

MURPHY®

MURPHY
WALLBED
SYSTEMS
INC.

DO-IT-YOURSELF (D.I.Y.)

SINGLE-DOUBLE-QUEEN MURPHY BEDS MECHANISM AND HARDWARE KIT

Designed to Exceed International ISO 9002
Standards for residential specifications

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

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

TOLL FREE: 1-877-887-1717
PHONE: 1-773-248-5188
FAX: 1-773-281-6430



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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" 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
 - Purchased Cabinet Components and Hardware
 - Necessary Tools

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

Contents of Do-It-Yourself Murphy Bed (D.I.Y. Murphy Bed)

Qty.	Item	
2	#SLBM - 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" Plastic Pipe	<input type="checkbox"/>
1	Hardware Card #5 - Velcro Straps	<input type="checkbox"/>
1	Leg Rod - 4 pcs. (Single, Double or Queen Sizes)	<input type="checkbox"/>

Hardware Card #20

3	2" x 2" 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"/>
2	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 Card #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 Card #22

22	1" x 1" x 1 3/4" 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 Card #23

12	Confirmat Screws	(12 for Rails).....	<input type="checkbox"/>
12	Confirmat Screw Caps	(12 for Rails).....	<input type="checkbox"/>

Required Materials List

Qty.	Item																																		
3 sheets *or* 4 sheets 200 1 Pint 6 Sheets 6 Sheets 20-24 linear feet 200 linear feet 1	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 40%;">Single/Twin</td> <td rowspan="2" style="font-size: 2em; vertical-align: middle;">}</td> <td rowspan="2" style="vertical-align: middle;">Wood Panelling (plycore) or MDF 3/4" x 48" x 96" (use 4 sheets if needed for grain matched bed panels)</td> <td style="text-align: right;"><input type="checkbox"/></td> </tr> <tr> <td>Double/Full/Queen</td> <td style="text-align: right;"><input type="checkbox"/></td> </tr> <tr> <td>#8 x 1 1/4" Countersink Woodscrews</td> <td></td> <td></td> <td style="text-align: right;"><input type="checkbox"/></td> </tr> <tr> <td>Carpenter's Glue</td> <td></td> <td></td> <td style="text-align: right;"><input type="checkbox"/></td> </tr> <tr> <td>120 Grit Sandpaper</td> <td></td> <td></td> <td style="text-align: right;"><input type="checkbox"/></td> </tr> <tr> <td>180 Grit Sandpaper</td> <td></td> <td></td> <td style="text-align: right;"><input type="checkbox"/></td> </tr> <tr> <td>3/4" x 3/4" Spruce, Birch or Fir (see Cut List for length for cleats)</td> <td></td> <td></td> <td style="text-align: right;"><input type="checkbox"/></td> </tr> <tr> <td>13/16" Iron-on or peel & stick, pre-glued wood-grain edge tape</td> <td></td> <td></td> <td style="text-align: right;"><input type="checkbox"/></td> </tr> <tr> <td>Mattress (maximum 12" thick)</td> <td></td> <td></td> <td style="text-align: right;"><input type="checkbox"/></td> </tr> </table>	Single/Twin	}	Wood Panelling (plycore) or MDF 3/4" x 48" x 96" (use 4 sheets if needed for grain matched bed panels)	<input type="checkbox"/>	Double/Full/Queen	<input type="checkbox"/>	#8 x 1 1/4" Countersink Woodscrews			<input type="checkbox"/>	Carpenter's Glue			<input type="checkbox"/>	120 Grit Sandpaper			<input type="checkbox"/>	180 Grit Sandpaper			<input type="checkbox"/>	3/4" x 3/4" Spruce, Birch or Fir (see Cut List for length for cleats)			<input type="checkbox"/>	13/16" Iron-on or peel & stick, pre-glued wood-grain edge tape			<input type="checkbox"/>	Mattress (maximum 12" thick)			<input type="checkbox"/>
Single/Twin	}	Wood Panelling (plycore) or MDF 3/4" x 48" x 96" (use 4 sheets if needed for grain matched bed panels)			<input type="checkbox"/>																														
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3/4" x 3/4" Spruce, Birch or Fir (see Cut List for length for cleats)			<input type="checkbox"/>																																
13/16" Iron-on or peel & stick, pre-glued wood-grain edge tape			<input type="checkbox"/>																																
Mattress (maximum 12" 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" Spade Bit	<input type="checkbox"/>
1	1/4" or 6mm Allen Key	<input type="checkbox"/>
2	72" Bar Clamps	<input type="checkbox"/>
1	Awl	<input type="checkbox"/>
6	G-Clamps (6" 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"/>

Murphy Bed Cabinet - D.I.Y. - Material Cut List

Double/Full Bed (Mattress size 54" x 75" x 10" maximum thickness)

Overall Cabinet Dimensions: 59 7/8"W x 81"H x 15 7/8" D
Protrusion from wall to foot bed: 85 1/2"

Quantity	Description	Width	Length	Material
2	SIDE PANELS	16"	85"	3/4" Ply
1	HEAD BOARD	15"	58"	3/4" Ply
1	TOP STRETCHER	15"	58"	3/4" Ply
1	BOTTOM STRETCHER	6"	58"	3/4" Ply
1	KICK	4"	58"	3/4" Ply
4	BED PANELS	14 3/8"	78 1/4"	3/4" Ply
or				
2	BED PANELS	28 3/4"	78 1/4"	3/4" Ply
1	FACIA	2"	58"	3/4" 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"	52 1/2"	3/4" Ply
2	SIDE RAILS	4 1/2"	75 3/4"	3/4" Ply
2	END RAILS	4 1/2"	55 1/2"	3/4" Ply
2	SIDE CLEATS	3/4"	74 1/4"	3/4" X 3/4" solid
2	END CLEATS	3/4"	54"	3/4" X 3/4" solid

Queen Bed (Mattress size 60" x 80" x 10" maximum thickness)

Overall Cabinet Dimensions: 65 7/8"W x 86"H x 15 7/8" D
Protrusion from wall to foot bed: 90 1/2"

