per side
Double/Full	5-6 per side	5-6 per side	6-7 per side
Queen	5-8 per side	5-8 per side	7-9 per side

*Add one spring per side if Bed Face Panels are constructed of a material heavier than plywood.

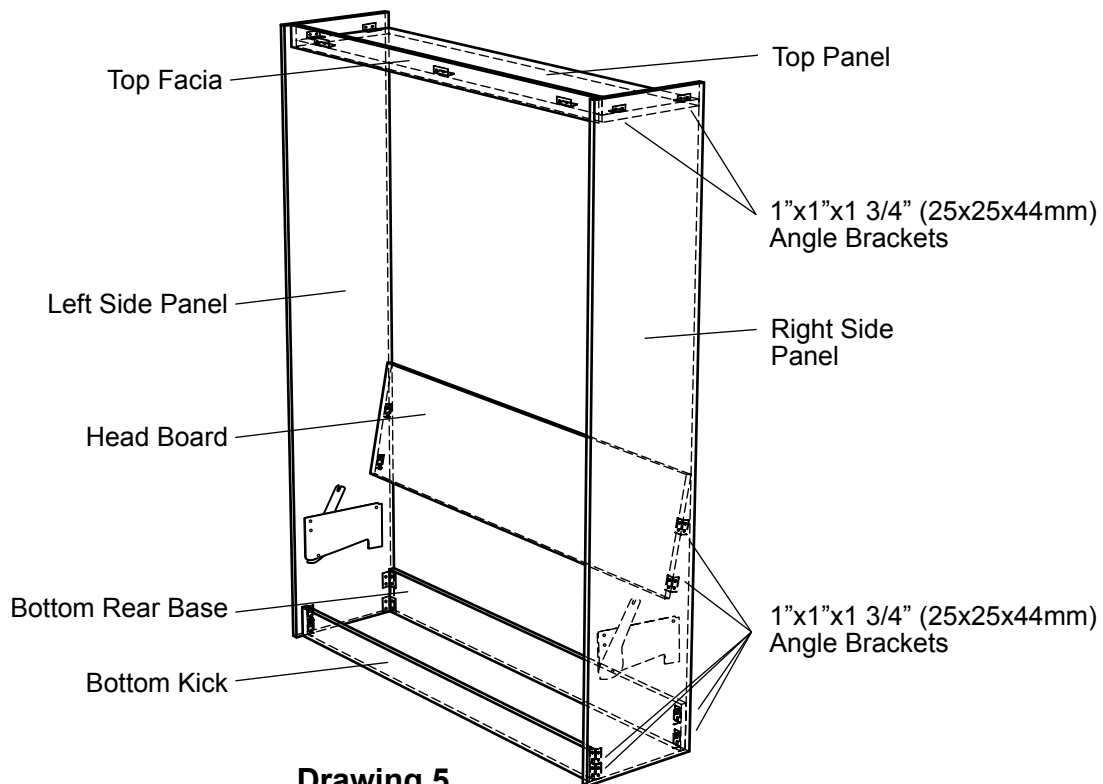
ALERT: When you have completed installing your bed, you may determine that you need more or less lift (springs). If this is the case you should remove the Bed Face and make the necessary change. Remember your bed will function for many years when properly balanced. A small amount of time and inconvenience now will ensure lasting satisfaction.

1. Start by hooking one end of the spring under the up turned edge of the backer plate. Lay the spring down and hook it into the matching hole in the T-shaped tension arm. You may pry up this arm with a wood handle or shim to make inserting the hook easier.
NOTE: All hook openings should face you.
2. Install an equal number of springs on each side of the center hole. Imbalance of one spring is O.K. to the topside.
3. You should use the same number of springs and the same number of holes on both the Lift Mechanisms. However, to achieve balance, you may use *one* more spring on either the right or left Side Mechanism.



STEP 4: Assemble the Bed Cabinet (vertical orientation)

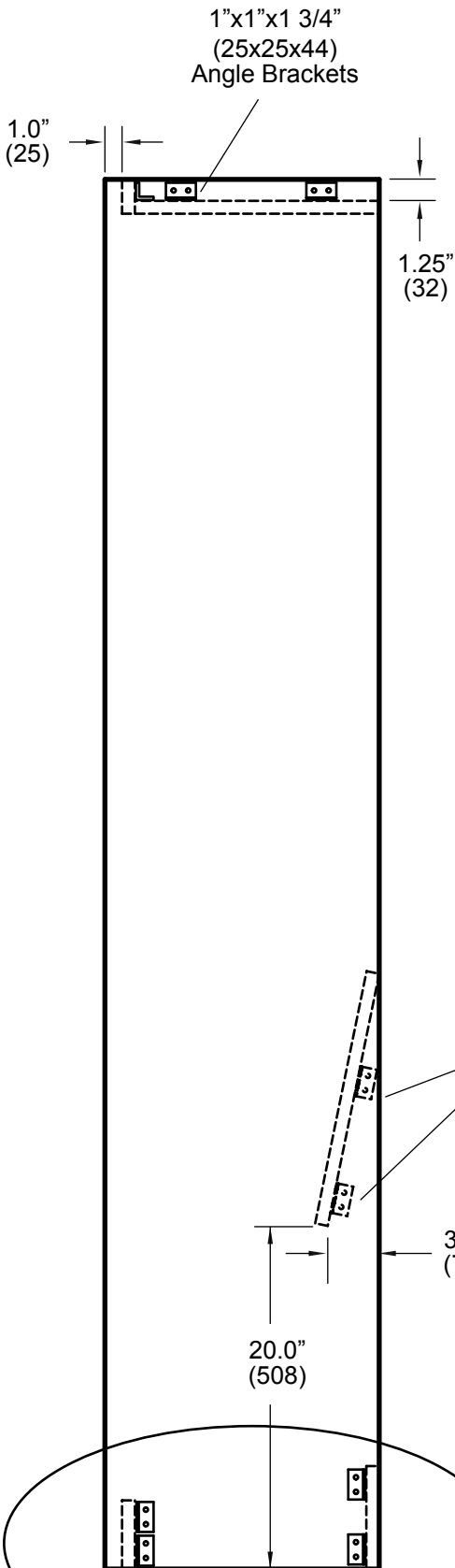
- Be sure that all Bed Cabinet components are cleaned, sanded, and finished at this time.
 - Bed Face Panels and Rails should not be finished at this time. Finishing will inhibit glue bond to Bed Face. Finish after assembly.
 - For easier final wall mount you should assemble bed cabinet in the room where it will be used.
 - Be sure Lift Mechanisms are securely installed.
1. Locate the mounting position of the Headboard, marking the left and right Side Panels 20" (508mm) from the floor and 3" (76mm) in from the back edge of the panels. Note from the Drawings 5 & 7 that this mounts the bottom edge of the headboard out 3" (76) from the back or wall edge of the Side Panels. Use the 1"x1"x1 3/4" (25x25x44mm) mounting brackets (2 each side). Be sure the top bracket is set low enough not to protrude beyond the back of the cabinet. Use #8 x 3/4" Pan head Screws. The Headboard location may vary slightly; just be sure it is secure and at the approximate 3" (76mm) distance from the back edge.
 2. Use Angle Brackets to assemble the Bottom Rear Base and Bottom Kick in the position shown in Drawings 5 & 7. Use two Angle Brackets on each end.
 3. Attach Top Panel as shown in Drawings 5 & 7. Be sure back edge of the Panel is flush with back of Side Panels and 1 1/4" (32mm) down from top of Side Panels to be flush with the bottom edge of the Top Facia. The Top Facia will cover the front edge of the Top Panel.



