

DIY Alpha Murphy Bed

(Horizontal Pre-Cut Version)



It's like having your own shop!

Assembly Instructions

Questions call 501.753.9699

Designed to exceed International ISO 9002
Standards for Residential Specifications

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Step 1: Check Your Components

Thank you for your purchase of this DIY Murphy bed. We try to make this projects as easy as possible for you. Take a minute and check your contents.

Hardware

Qty.	Frame Carton Items	Comments	✓
2	Frame End Sections	Identical Head & Foot	☐
2	Frame Side Sections	Identical, Right or Left	☐
3(5)	Stiffeners - Bed Face (King Size)	Space evenly between Frame Sides	☐
2	Fold-away Legs	One Left - One Right	☐
1	Leg Connector Rod	Stabilizes and Eases Leg Operation	☐
Hardware Card #3			
14	Bolt 10-24x1/2" (M6x12mm) Black	Bolt Frame corners	☐
2	Bolt 10-24x1 1/4" (M6 x 32mm) Black	Bolt Leg Stop Foot corners	☐
16	Nut 10-24 (M6) Black Nylock	Use with #1214 & #1213	☐
4	Angle 1"x1"x1 3/4" (25x25x44mm) Black	Use inside Frame corners	☐
2	1/2"x3/4" (13x19mm) Round Black Cylinder	Use with #1213 as Leg Stop	☐
Hardware Card #4			
2	1 1/2"x5/16" (T1.5x40mm) Black Washer	Secure Leg inside Frame	☐
2	1 1/2"x.765" (T2.5x40mm) Black Washer	Secure Leg inside Frame	☐
2	1 1/2"x.765" (T2.5x40mm) Black Nylon Washer	Between Leg & outside of Frame	☐
2	Nut 5/16" (M8) Black Nylock	Secure Leg inside Frame	☐
2	Bolt 1/4"-20 Black Hex Head	Attach Leg to Leg Rod	☐
2	Star Washer for #1210	Attach Leg to Leg Rod	☐
Hardware Card #5			
1	Nylon Web Strap with Buckle	Secure Mattress to Bed Frame	☐
2	3/4"x1/4" (T1.5x25mm) Washer	Secure Nylon Web Strap to Bed Face Panel under Mattress	☐
2	#8x5/8" (M4x15mm) Wood Screw	Secure Nylon Web Strap	☐
Hardware Card #7 - King size includes 2 bags			
110	#8x5/8" (M4x15mm) Wood Screw	Attach Steel Bed Frame to Bed Face	☐

Qty.	Mechanism Carton Items	Comments	
1	Lift Mechanism - Right Side	Attach to Right Side Panel	☐
1	Lift Mechanism - Left Side	Attach to Left Side Panel	☐
2	#1 Bags containing 9 Springs each	Install correct number in each Mechanism	☐
1	13" Plastic Pipe	Used to set the Lift Mechanisms	☐
Hardware Card #2			
10	Machine Screw 5/16-18 x 1 1/4"	To attach Lift Mechanisms to Side Panels	☐
4	Hex Head Bolt 5/16-18 x 1"	Attach Mechanism to Frame Side section	☐
2	Allen Head Bolt 5/16-18 x 1"	Position Mechanism Arm on Frame Side section	☐
16	Hex Head Nylock Nut	Secure Bolts and Screws	☐
1	Allen Wrench 5/16"	For Allen Head bolts	☐

Single/Twin Horizontal

Overall Cabinet Dimensions

Mattress Size: 39" x 75" (12" Max Thickness) 80"w x 49 3/4"h x 16"d (Projection from wall: 49")

Qty.	Description	Width	Length	☒
4	(A) Bed Face Panels	19 1/2"	41 3/4"	
2	(B) Side Panels	16"	49"	
1	(C) Top Panel	16"	80"	
1	(D) Top Facia	2"	78 1/2"	
1	(E) Top Facia Stiffener	3"	78 1/2"	
1	(F-1) Top Rear Stiffener	4"	78 1/2"	
1	(F-2) Bottom Rear Stiffener	4"	78 1/2"	
1	(G) Kick & Kick Stiffener (1 1/2" thick)	4"	78 1/2"	
1	(H) Head Board	14 1/2"	78 1/2"	
1	(I) Head board Stiffener	4"	78 1/2"	
3	(J) Panel Connectors	3"	37"	
2	(K) Top Cleats	1"	13 13/16	
8	1 1/2" Pocket screws (Top Build)			
40	1 1/4" finish nails (Top Build)(Headboard Build)			
8	Brackets (with 32 - 3/4" screws)			
16	1 1/2" Pocket Screws (Top Install)			
4	Hardwood Dowels (Headboard Installation)			
8	1 1/2" Pocket Screws (Headboard Install)			

Full/Double Horizontal

Overall Cabinet Dimensions

Mattress Size: 54" x 75" (12" Max Thickness) 80"w x 64 3/4"h x 16"d (Projection from wall: 64")

Qty.	Description	Width	Length	☒
4	(A) Bed Face Panels	19 1/2"	56 3/4"	
2	(B) Side Panels	16"	64"	
1	(C) Top Panel	16"	80"	
1	(D) Top Facia	2"	78 1/2"	
1	(E) Top Facia Stiffener	3"	78 1/2"	
1	(F-1) Top Rear Stiffener	4"	78 1/2"	
1	(F-2) Bottom Rear Stiffener	4"	78 1/2"	
1	(G) Kick & Kick Stiffener (1 1/2" thick)	4"	78 1/2"	
1	(H) Head Board	14 1/2"	78 1/2"	
1	(I) Head board Stiffener	4"	78 1/2"	
3	(J) Panel Connectors	3"	52"	
2	(K) Top Cleats	1"	13 13/16	
8	1 1/2" Pocket screws (Top Build)			
40	1 1/4" finish nails (Top Build)(Headboard Build)			
8	Brackets (with 32 - 3/4" screws)			
16	1 1/2" Pocket Screws (Top Install)			
4	Hardwood Dowels (Headboard Installation)			
8	1 1/2" Pocket Screws (Headboard Install)			