Quantity	Description	Width	Length	Material
2	SIDE PANELS	16"	90"	3/4" Ply
1	HEAD BOARD	15"	64"	3/4" Ply
1	TOP STRETCHER	15"	64"	3/4" Ply
1	BOTTOM STRETCHER	6"	64"	3/4" Ply
1	KICK	4"	64"	3/4" Ply
4	BED PANELS	15 7/8"	83 1/4"	3/4" Ply
or				
2	BED PANELS	31 3/4"	83 1/4"	3/4" Ply
1	FACIA	2"	64"	3/4" 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"	58 1/2"	3/4" Ply
2	SIDE RAILS	4 1/2"	80 3/4"	3/4" Ply
2	END RAILS	4 1/2"	61 1/2"	3/4" Ply
2	SIDE CLEATS	3/4"	79 1/4"	3/4" X 3/4" solid
2	END CLEATS	3/4"	60"	3/4" X 3/4" solid

Murphy Bed Cabinet - D.I.Y. - Material Cut List (cont.)

Single / Twin (Mattress size 39" x 75" x 10" maximum thickness)

Overall Cabinet Dimensions: 44 7/8"W x 81"H x 15 7/8" D
Protrusion from wall to foot bed: 85 1/2"

Quantity	Description	Width	Length	Material
2	SIDE PANELS	16"	85"	3/4" Ply
1	HEAD BOARD	15"	43"	3/4" Ply
1	TOP STRETCHER	15"	43"	3/4" Ply
1	BOTTOM STRETCHER	6"	43"	3/4" Ply
1	KICK	4"	43"	3/4" Ply
2	BED PANELS	21 1/4"	78 1/4"	3/4" Ply
or				
1	BED PANELS	42 1/2"	78 1/4"	3/4" Ply
1	FACIA	2"	43"	3/4" 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"	37 1/2"	3/4" Ply
2	SIDE RAILS	4 1/2"	75 3/4"	3/4" Ply
2	END RAILS	4 1/2"	40 1/2"	3/4" Ply
2	SIDE CLEATS	3/4"	74 1/4"	3/4" X 3/4" solid
2	END CLEATS	3/4"	39"	3/4" X 3/4" solid

Step by Step Instructions

STEP 1: Prepare all Wood Cabinet Components

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

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

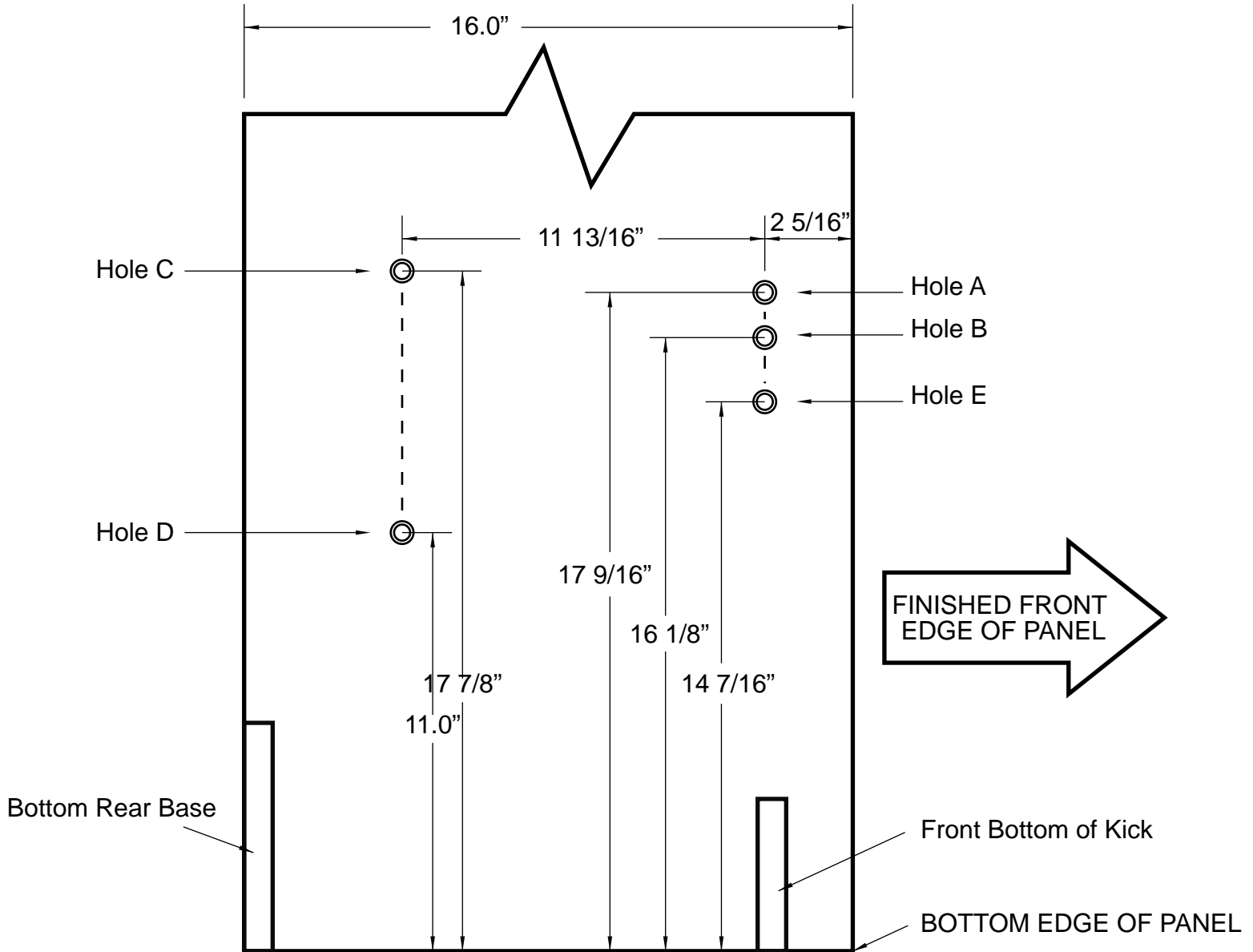
STEP 2: Mount the Lift Mechanism.