Drawing 5.

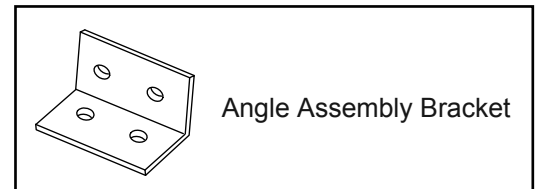
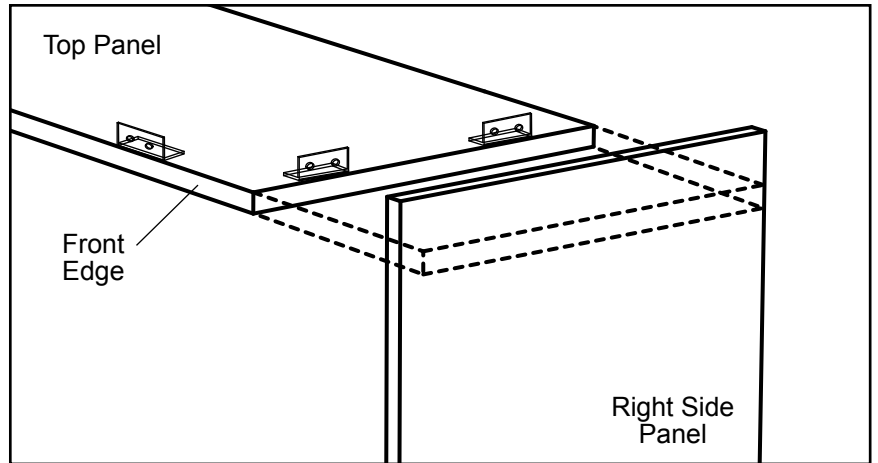
STEP 4: Assemble the Bed Cabinet (vertical orientation) - continued

Numbers in parenthesis () are millimeters.

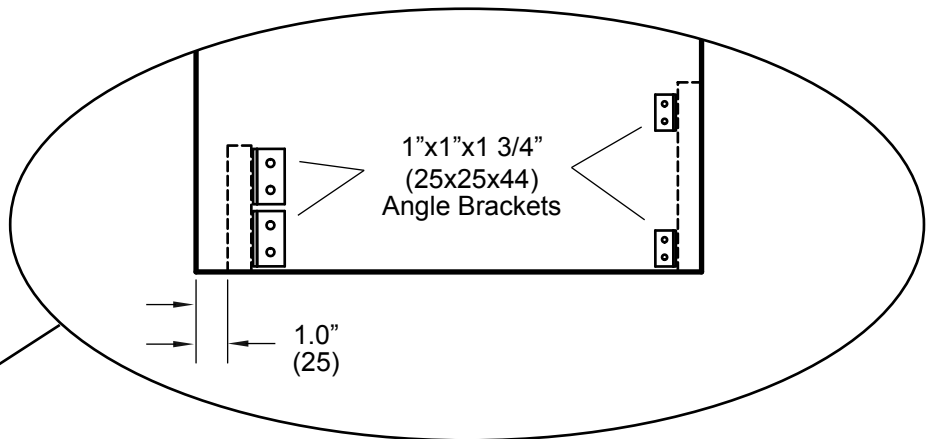


Drawing 7.

Drawing 6.



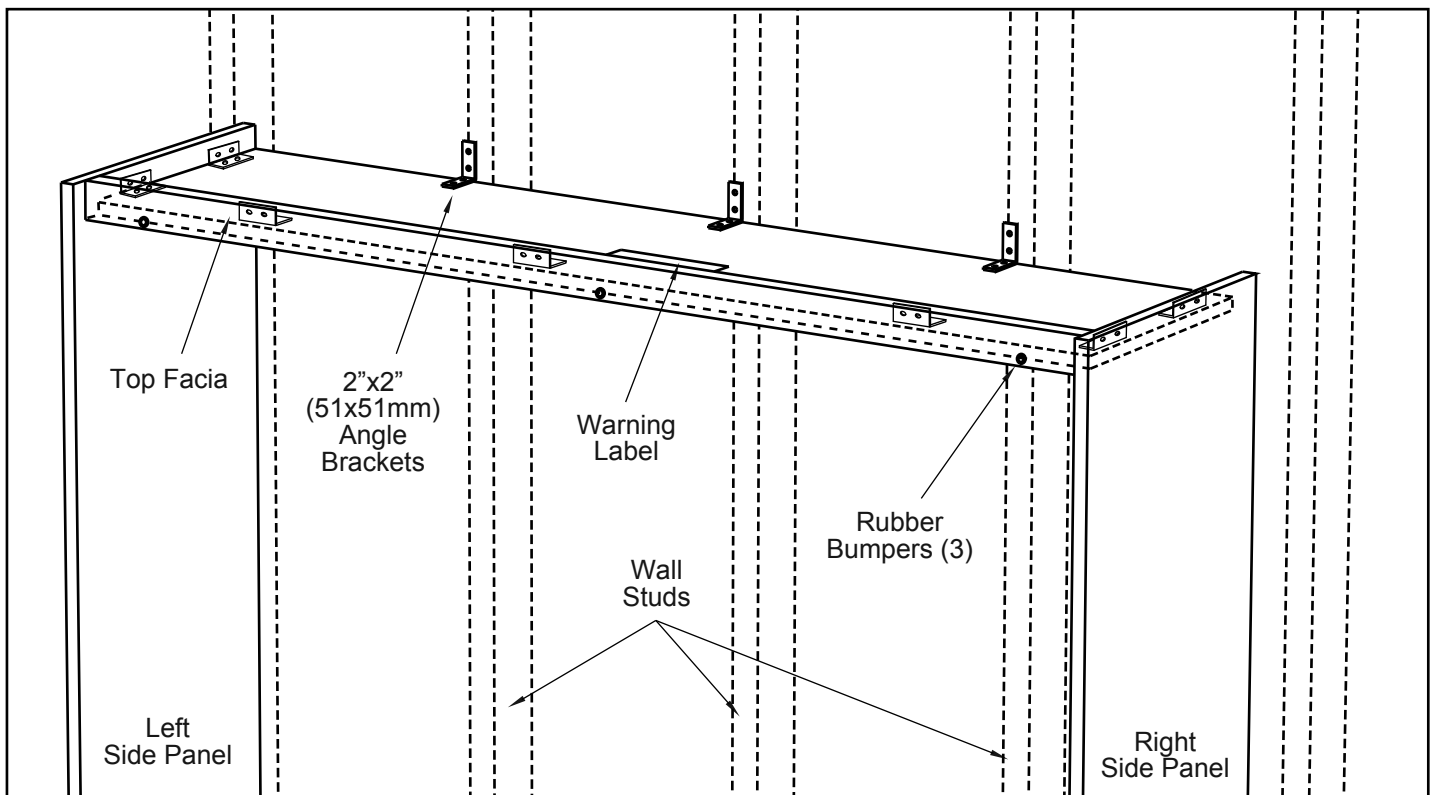
1"x1"x1 3/4"
(25x25x44)
Angle Brackets
Note: Upper
Brackets clear
Wall