Queen Horizontal

Overall Cabinet Dimensions

Mattress Size: 60" x 80" (12" Max Thickness) 85"w x 70 3/4"h x 16"d (Projection from wall: 70")

Qty.	Description	Width	Length	☑
4	(A) Bed Face Panels	20 3/4"	62 3/4"	
2	(B) Side Panels	16"	70"	
1	(C) Top Panel	16"	85"	
1	(D) Top Facia	2"	83 1/2"	
1	(E) Top Facia Stiffener	3"	83 1/2"	
1	(F-1) Top Rear Stiffener	4"	83 1/2"	
1	(F-2) Bottom Rear Stiffener	4"	83 1/2"	
1	(G) Kick & Kick Stiffener (1 1/2" thick)	4"	83 1/2"	
1	(H) Head Board	14 1/2"	83 1/2"	
1	(I) Head board Stiffener	4"	83 1/2"	
3	(J) Panel Connectors	3"	58"	
2	(K) Top Cleats	1"	13 13/16"	
8	1 1/2" Pocket screws (Top Build)			
40	1 1/4" finish nails (Top Build)(Headboard Build)			
8	Brackets (with 32 - 3/4" screws)			
16	1 1/2" Pocket Screws (Top Install)			
4	Hardwood Dowels (Headboard Installation)			
8	1 1/2" Pocket Screws (Headboard Install)			

What we have done for you!

- 4-(A) Bed Face Panels
 - Cut to width and length
 - Edge band edges
 - Broke over edges
 - Sanded with to 220 grit (prep for finish)
- 2-(B) Verticals
 - Cut to width and length
 - Edge band edges (Front and top)
 - Bore the 5 holes on each for mechanism
 - Countersink each hole
 - Bore hole for dowels to locate headboard.
 - Broke over edges
 - Sanded with to 220 grit (prep for finish)
- (C) Top Panel
 - Cut to width and length
 - Edge band edges
 - Broke over edges
 - Sanded with to 220 grit (prep for finish)
- (D) Top Facia
 - Cut to width and length
 - Edge band edges
 - Broke over edges
 - Sanded with to 220 grit (prep for finish)
- (E) Top Facia Stiffener
 - Cut to width and length
 - Edge band edges
 - Broke over edges
 - Sanded with to 220 grit (prep for finish)
 - Pocket one pocket hole in each end for installation step.
- (F-1) Top Rear Stiffener
 - Cut to width and length
 - Edge band edges
 - Broke over edges
 - Sanded with to 220 grit (prep for finish)
 - Pocket two pockets in each end for installation step.
- (F-2) Bottom Rear Stiffener
 - Cut to width and length
 - Edge band edges
 - Broke over edges
 - Sanded with to 220 grit (prep for finish)
- (G) Kick & Kick Stiffener (1 ½" thick)
 - Cut to width and length (2 pcs.)
 - Double it up to make 1 ½" thick.
 - Edge band edges
 - Broke over edges
 - Sanded with to 220 grit (prep for finish)

- (H) Head Board
 - Cut to width and length
 - Edge band edges
 - Bore holes for dowels
 - Pocket two pocket holes in each end for install step.
 - Broke over edges
 - Sanded with to 220 grit (prep for finish)
- (I) Head board Stiffener
 - Cut to width and length
 - Broke over edges
 - Sanded with to 220 grit (prep for finish)
 - Pocket two holes in each end for installation step.
- (J) Panel Connector
 - Cut to width and length
 - Drill double row series of holes.
 - Broke over edges
 - Sanded with to 220 grit (prep for finish)
- (K) Top Cleats
 - Cut to width and length
 - Broke over edges
 - Drilled holes to mount to header and for installation step.

Step 2: Build the Header

Using the (C) Top Panel, (D) Top Facia, (E) Top Facia Stiffener, (F-1) Top Rear Stiffener, K) Top Cleats assemble the Header.

2-1 Attach the Top Facia to the Top Panel with glue and 1 ¼" finish nails. Make sure the banded edge of the (D) Top Facia is down and the Top Fascia is attached to the banded edge of the Top Panel. Flush with the front and ¾" off each side (see figure 2-1)