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

Marking the Mounting Holes for the Lift Mechanism (Refer to Drawing #1 for exact hole locations)

1. Exactly mark the mounting holes on the inside of each side panel.
2. Drill a 1/16" pilot hole for each mounting bolt. Drill the final hole with a 5/16" bit.
3. Mount left and right - tighten machine screws just enough to draw bolt heads flush with the side panel surface.

NOTE: All location measurements are from the front edge of the Cabinet Side Panels. Refer to Drawing 1.



Drawing #1

STEP 3: Installing the Springs on the right and left 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:

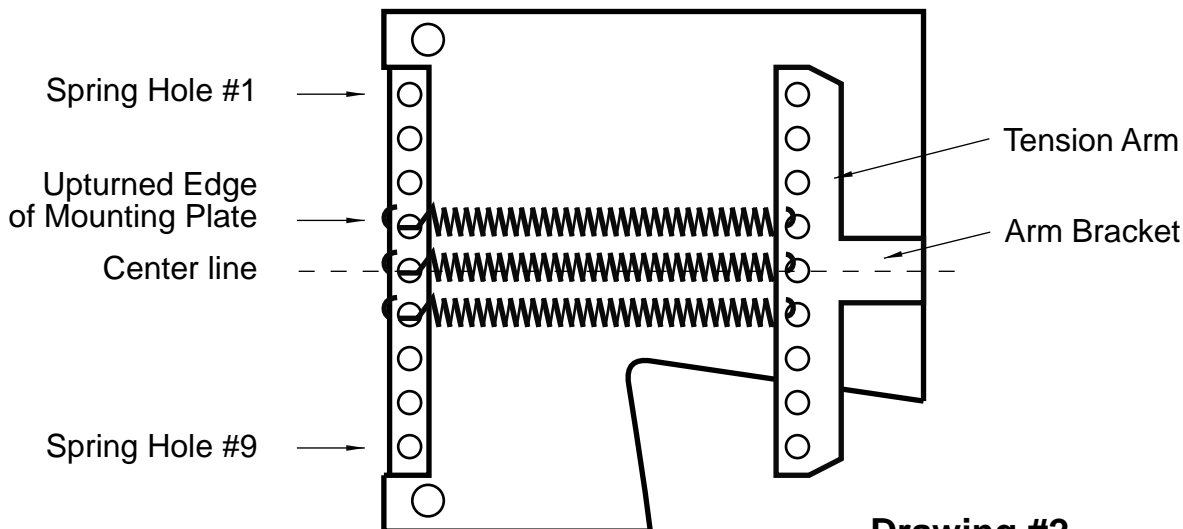
Plywood

Bed Size	6" Mattress	8" Mattress	10" Mattress
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.

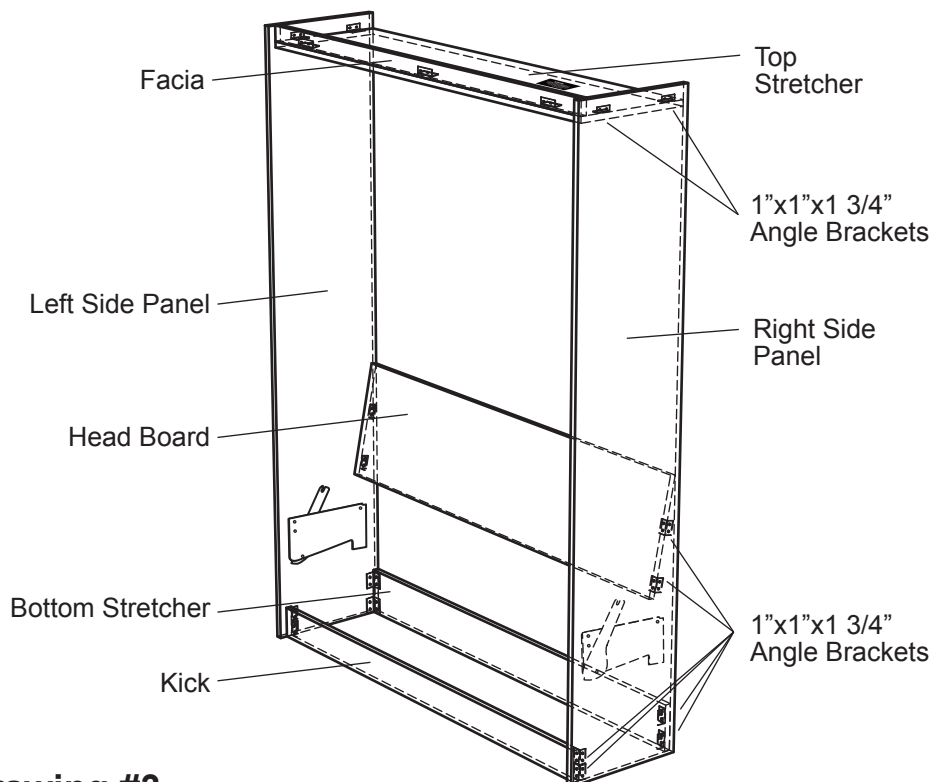
1. Start by hooking one end of the spring under the up turned edge of the backer plate. Lay the spring down and hook it into the matching hole in the T-shaped tension arm. You may pry up this arm with a wood handle or shim to make inserting the hook easier.
NOTE: All hook openings should face you.
2. 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.