STEP 5: Attach Bed Cabinet Securely to Wall

Hints: If the room is carpeted you may raise the kick up to 1/4" (7mm) to clear the carpet. More than 1/4" (7mm) will obstruct the operation of the bed.

- You may or may not wish to remove the Base Board to allow the Bed Cabinet to fit flush against the wall. If you do remove the Base Board, save for later trim and replacement. If you do not wish to remove the Base Board, you may use a shim or filler strip of the same thickness at the top between the cabinet and the wall.
1. Place cabinet against wall. Make sure the cabinet is level and square. Measure diagonally to be sure of square. Bed will not operate if cabinet is not square. Check also for square from front to back as well as side to side. Use shims where necessary.
 2. Prior to placing cabinet against the wall, locate 3 studs or other wall frame members at the level of the Top Stretcher panel (top of bed).
Alert: The cabinet must be secured to studs or other wall structural members using the 2"x2" (51x51mm) L-Brackets supplied. If the wall is not a wood stud wall, use metal stud screws, toggle bolts or concrete expansion bolts if necessary.
 3. Now that the cabinet is square and plumb, use two #8 x 2" (M4x51mm) flat head wood screws in each or three 2"x2" (51x51mm) brackets to attach to studs at the top level of the Top Panel (see drawing 8). Re-check square and plumb and then secure 2"x2" (51x51mm) L-Brackets to Top Panel with #8 x 3/4" (M4x19mm) wood screws. Attach warning label to top of cabinet. Attach three Bumper Buttons to bottom of the front edge of the Top Facia. These Bumpers allow the Bed Face Panel to close quietly.



Drawing 8.

STEP 6: Assemble Bed Face Panel Unit - Prepare and assemble Cleats and Rails and attach to Bed Face Panel

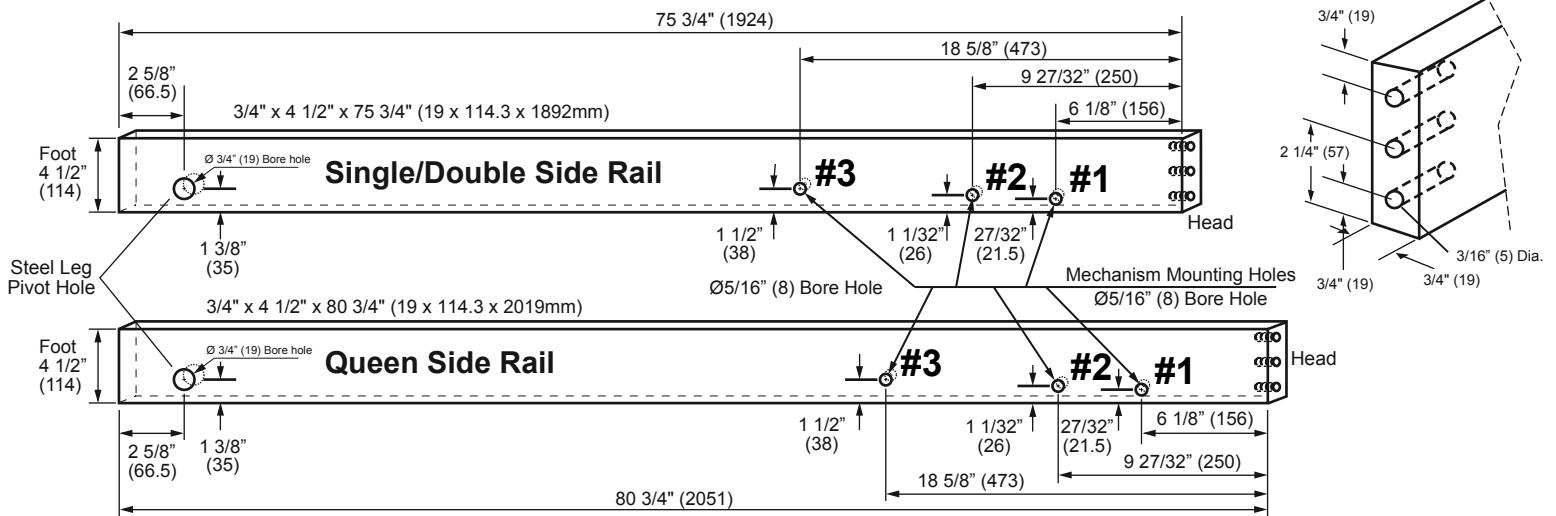
1. Drill necessary holes to attach the Lift Mechanism and the fold down legs. Dimensions are in Drawing 9. **STOP!** If you are assembling the Bed Face Panel in the **Horizontal** Orientation, Drill Holes #1,#2, and #3 AND the Leg Pivot Holes must be put into the END RAILS, not the side rails as shown. The drawing indicates where these holes must be drilled for mounting the mechanism and leg assemblies to Bed Rails for vertical orientation; subtract 3/4" (19mm) from all dimensions for horizontal beds to allow for wood thickness.
2. Drill through the four Cleats at approximate 4" (100mm) intervals in both directions so they may be attached to the rails as well as to the Bed Face. Lay the rails out on the Bed Face Panel so you will not confuse left or right and the head and front of the Bed Face final assembly.
3. Glue and screw the Cleats and Rails together. Be sure the Cleats are inset 3/4" (19mm) from both ends of the proper rail. Be sure that the Cleats are on the inside of the Rails. Use #8 x 1 1/4" screws for this procedure.
4. Refer to Drawing 9 and drill the holes in the Side and End Rails for securing with three Confirmat screws at each corner of the Rails.

NOTE: The Bed Face Panel Unit absorbs the most weight and stress of all the Bed Cabinet components, therefore the unit must be glued and screwed at the time of assembly. Do not finish the wood components of this unit until it is completely assembled. This will assure maximum strength from the glued joints.