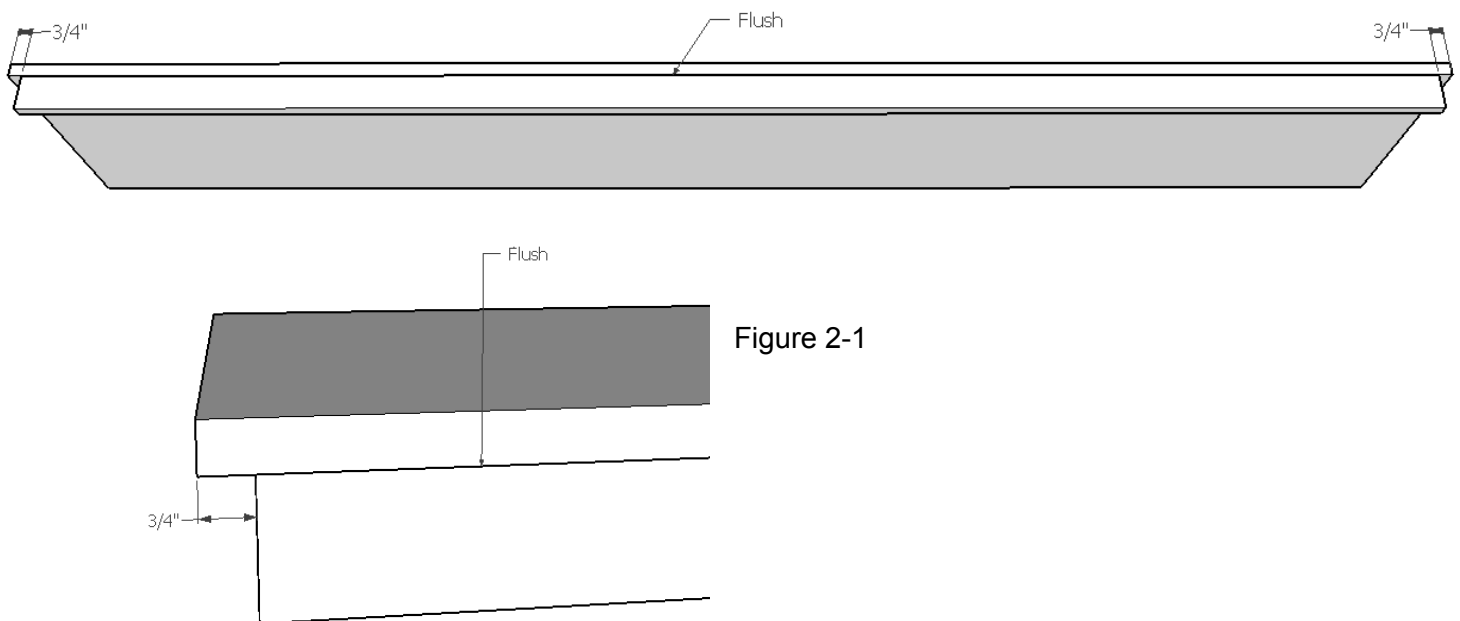


Figure 2-1

2-2 Attach the Top Facia Stiffener to the Top Facia using glue and 1 ¼" nails. Nail from the inside. Make sure banded edge is down. Note: make sure the pockets are facing toward the back. You will use those pockets during the installation step. This will be ¾" off the sides.

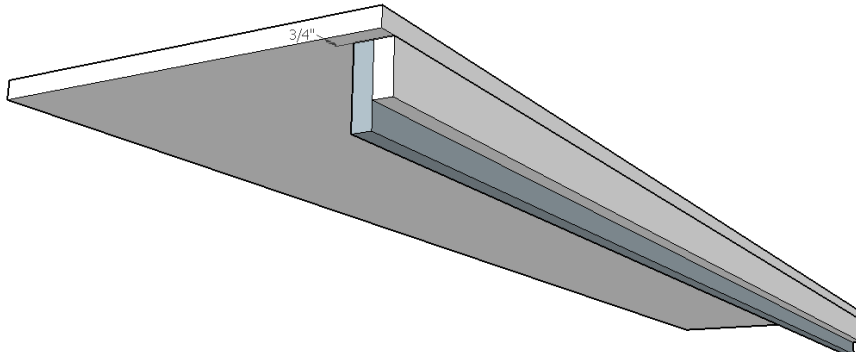


Figure 2-2

2-3 Attach the Top Rear Stiffener (F-1) to the back using glue and 1 ¼" nails. Make sure the banded edge is down and the pockets are facing toward the back. This will be ¾" off each side as in the previous two steps.

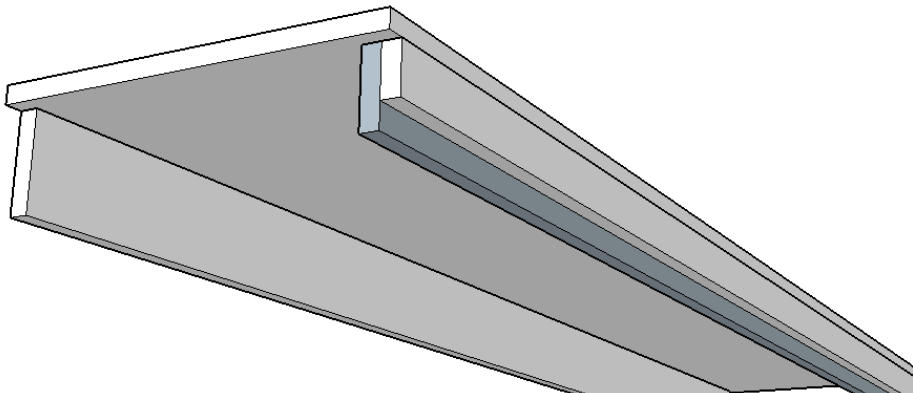


Figure 2-3

2-4 Add the Top Cleats (K) to the Top Panel in between the Top Rear Stiffener and the Top Facia Stiffener using glue and 1 ½" screws.