Drawing #2

STEP 4: Assemble the Bed Cabinet

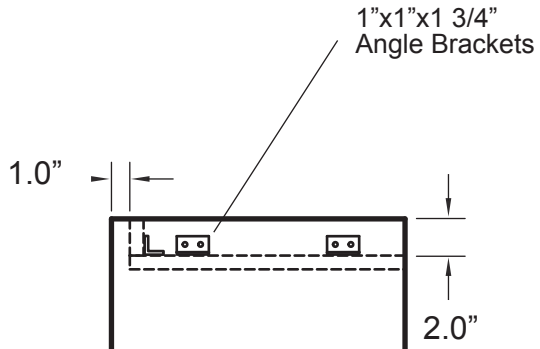
- Be sure that all Bed Cabinet components are cleaned, sanded, and finished at this time.
 - Bed Face Panels and Rails should not be finished at this time. Finishing will inhibit glue bond to Bed Face. Finish after assembly.
 - For easier final wall mount you should assemble bed cabinet in the room where 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" from the floor and 3" in from the back edge of the panels. Note from the plans #3 & #5 that this mounts the bottom edge of the headboard out 3" from the back or wall edge of the Side Panels. Use the 1" x 1" x 1 3/4" (2 each side) mounting brackets. 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" angle from the back edge.
 2. Use Angle Brackets to assemble Bottom Stretcher and Kick in position shown in plan #3 & #5. Use two Angle Brackets on each end.
 3. Attach Top Stretcher as shown in plan #3 & #5. Be sure back edge of the Stretcher is flush with back of Side Panels and inset 1" from front of Side Panels, and 2" down from top of Side Panels to match the height of the Facia. Facia sits on top of Top Stretcher flush with front edge and flush with top end of Side Panels.



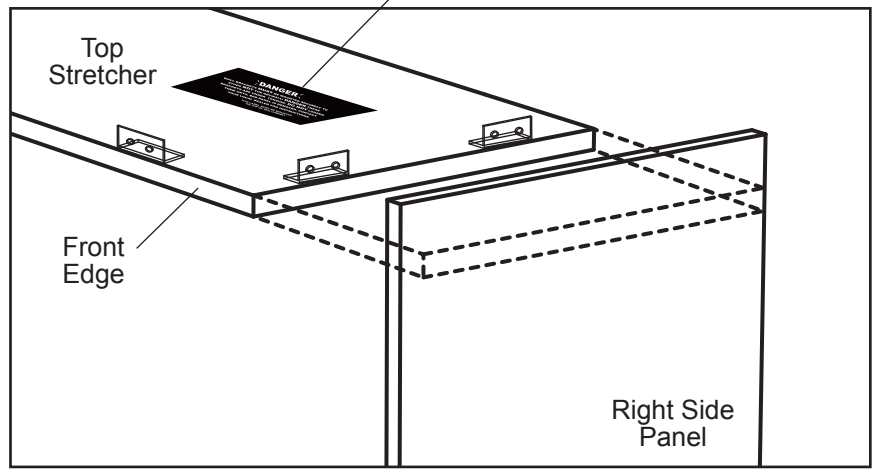
Drawing #3

STEP 4: Assemble the Bed Cabinet (cont.)

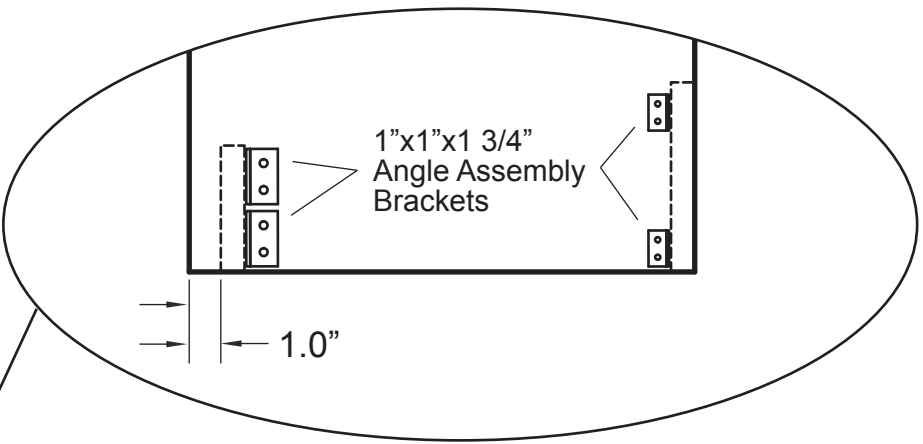
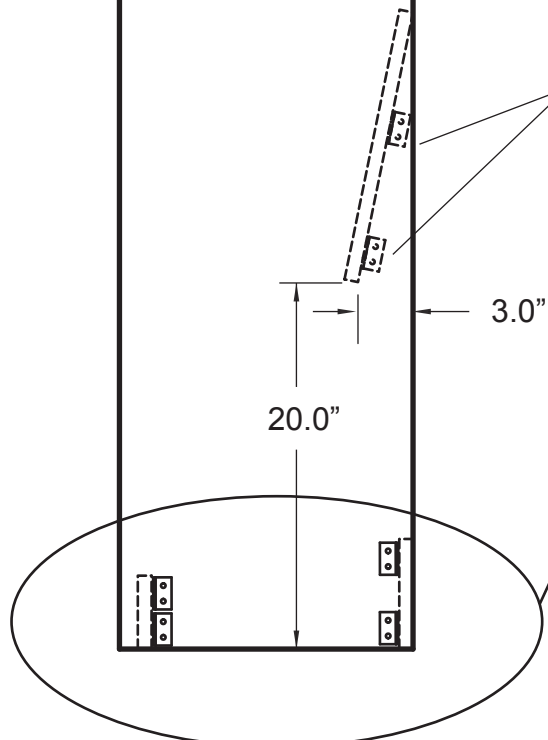
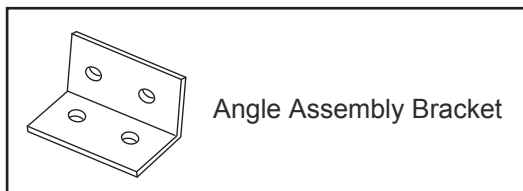
DANGER
 WALL BRACKETS **MUST** BE MOUNTED SECURELY TO STUDS **NOT** THE DRYWALL! **DANGER** THESE BRACKETS ARE UNDER TENSION. **DO NOT** LOOSEN THEM UNTIL BED PANEL IS REMOVED. CONTACT YOUR LOCAL DEALER FOR INSTRUCTIONS.
 THIS LABEL MUST BE MOUNTED ON TOP OF BED CABINET