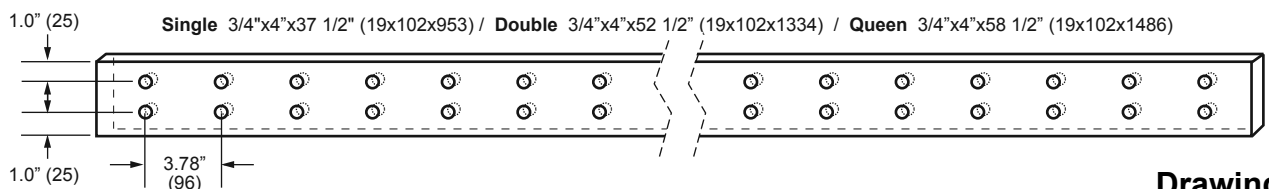
5. Position Bed Face Panels face down on a flat surface. Position three Stiffeners in locations shown in Drawing 10 - ends of stiffeners should be 2 3/8" (60mm) from edges of Face Panels to allow for Side Rails and Cleats. At this time drill two rows of pilot holes in the Stiffeners approximately 4" (100mm) apart and 1" (25mm) from both sides of the Stiffener.

ALERT: use caution not to drill into the seam of the Face Panels.

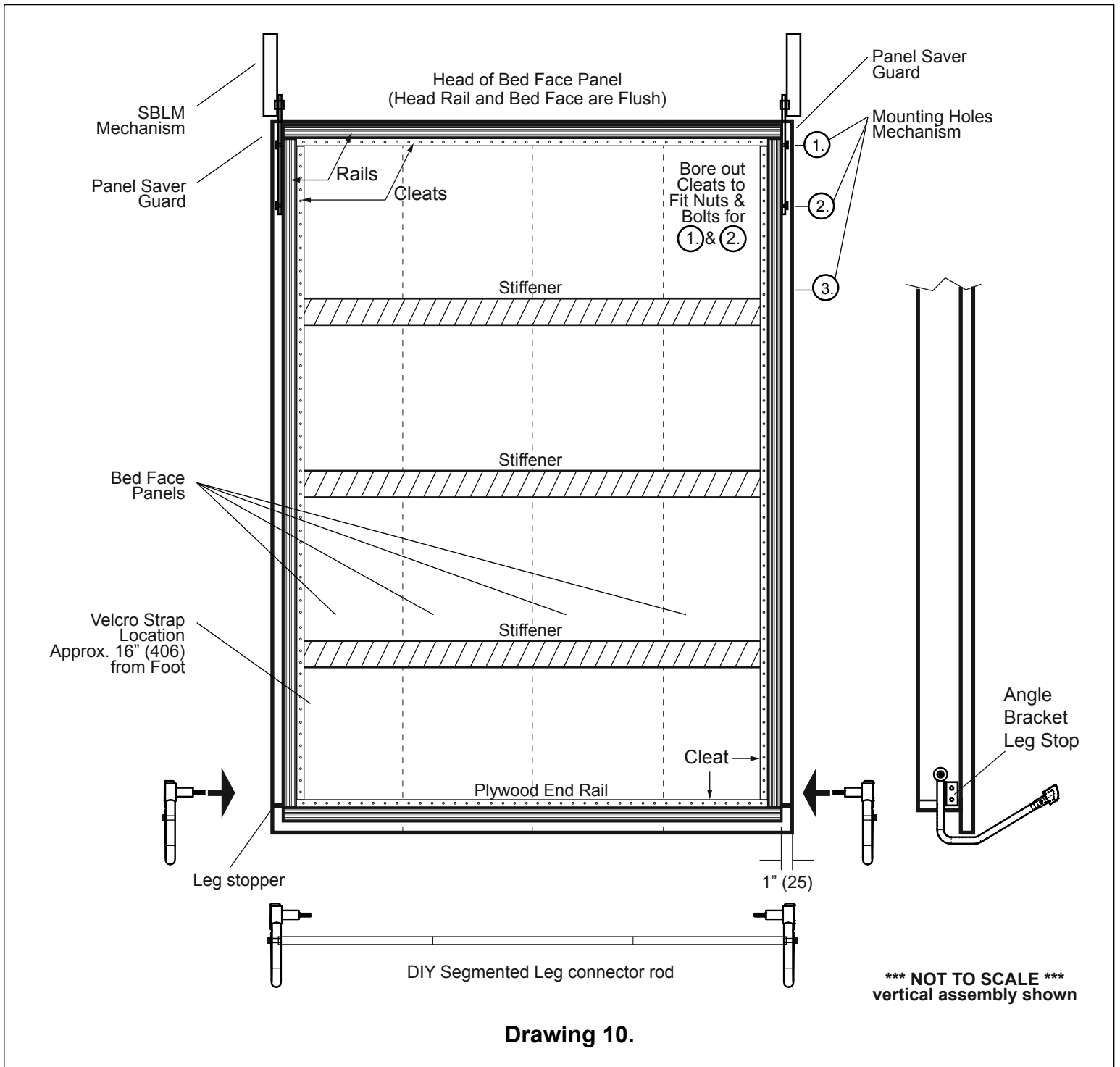
Rails [Holes #1, #2, & #3 attach Frame to Mechanism]



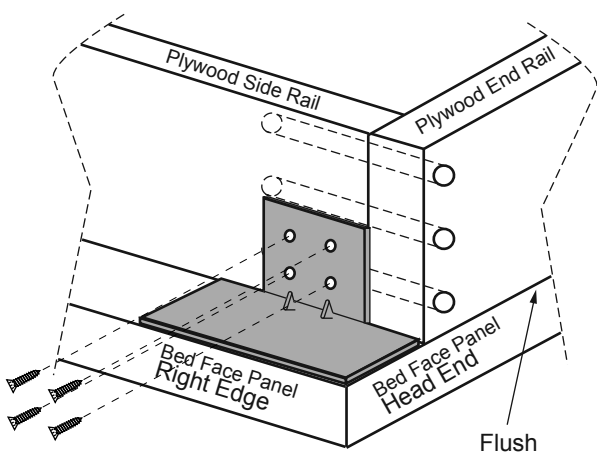
Stiffeners



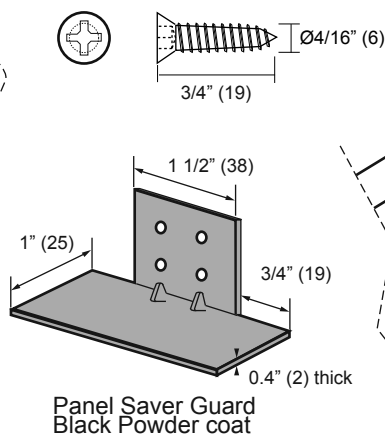
Drawing 9.