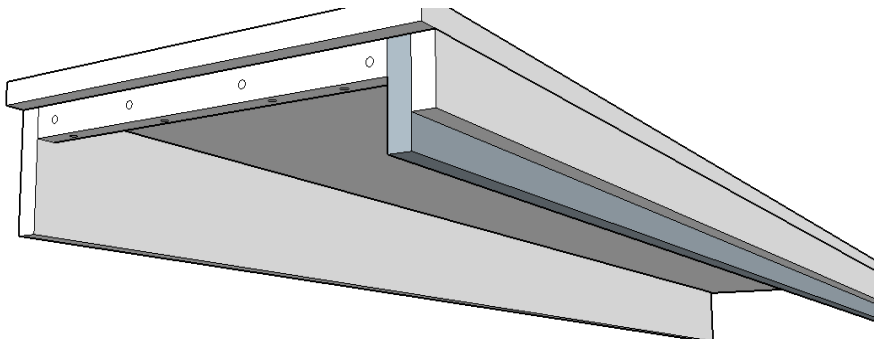
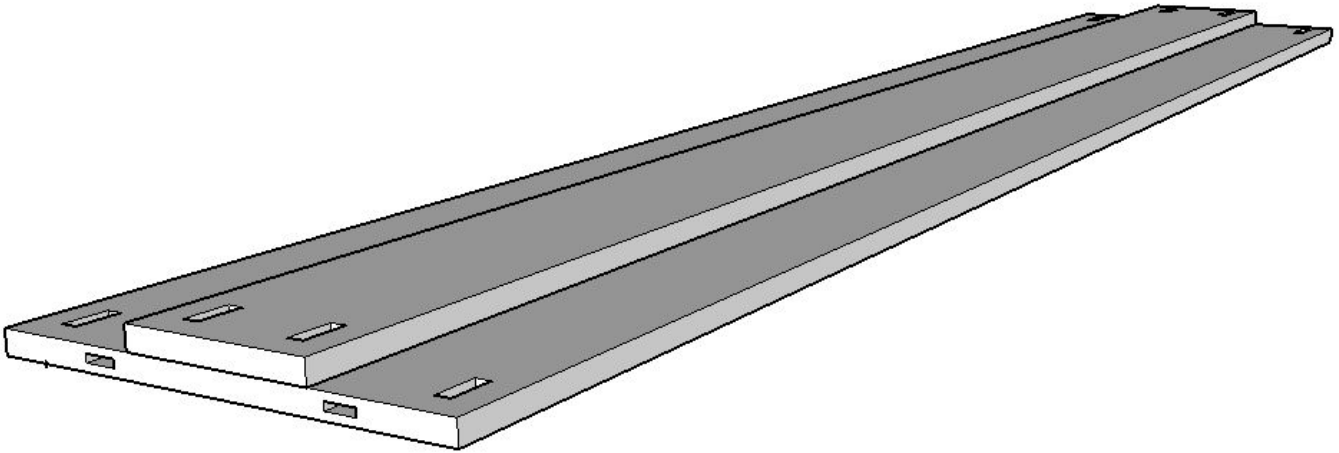


Figure 2-3

Your header is now complete!

Step 3: Attach the Head Board Stiffener (I) to the Head board (H).

3-1 Center the Head Board Stiffener on the back side of the Head Board. Glue and nail it down using 1 ¼" nails. Note: Some applications may have all pockets on the Head Board panel. See Figure 3-1



Step 3: Finish all components

-Finish both sides of all components.

Tip: By placing pieces like the verticals, headboard and header on legs made from scrap material, you can finish both sides at the same time and save time flipping.

Install the Murphy Bed

Step 4: Mount the Lift Mechanism

4-1: The left and right mechanism hole pattern will line up with the hole pattern on the Side Panel (B). The bolts will be fed through the side that has the counter sinks drilled.

4-2 Hole A will not have a standard nut. It is either a threaded hole or it will use a disk like bolt "Arm Lock Stop". Get Hole A started.

4-3 Insert the bolt in the other holes and loosely tighten onto the nutes.

4-4 Once all are in place securely tighten using the Allen Wrench provided and a ½" wrench.

Step 5: Install the springs on the Lift Mechanism

SPRING APPLICATION CHART

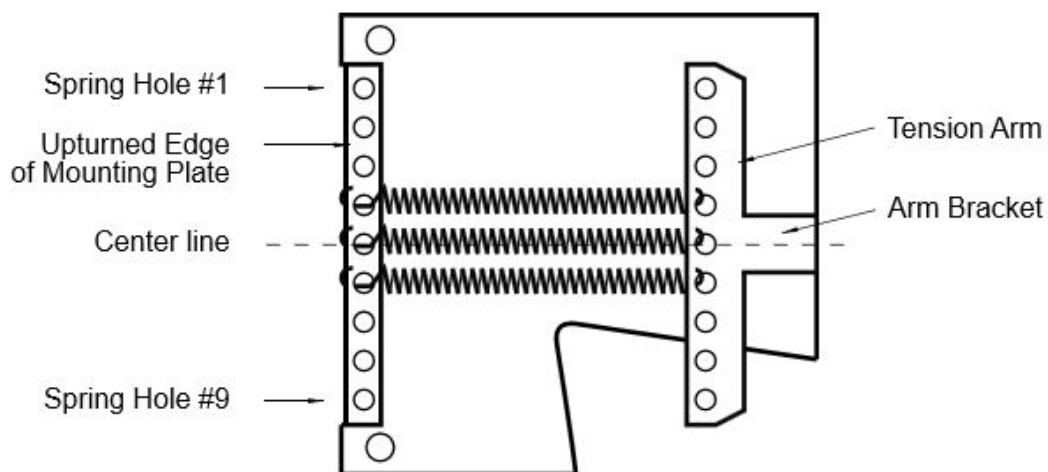
Please Note: These are recommendations only. Actual number of springs required will depend on the total weight of the bed face unit including the mattress and all bedding

BED SIZE	STANDARD FACE (NO DESK)	STANDARD FACE (ADDED DESK)
Single/Twin	4 Springs Vertical (3 Horizontal)	5 Springs Vertical (4 Horizontal)
Double/Full	5 Springs Vertical (4 Horizontal)	6 Springs Vertical (5 Horizontal)
Queen	6 Springs Vertical (5 Horizontal)	7 Springs Vertical (6 Horizontal)
King	8 Springs Vertical	9 Springs Vertical

After you have completed installing and checking the operation of your bed, you may find it necessary to add or remove springs to achieve the correct lift effort of between 5 to 10 pounds.

There are nine locations for springs. If the bed requires an even number of springs, do not use the center hole (#5 from the top). If the bed requires an odd number of springs, start with the center hole (#5 from the top) and work outward in both directions evenly.

Hook the springs so the open ends are facing outward. You may have to gently pry up the tension arm and slide the spring under and snap them into place in the proper hole, matching the same numbered hole from the top of the mechanism back plate. You should have an equal number of springs on each side of the center hole. Use the same number of springs and the same layout on both the left and right mechanisms.