Attach warning Label



Drawing #4

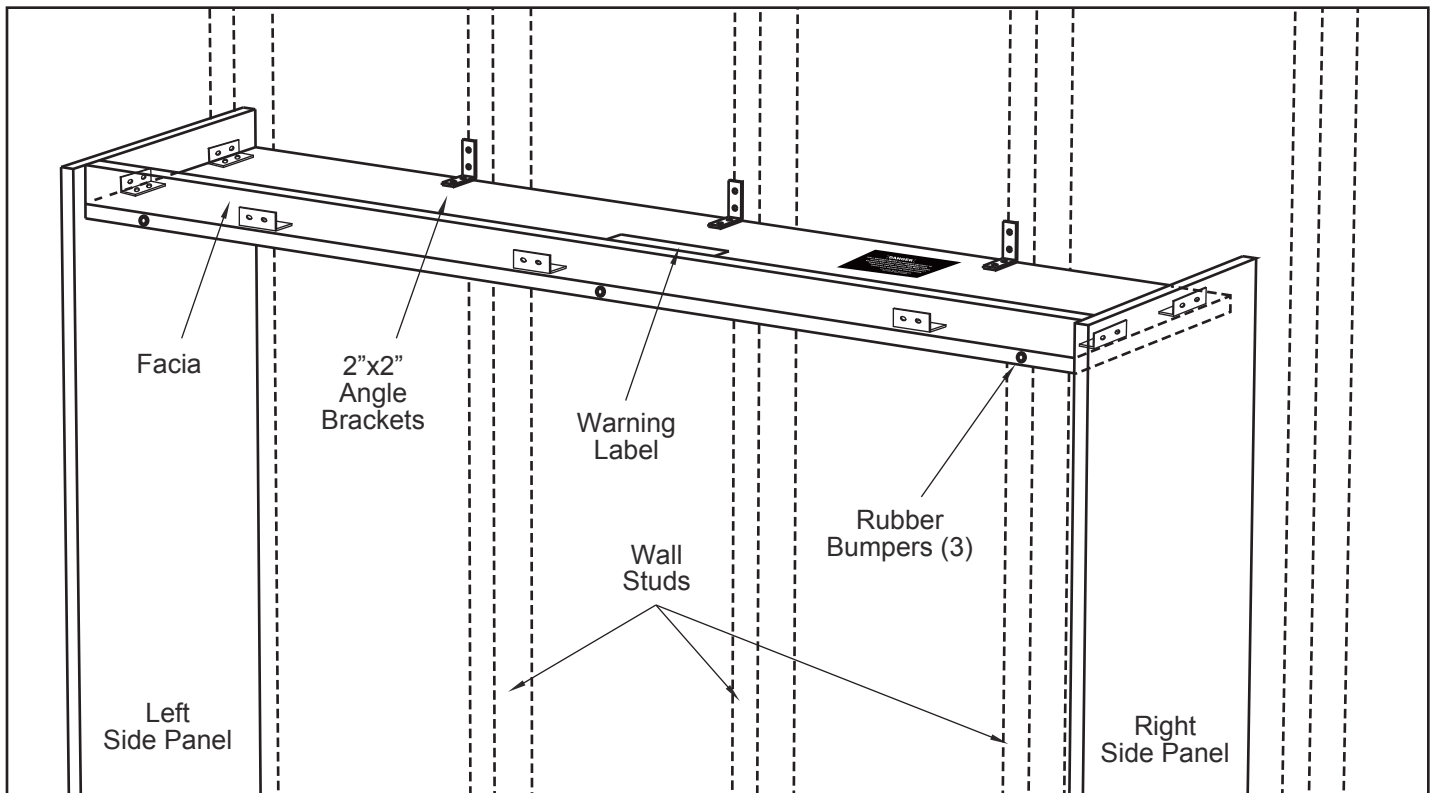


Drawing #5

STEP 5: Attach Bed Cabinet Securely to Wall

Hints: If the room is carpeted you may raise the kick up to 1/4" to clear the carpet. More than 1/4" 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" x 2" 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" flat head wood screws in each or three 2" x 2" brackets to attach to studs at the top level of the Top Stretcher (see plan #4). Re-check square and plumb and then secure 2" x 2" L-Brackets to Top Stretcher with #8 x 3/4" wood screws. Attach warning label to top of cabinet. Attach three Bumper Buttons to front edge of Top Stretcher. These Bumpers allow the Bed Face Panel to close quietly.