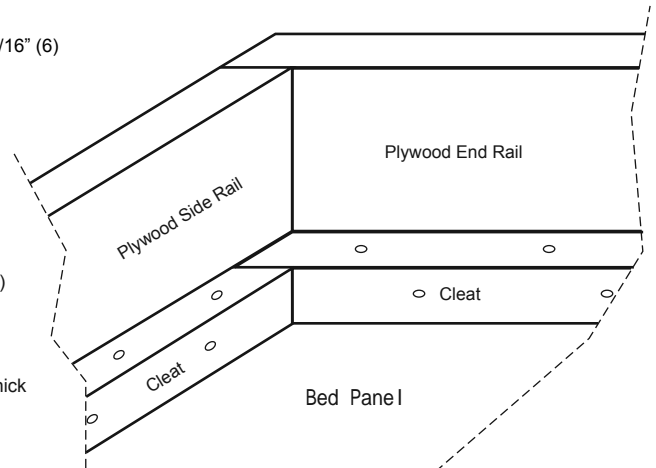
Drawing 10.



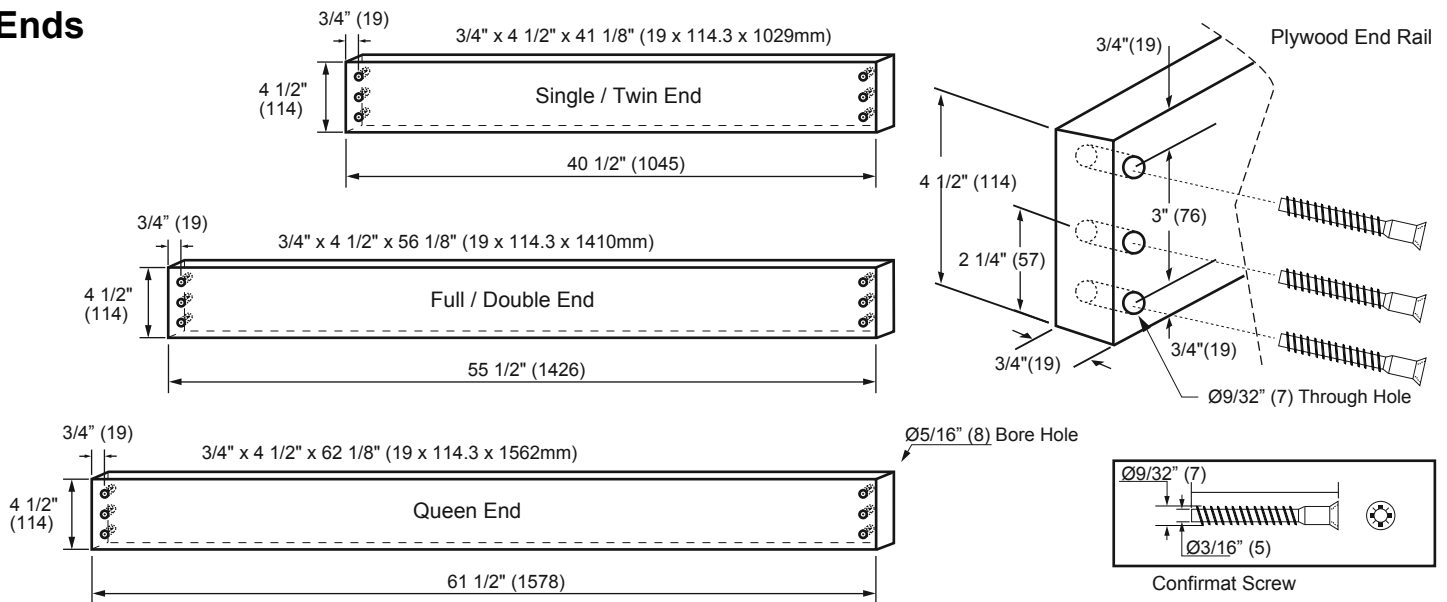
Drawing 11a.



Drawing 11b.



Ends



Drawing 12.

STEP 6: Assemble Bed Face Panel Unit - Prepare and assemble Cleats and Rails and attach to Bed Face Panel (cont.)

- Now "tack" this assembly together by loosely placing screws in the pilot holes nearest the corners. Be sure the unit is absolutely square. Now glue and screw the center stiffener in place. Check assembly for square and alignment. Now glue and screw the two other Stiffeners into position. All of the above assembly should be done with glue and #8 x 1 1/4" wood screws.
- Place the pre-assembled Cleats and Rails in their proper position on the Bed Face Panel. Use Drawing #8 as your guide to the final placement of the Cleats and Rails. Glue and screw the Cleats and Rails securely to the Bed Face Panel; be sure you have the 1" (25mm) overhang of the panel on two sides and the foot and that the head Rail is flush with the Head End of the Bed Panel.

Now that the Side and End Rails and Cleats are attached to the Bed Face, you have some minor tasks to complete.

NOTE: Lift Mechanism mounting holes #1 and #2 are partially blocked by the Cleats on both the left and right side. Using a 3/4" (19mm) spade bit, drill away enough of the Cleat so the nuts and washers for the mounting bolts will have adequate clearance.

- Tape the tops and ends of the Side and End Rails for a more finished appearance and to prevent possible snagging.
- Attach the Velcro straps approximately 16" from the Foot end of the Cleats. Use the 3/16" x 3/4" (O.D.) washers and #8 x 3/4" wood screws. Fold the Velcro strap over to screw through for extra strength. The Velcro hooks and loops should face each other.
- Press fit the Confirmat screw caps on all 12 Confirmat screws at the corners of the Rails.
- Attach the Universal Panel Saver Guards at the Bed Panel Head Corners shown in Drawing 11a.

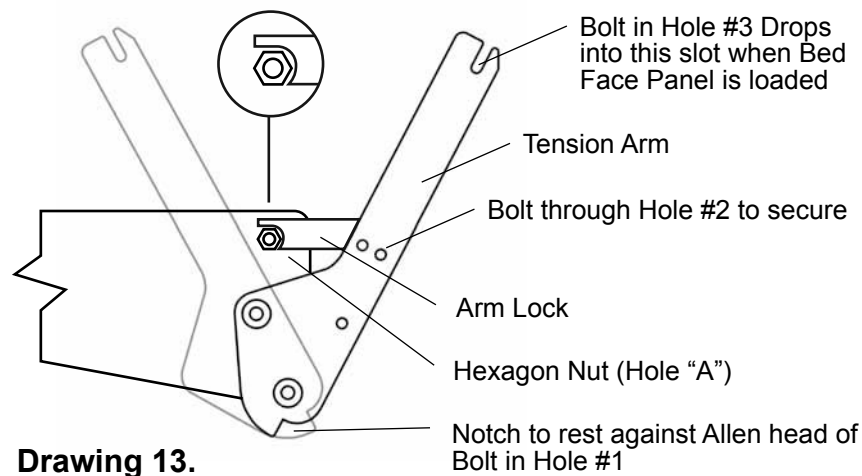
STEP 7: Install the Bed Face Panel in Cabinet

SETTING THE LIFT MECHANISM

NOTE: The Bed Face Panel is mounted between the Lift Mechanism Torsion Arms using the supplied bolts through the holes #1-2-3 you have drilled in the Side Rails.