Step 6: Assemble the Bed Cabinet

- If possible, the Bed Cabinet should be assembled in the room where it will be used.
- The following installation will be done with the bed face down on the floor.

Place the verticals finished edge down and dowel holes toward the inside on a clean floor. You may even lay a soft blanket down to protect the finish from being scratched.

Headboard installation

6-1: Insert the headboard dowels into the ends of the headboard (two on each side). No need to measure we've taken that step out of you. With the pocket screw holes facing toward the back, insert the headboard dowels into the side of the verticals. Secure with 1 ½" screws (4 each side).

6-2: Use Angle Brackets to assemble Bottom Rear Stiffener and Bottom Kick & Kick Stiffener in position shown in Figure 6-1 and Figure 6-2. Use two Angle Brackets on each end. Attaching using supplied ¾" screws. NOTE: The Bottom Rear Stiffener can be moved closer to the front if there is a cutout for base molding on the back of the verticals.

6-3: Attach header as shown in Figure 6-2. Be sure back edge of the header is flush with Front and top of Side Panels. Attach with 1 ½" supplied screws.

6-4: Put 1 ½" screws in the pockets that are in the Top Rear stiffener and the Top Facia Stiffener.

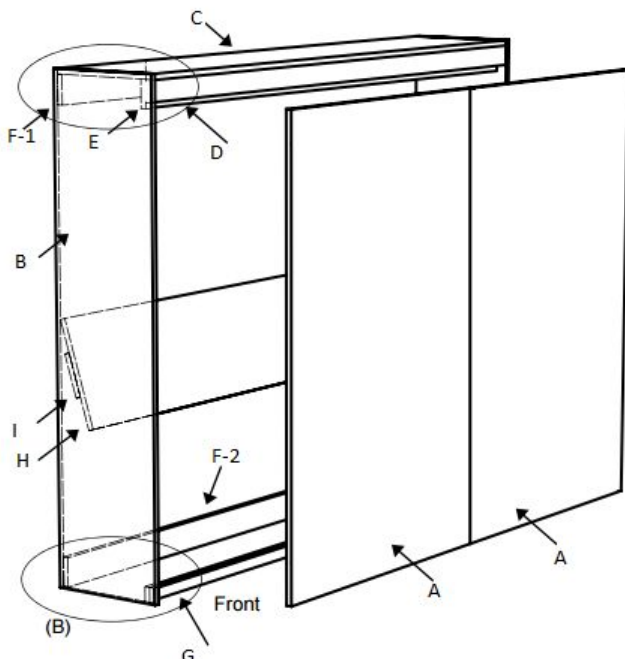


Figure 6-1 **Brackets not shown in the drawing**

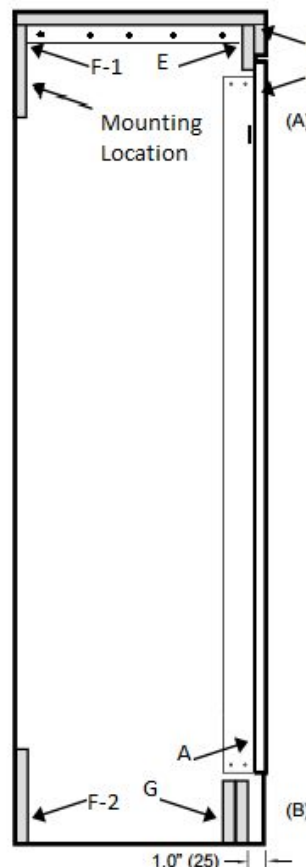


Figure 6-2

Step 6: Attach Bed Cabinet Securely to Wall

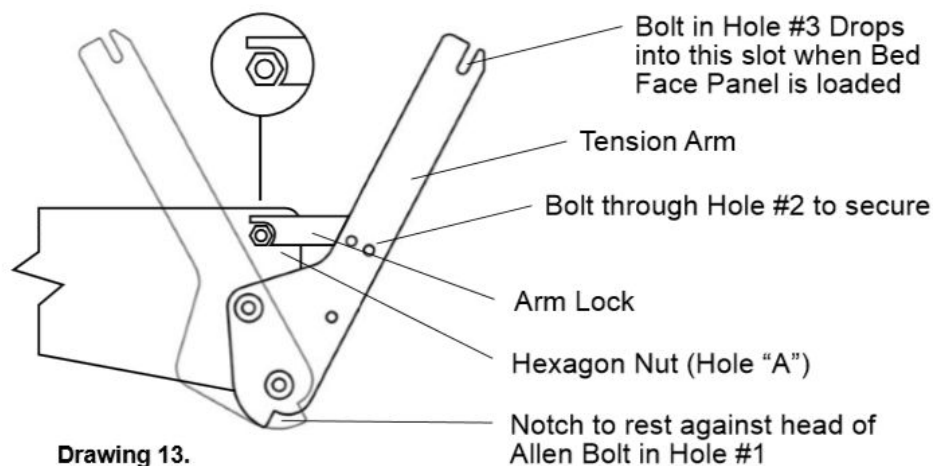
We cut out for your base molding so you don't have to remove base molding off the wall. If our cutout was not large enough more may need to be done. Use a jig saw to perform this task.

6-1: Find Studs

Prior to placing cabinet against the wall, locate 3 studs or other wall frame members at the level of the Top Panel (top of bed). Alert: The cabinet must be secured to studs or other wall structural members. If the wall is not a wood stud wall, use metal stud screws, toggle bolts or concrete expansion bolts if necessary.

6-2: Attach to wall

Now that the cabinet is square and plumb, **pre-drill hole in the Top Rear Stiffener at the stud location** **Secure with 3" screws. Repeat this for two other stud locations.** (see Drawing 9. but instead of brackets you'll drill through the back board on the header). See figure 6-2.