Drawing #6

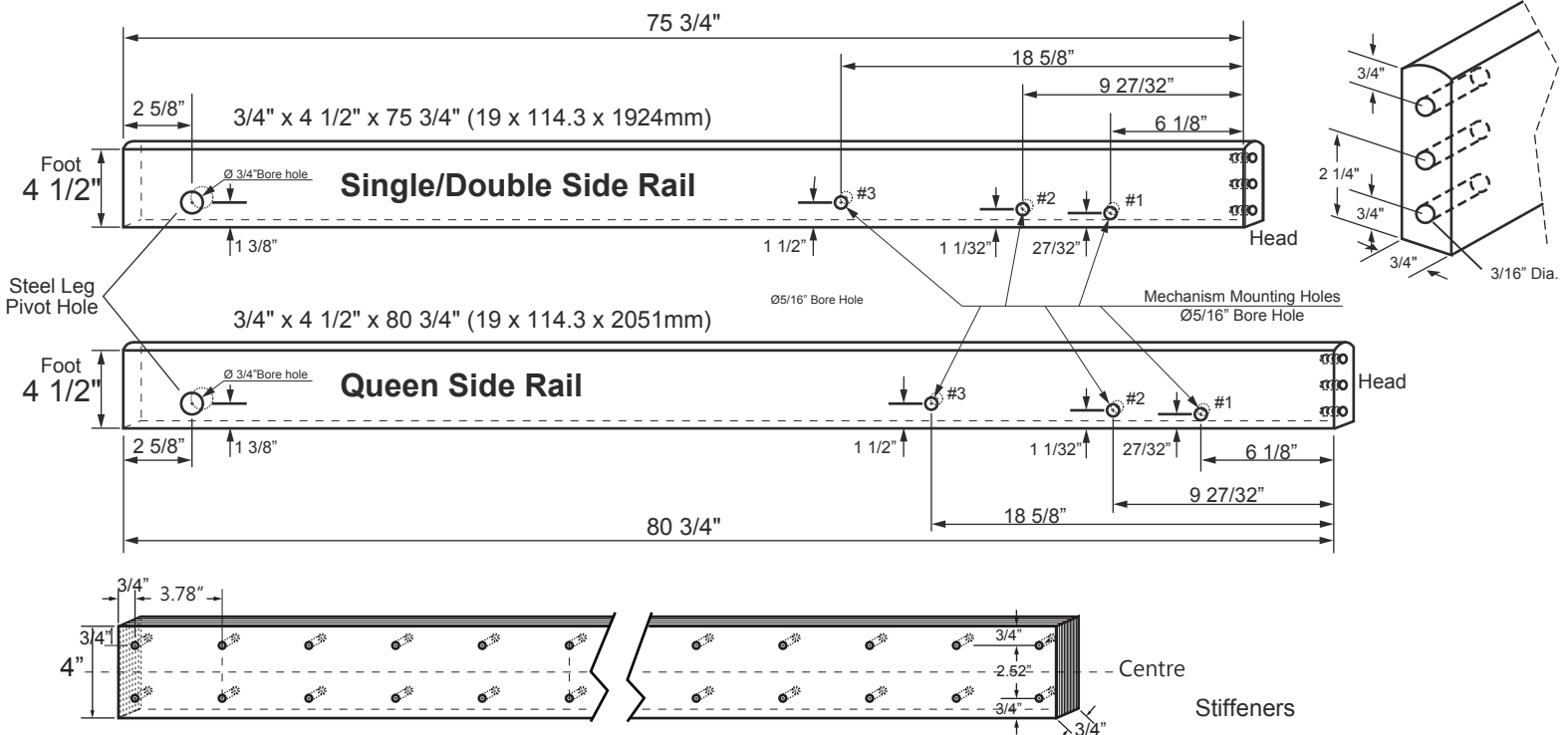
STEP 6: Assemble Bed Face Panel Unit / Prepare and assemble Cleats and Rails and attach to Bed Face Panel

1. Drill necessary holes in Side Rails to attach the Lift Mechanism and the fold down legs. Drawing #7 indicates where these holes must be drilled for mounting mechanism and leg assemblies to Bed Rails.
2. Drill through the four Cleats at approximate 4" 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" 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.

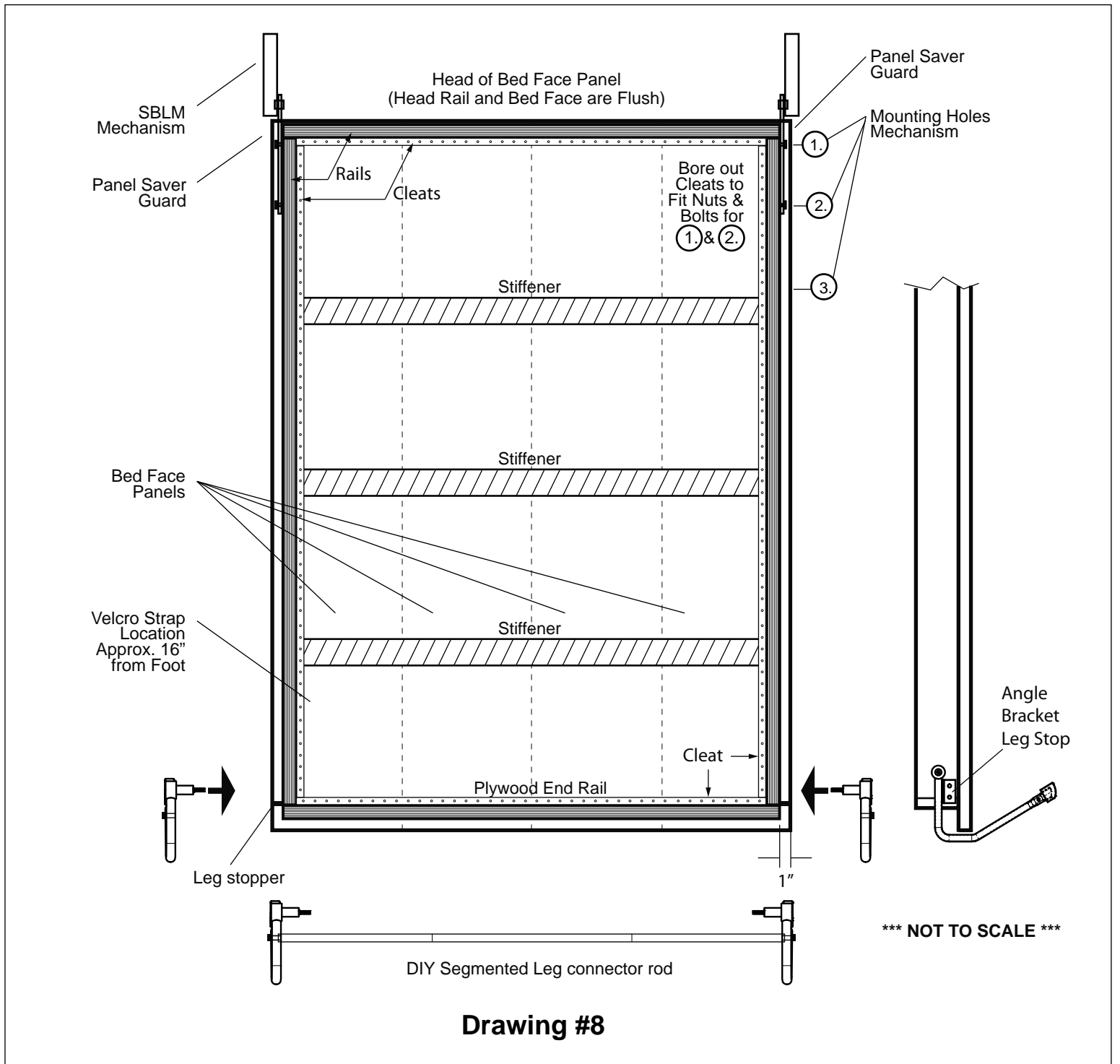
NOTE: The Bed Face Panel Unit absorbs the most weight and stress of all the Bed Cabinet components, therefore the unit must be glued and screwed at the time of assembly. Do not finish the wood components of this unit until it is completely assembled. This will assure maximum strength from the glued joints.