1. Set the left and right Tension Arms as shown in Drawing 13.
2. Place PVC pipe over Tension Arm. While sitting on floor, place one foot against the edge of the Side Panel to hold the Bed Cabinet from moving from the wall. Pull straight down (no side motion) so your assistant may place the arm lock in position to hold the Lift Mechanism in the partially open position. Repeat this procedure with the other mechanism.

ALERT: Be sure both arm locks are secure against the hexagon nuts. Do not reach around or behind the Tension Arms; serious injury may occur if the Tension Arm is accidentally tripped. If possible, have assistant help in the setting of the mechanism and the loading of the Bed Face Panel.

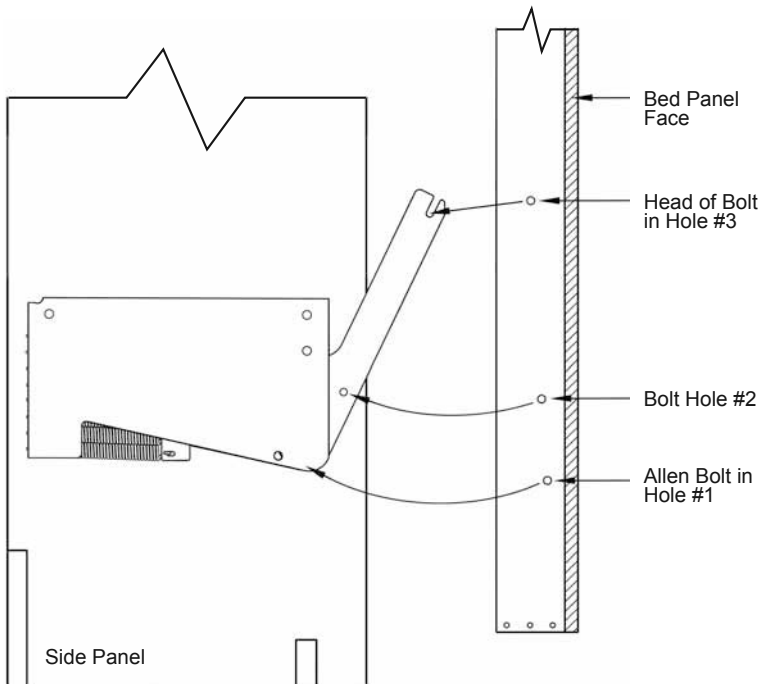


3. Install the two 5/16" x 1 1/4" Allen socket head bolts in the holes #1. The head of the bolts should be outside the Rails. Use 5/16" x 7/8" washer and 5/16" Nylock nut on the inside. Securely tighten.
4. Install two 5/16" x 1 1/4" bolts (heads outside of Rails in holes #3). Put a 5/16" x 7/8" Flat washer and 5/16" Nylock nut on each bolt from the inside of the Side Rail. Finger tighten only and leave body of 5/16" bolt protruding on the outside of Side Rail.
5. Place one 5/16" x 1 1/4" bolt, 5/16" x 7/8" Flat washer, and 5/16" Nylock nut on the floor by the front edge of each Side Panel - these will be installed in holes #2 after the Bed Face Panel is mounted to the Lift Mechanism.

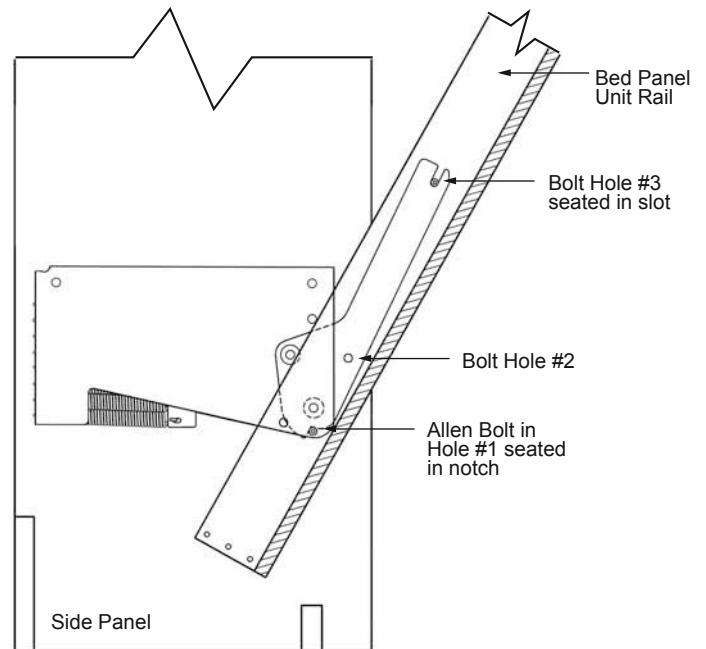
NOTE: Keep the proper size wrenches handy to securely tighten the bolts in holes #2 and #3, which is part of the next step.

STEP 7: Install the Bed Face Panel in Cabinet (cont.)

- Stand the Bed Face Panel on the Head end and align it just in front of the Tension arms. Gently (do not bump the Torsion Arms) work the Side Rails into position between the Torsion Arms. Carefully lift the Bed Face Panel approximately 4" (100mm) or enough for the 5/16" (8mm) bolt loosely secured in hole #3 to drop into the slot on the end of the Tension Arm. Repeat this procedure on both sides of the Bed Face Panel.
- Tilt the Bed Face Panel out until the arm locks disengage and the Allen socket head bolt head, in hole #1, is seated in the notch at the bottom of the tension arm. Tighten the 5/16" (8mm) bolts in holes #3 securely.
- Install the 5/16" (8mm) bolts in holes #2 and securely tighten. Let the Bed Face Panel close gently. Do not let it slam shut. Damage can be caused by slamming - especially if the mattress is not in place.
- ALERT:** Place the mattress across the Bed Face Panel so it will not slam shut. If this is not possible, your assistant must hold the panel down.



Drawing 14.



Drawing 15.