Holding one foot against the bottom front edge of the side panel and using the 13" (330mm) PVC tube, lever the tension arm out until you can set the arm lock to the hex nut at the hole A (see drawing 13.). This is the hex nut at the top front corner of the mechanism.

Tip: If you set the "Arm Lock" on top of the bolt before you pull the Tension Arm back it will fall into place. Do not put your fingers back there to while pulling it back.!

Caution: If possible have a helper assist in the setting of the mechanism and loading of the bed face panel. DO NOT reach behind the tension arm when you are doing the setting procedure.

Step 7: Install the Bed Face Panel Unit

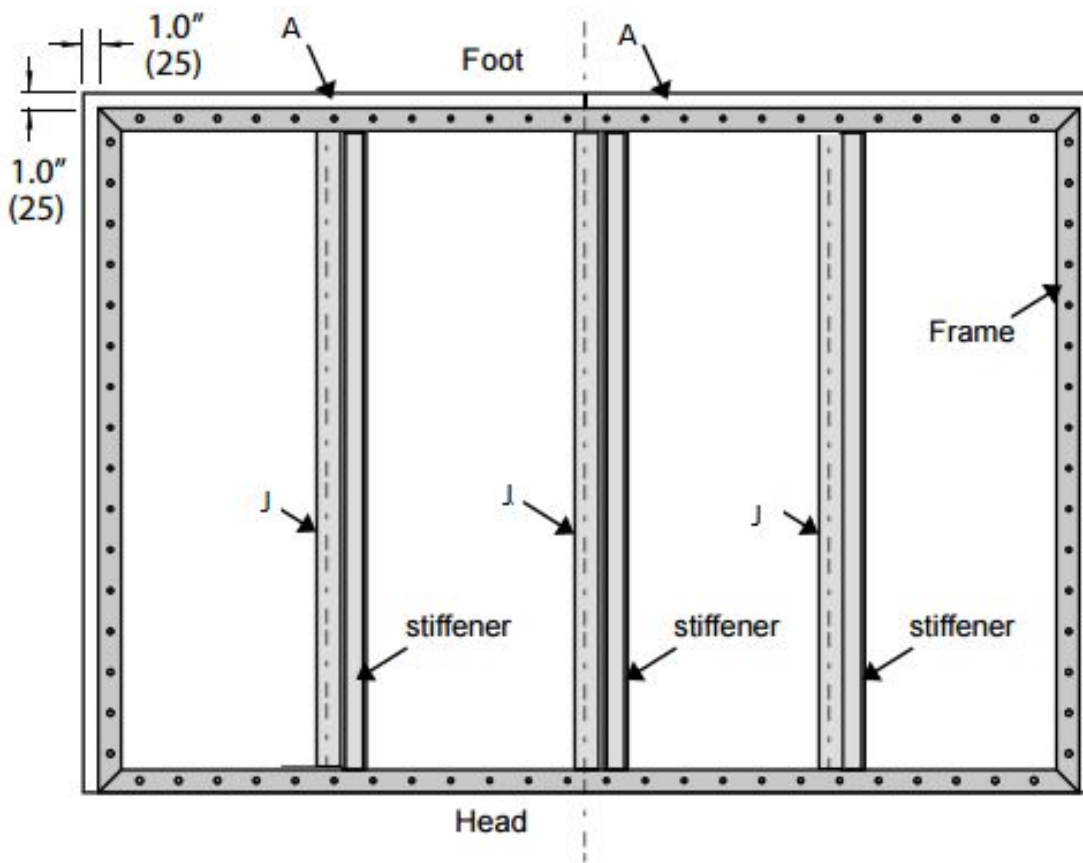


Figure 7-1

7-1 Lay the Bed Face Panels down on a non-scratch surface such as a carpet or blanket.

7-2: Completely assemble the 4 Frame Sections with the corner brackets and the 3/16"x1/2" (M5x12mm) black bolts provided. Refer to Drawing 17 below to properly place the leg stops at outer right and left bottom holes at the foot of the bed frame.

7-3: Position the bed frame on the bed face panels. With the Head Frame section flush with the head end of the Bed Face Panels. Refer to Figure 7-1. Carefully attach the Bed Frame so it is centered on the Bed Face Panels; you will have approximately 1" (25mm) space from the bed frame to the panel edges right and left and at the bed foot.

Note: It is very important to have the Bed Frame centered on the Bed Face Panels.

Any error will be noticed in the vertical sight lines when the bed is closed.

7-4: Three steel stiffeners are provided for all beds (5 for King). These notched stiffeners should be located and attached to divide the Bed Face length into four Sections. Locate them approximately 1 1/2" from the seam of each pane. This will leave room for the Panel Connectors (J). Use caution not to damage raised panels by putting screws in recessed areas.

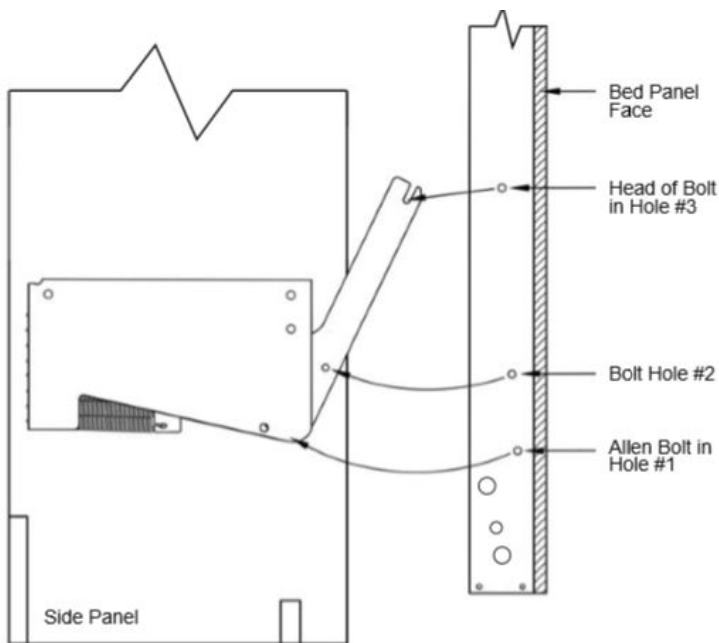
7-5: Attach the Panel Connectors (J) to support the seams. They should fit against the stiffeners installed in step 7-4.