5. Position Bed Face Panels face down on a flat surface. Position three Stiffeners in locations shown in plan #8 - ends of stiffeners should be 2 3/8" 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" apart and 1" from both sides of the Stiffener.
ALERT: use caution not to drill into the seam of the Face Panels.

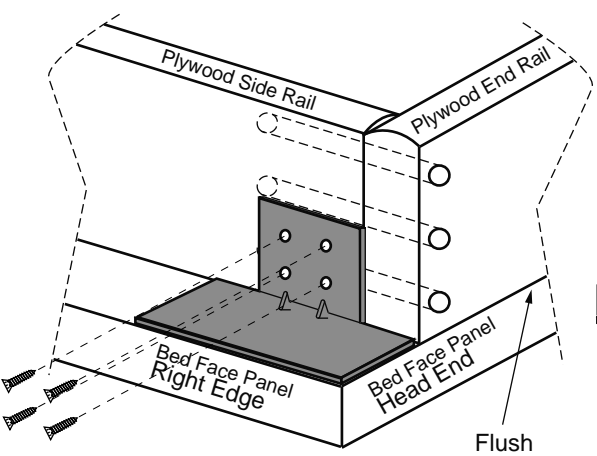
Plywood Side Rails



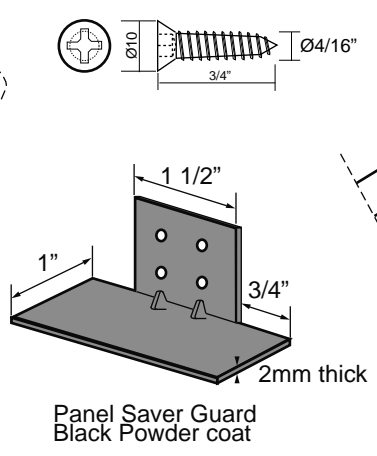
Drawing #7



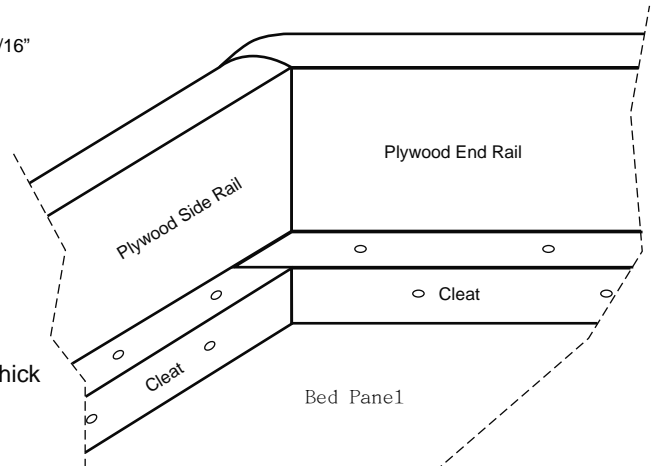
Drawing #8

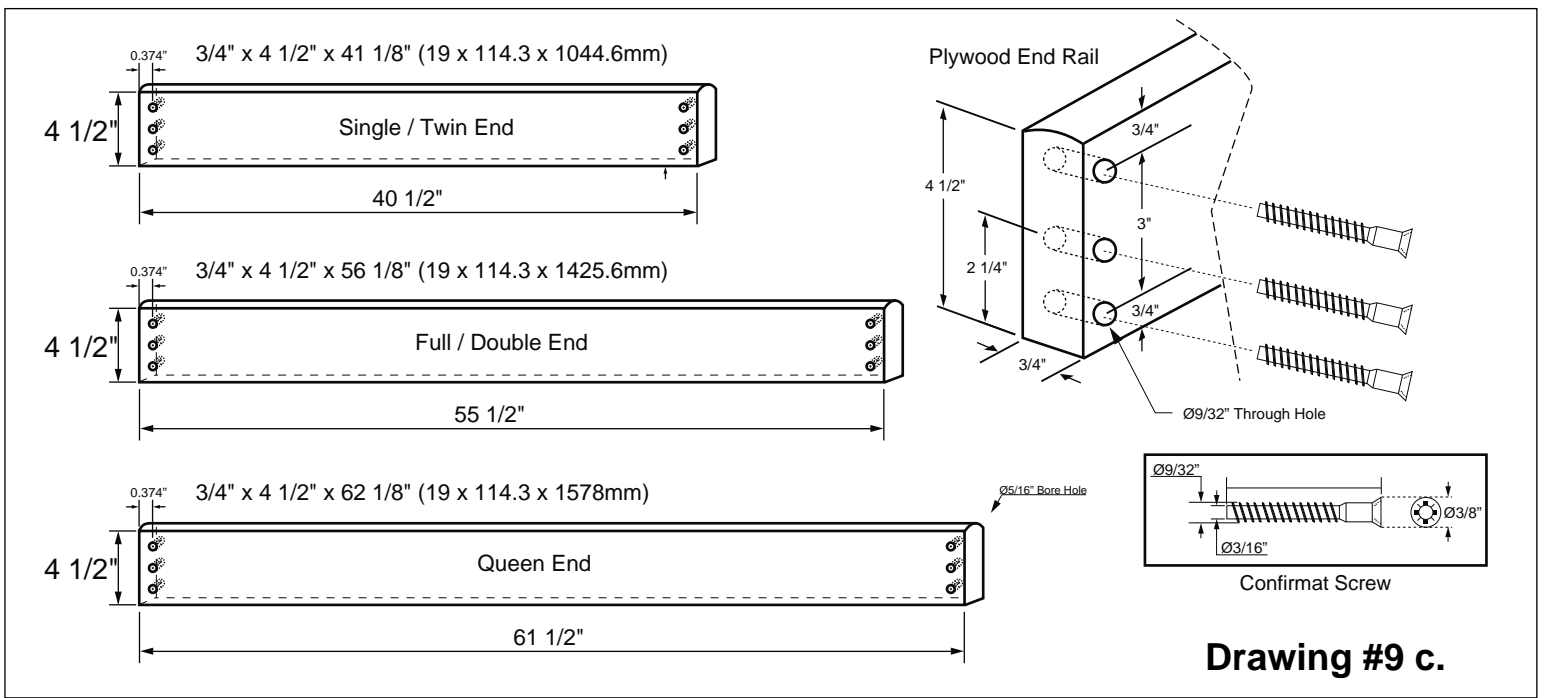


Drawing #9 a.