STEP 8: Install Handles - Legs - Mechanism Covers - Mattress

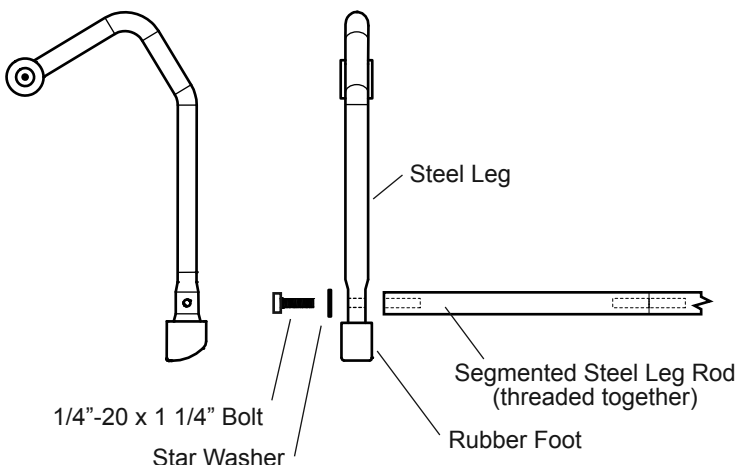
1. Position and secure handles for ease of operation. Measure down approximately 36" (915mm) from the panel top to the top of the handles.
2. Install legs with the 1 1/2" x 5/16" washer on the inside of the Rails and the Nylon washer on the outside. Tighten nut to have a small amount of friction when leg assembly is rotated from the up to down position.
3. Pre-drill and screw leg stops in position shown on Drawing 17. NOTE: Leg stop should hold leg in horizontal position as shown. Use #8 x 3/4" screws.
4. Install leg connector rod between legs and secure with 1/4" x 1 1/4" Hex head bolts and star washers. Assemble modular sections of leg connector rod. Be sure they are securely tightened so not to loosen and wobble in use. See pg. 20 for direction.
5. Install mattress and secure with previously installed Velcro straps. Cut the excess Velcro to leave about 12" (300mm) of overlap.
6. Snap the powder coated steel mechanism covers in place - secure with #8 x 1 1/4" black wood screws through the standoff on the backer plate.

Follow up to Initial Assembly

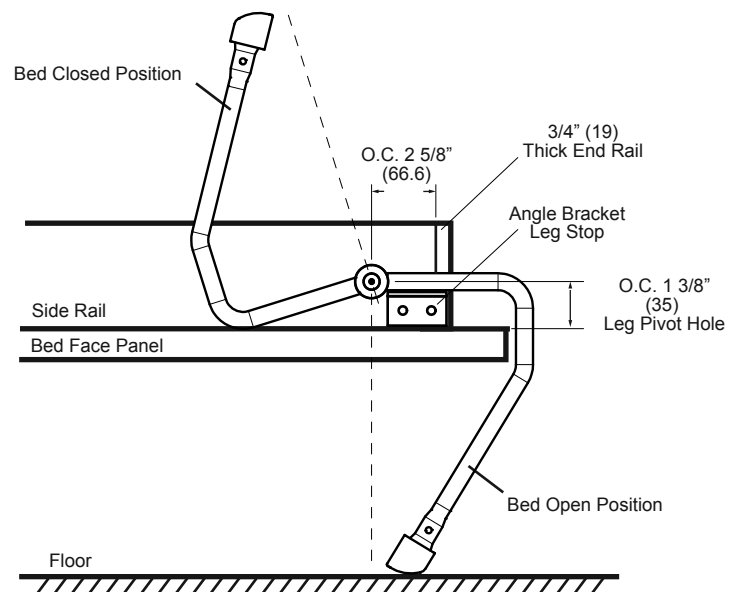
Level or square problems of Bed Face fit to Cabinet. Nudge base of Cabinet at the floor level - or do shims under the Side Panels.

Feel of Stiffeners is evident through mattress. Add foam panels or layers of flat corrugated cardboard between stiffeners.

If bed is too heavy to operate easily or slams shut: remove Bed Face Panel and add or subtract springs. At this time you may decide to use one more or less spring(s) on the left or right side Lift Mechanism.



Drawing 16.

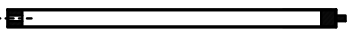


Drawing 17.

STEP 8: Segmented Leg Rod Pieces for Assembly

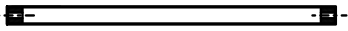
Universal Leg Rod Pieces - Each Piece Used with All Bed Sizes

A: 20.59"(523mm)



(1) 20.59" (523mm) - 1 Female Threaded End, 1 Male Threaded End

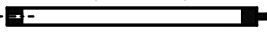
B: 20.59"(523mm)



(1) 20.59" (523mm) - 2 Female Threaded Ends

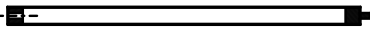
Bed Specific Leg Rod Pieces - Provided with All Bed Sizes

C: 15"(381mm)



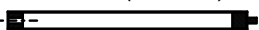
(1) 15.0" (381mm) - Used with Double Beds - 1 Female End & 1 Male End

D: 21.02"(534mm)



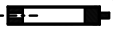
(1) 21.02" (534mm) - Used with Queen Beds - 1 Female End & 1 Male End

E: 14.57"(370mm)



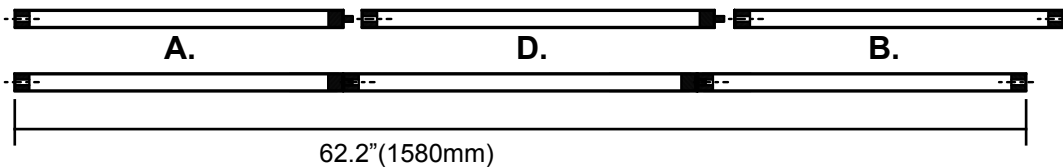
(1) 14.57" (370mm) - Used with Horizontal Single/Double Beds - 1 Female End & 1 Male End

F: 4.57"(116mm)