7-6: Attach the Nylon Web Strap approximately 18" (460mm) down from the foot of the bed and 6" (150mm) in from the sides, for tucking in sheets. The Straps help secure the mattress in the vertical position (see drawing above)

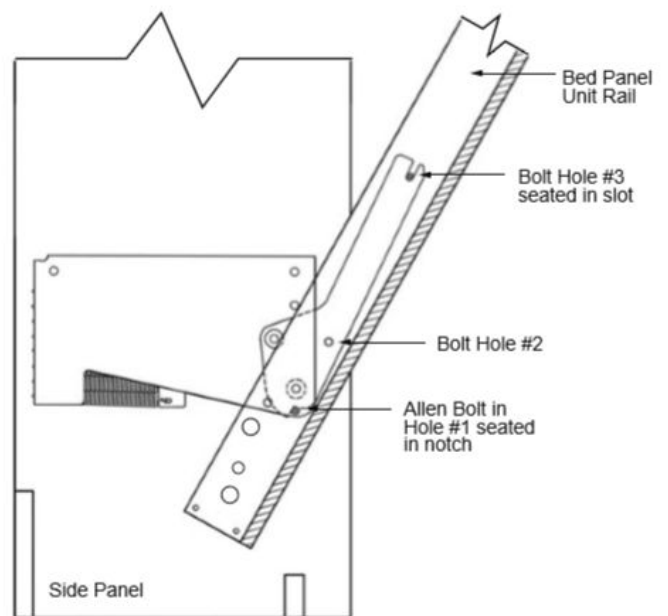
7-8: From hardware card 2, insert a Allen Head Bolts through Hole #1 (6 3/4" from end of side frame) on both left and right side frames (see Drawing 14).

7-8 Also Inserted two 5/16" (M8x20mm) Hex Head Bolts from the outside of the frame through Hole #3. We have left these loose.

7-9 Stand the Bed Face Panel in vertical position between the tension arms, lift evenly until the bolt in Hole #3 drops in the slotted end of each tension arm. Gently tilt the bed face toward you until the Allen Bolts in Hole #1 are completely seated in the bottom notch of the tension arms. Insert the remaining 5/16" (8mm) Hex Head Bolts through tension arms into Holes #2 and fasten with 5/16" (8mm) Nylock Nuts; securely tighten these and the nuts on Hole #3.



Drawing 14.



Drawing 15.

7-10 When all bolts are securely tightened, you may tilt the panel outward to approximately 45 degrees to release the arm locks. You will hear a click as they disengage.

Caution:

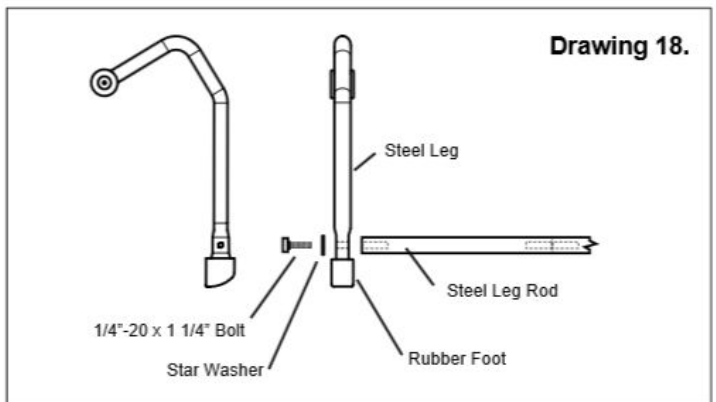
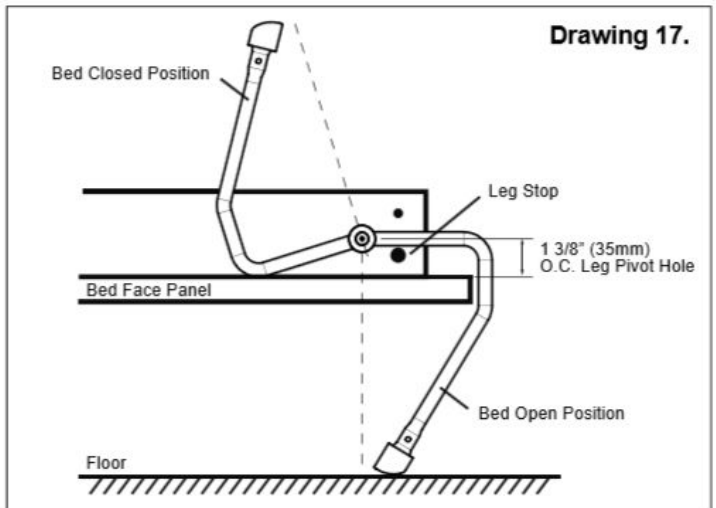
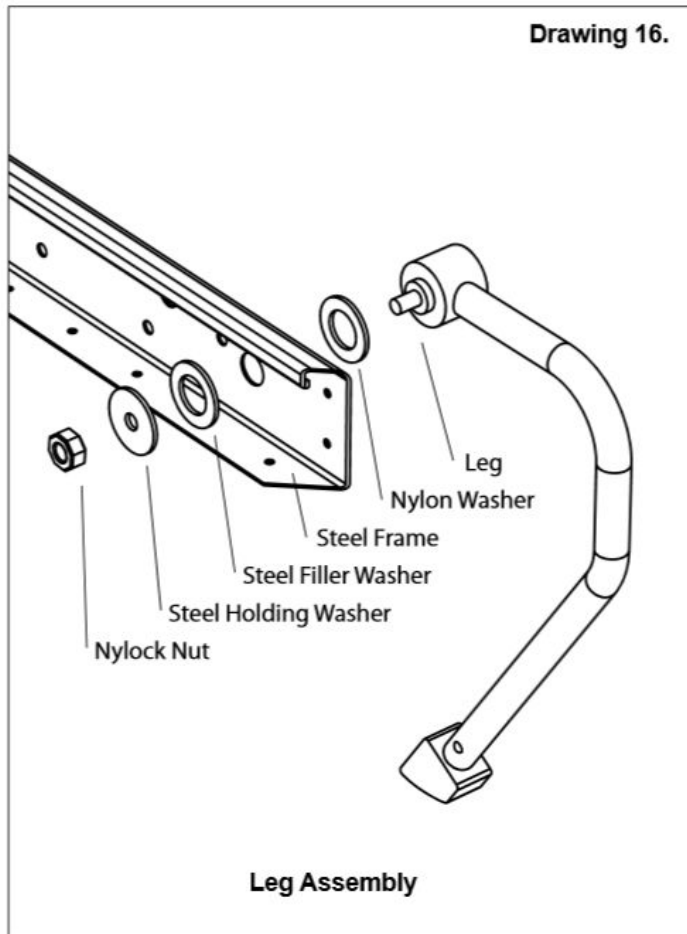
Hold the Face Panel securely, Do Not let it slam shut. Balance is not achieved until the mattress is loaded in the bed.

Leveling of the bed cabinet is essential. Check the level both side to side and front to back. Proper leveling will facilitate proper closure and exact sight lines of the fit of the Face Panel to the Cabinet.

Step 8: Install Handle = Legs - Mechanism Covers - Mattress

8-1 Position and secure handles for ease of operation. Measure down approximately 36" (914mm) from the panel top to the top of the handles.

8-2 Install legs with the washers 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.



8-3 Install leg connector rod between legs and secure with 1/4"x1 1/4" (M4x32mm) Hex head bolts and star washers. Be sure they are securely tightened so not to become loose.

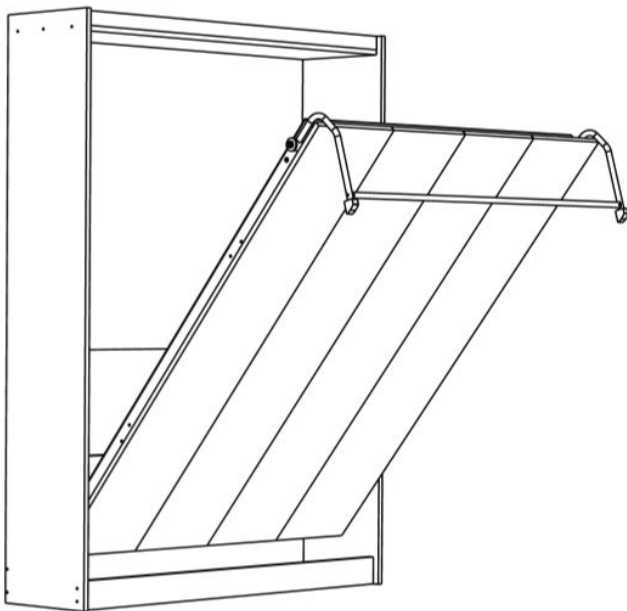
8-4 Install the mattress and secure with previously installed Nylon Straps.

8-5 Snap the powder coated steel mechanism covers in place - secure with #8x1 1/4" (M4x32mm) black wood screws through the standoff on the backer plate

Complete Bed Assembly

Follow up to Initial Assembly

Check that the Bed Cabinet is level and square so the Bed Face has equal clearance of the Cabinet on both sides, top to bottom. If the Cabinet is leaning to one side, nudge it at the floor level. If the top is uneven, place shims under the Side Panels. If bed is too heavy to operate easily or slams shut, remove the 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. *Vertical example is shown but applies the horizontal unit as well.*



Right Side
Looking through Side Panel.

Office Use only

Note: this is the new design with overlapping top. We shortend the verticals by $\frac{3}{4}$ " and extended the top by $\frac{3}{4}$ "

Steps

- Cut parts on CNC

Qty.	Description	Banding	Other	☒
4	(A) Bed Face Panels	B2-NE, B1-N, B1-N, B2-NW	Some applications may have a groove cut between the panel. If so W side of all panels except the far left.	
2	(B) Side Panels	B1-E	Countersink holes on outside	
1	(C) Top Panel	B3-ENW	85"	
1	(D) Top Facia	B1-S	83 $\frac{1}{2}$ "	
1	(E) Top Facia Stiffener	B1-S	Pocket 2 each end W,E	
1	(F-1) Top Rear Stiffener	B1-S	Pocket 2 each end W,E	
1	(F-2) Bottom Rear Stiffener	4"	B1-N	
1	(G) Kick & Kick Stiffener (1 $\frac{1}{2}$ " thick)	4"	Double up and then band (1 $\frac{1}{2}$ " thick)	
1	(H) Headboard	B1-N	Domino at 2 $\frac{3}{8}$ from each corner, on the ends. Pocket two on each side (far top and bottom only) Center pockets will be on Headboard stiffener.	
1	(I) Head board Stiffener	NB	Two pockets each end	
3	(J) Panel Connectors	3"	Drill double row of screw holes about every 8"	
2	(K) Top Cleats	1"	Drill 4 holes on the end grain and then 5 the other direction	