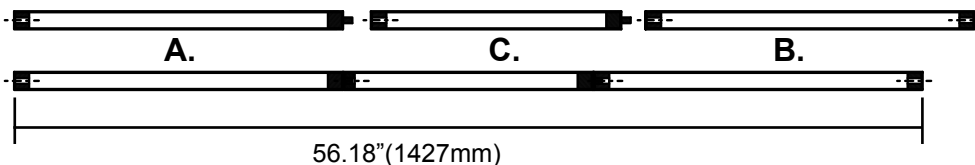


(1) 4.57" (116mm) - Used with Horizontal Queen Beds - 1 Female End & 1 Male End

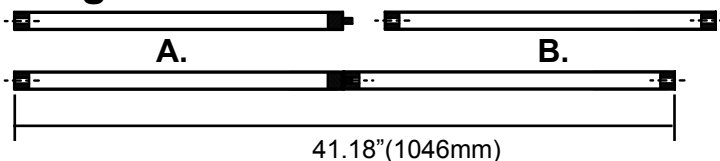
Queen Assembled



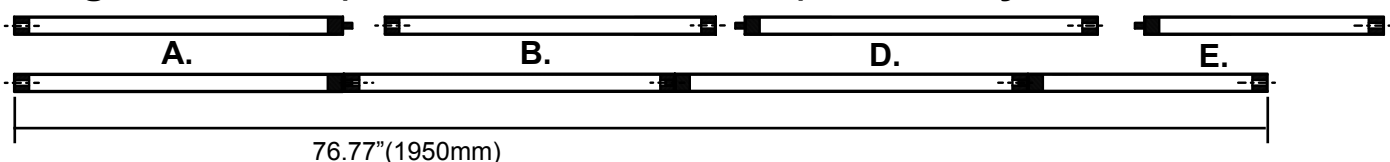
Full / Double Assembled



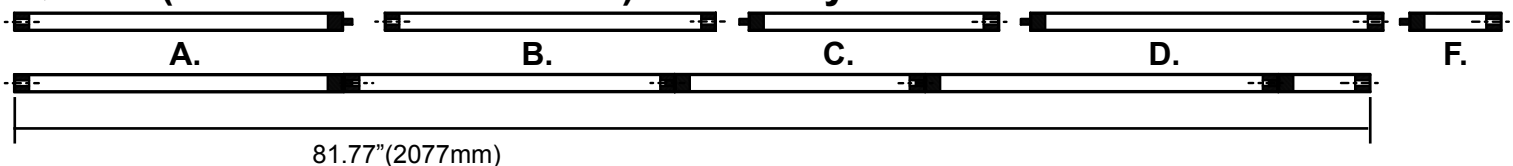
Single / Twin Assembled



Single / Double (Horizontal Orientation) Assembly



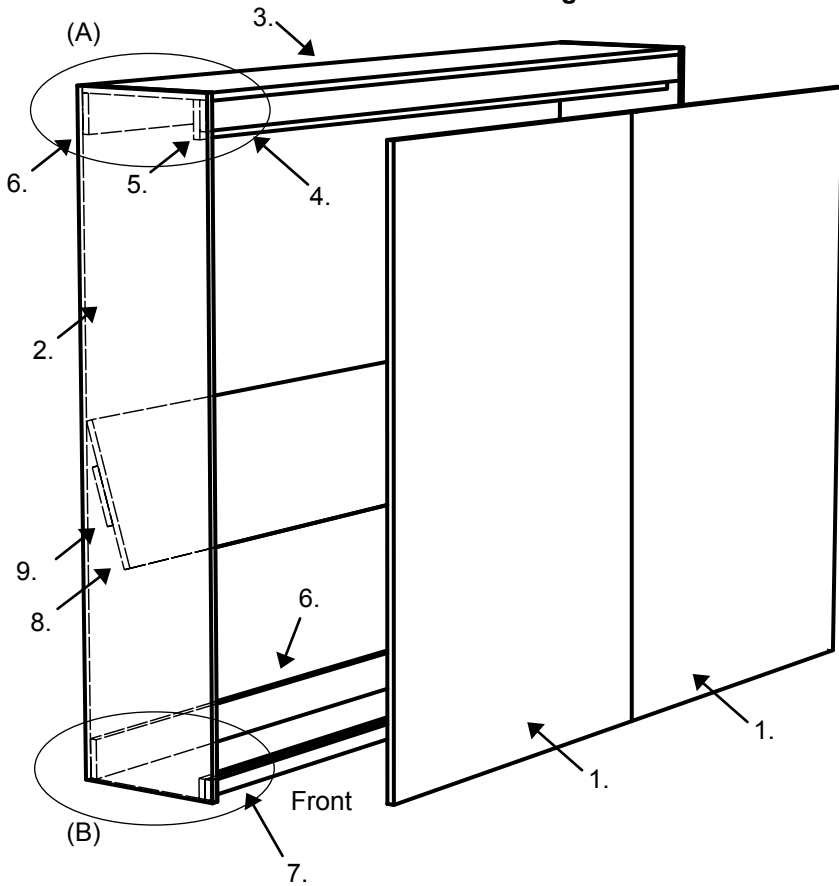
Queen (Horizontal Orientation) Assembly



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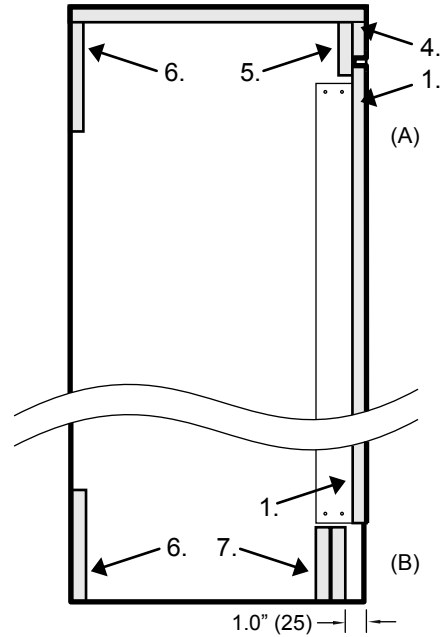
Bed Assembly (Horizontal Orientation)

Drawing 1.

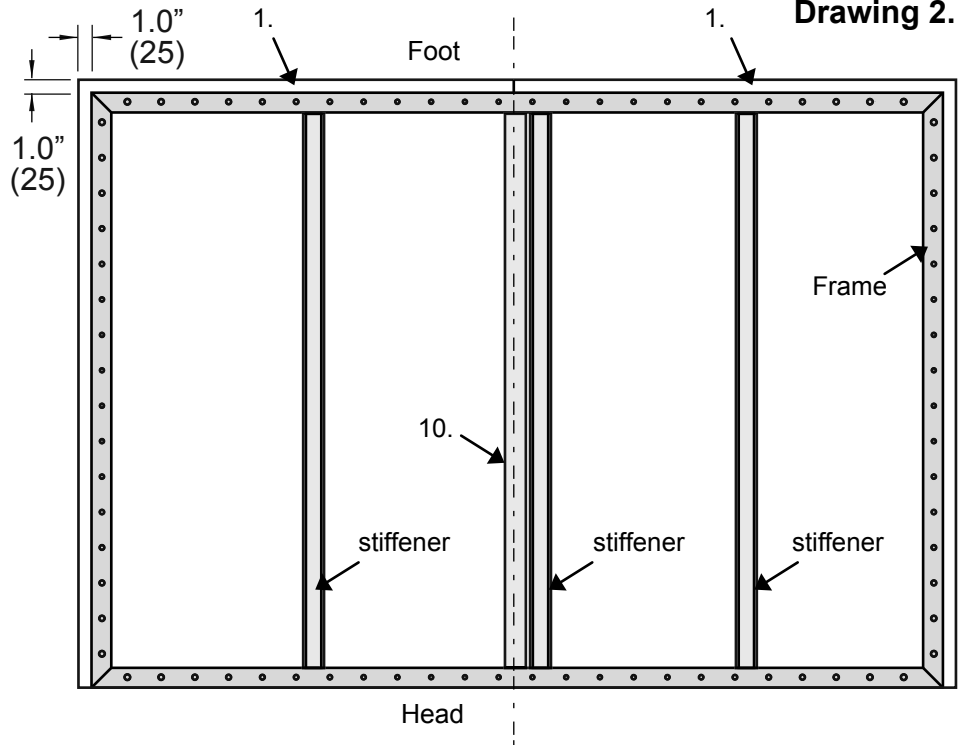


For Power Packs:

#SBLM:
Spring Balance Lift Mechanism
#SBLM-A:
Spring Balance Lift Mechanism Adjustable



Drawing 2.



It is recommended to reinforce the vertical seam where the face panels meet with a 3/4"x3" (18x76mm) wood stiffener (Panel Connector) held in place with wood screws to the face panels. Use the steel stiffeners as well; one next to the wood stiffener and the other two equally spaced.