Drawing #9 b.





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

6. 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.
7. 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” 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” spade bit, drill away enough of the Cleat so the nuts and washers for the mounting bolts will have adequate clearance.

8. Tape the tops and ends of the Side and End Rails for a more finished appearance and to prevent possible snagging.
9. 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.
10. Press fit the Confirmat screw caps on all 12 Confirmat screws at the corners of the Rails.
11. Attach the Universal Panel Saver Guards at the Bed Panel Head Corners shown in Drawing #9.

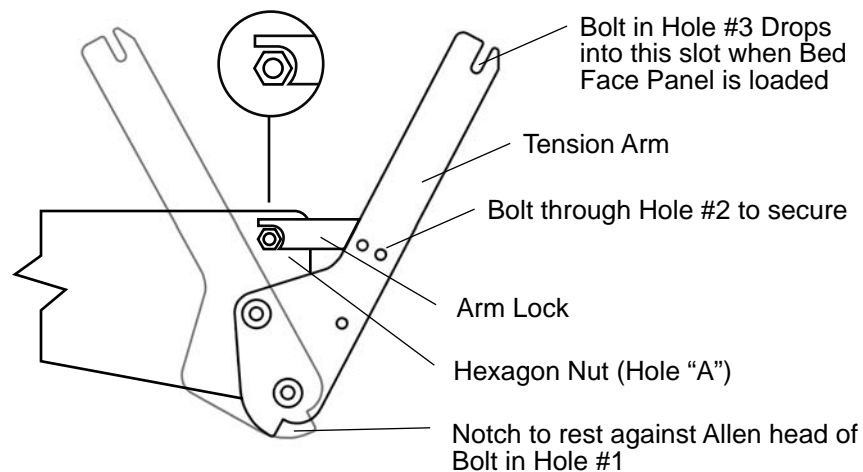
STEP 7: Install the Bed Face Panel in Cabinet

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 #10.
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.



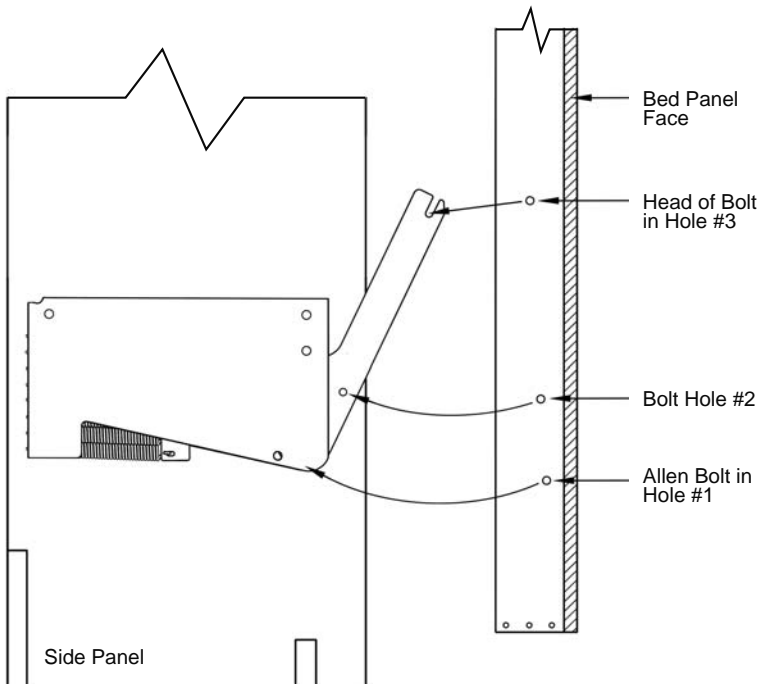
Drawing #10

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.

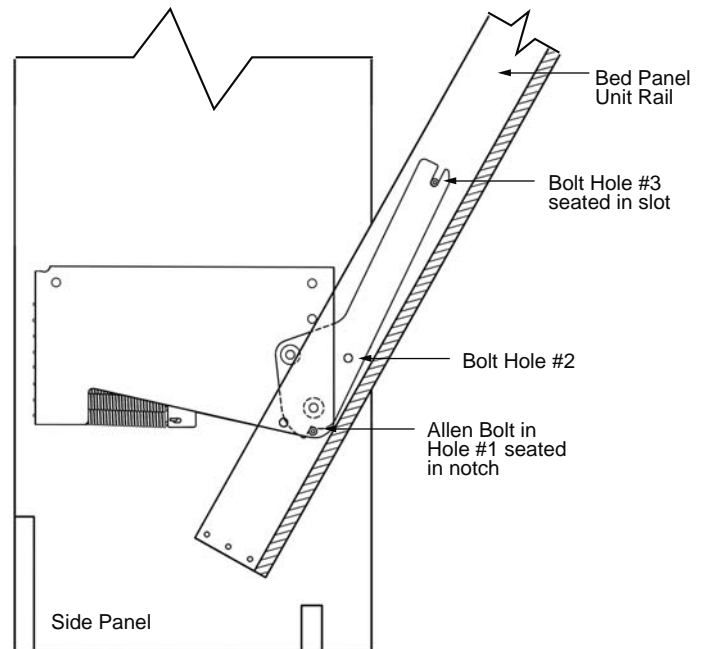
NOTE: Keep the proper size wrenches handy to securely tighten the bolts in holes #2 and #3, which is part of the next step.

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

6. 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" or enough for the 5/16" 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.
7. 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" bolts in holes #3 securely.
8. Install the 5/16" 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.
9. **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 #11



Drawing #12

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

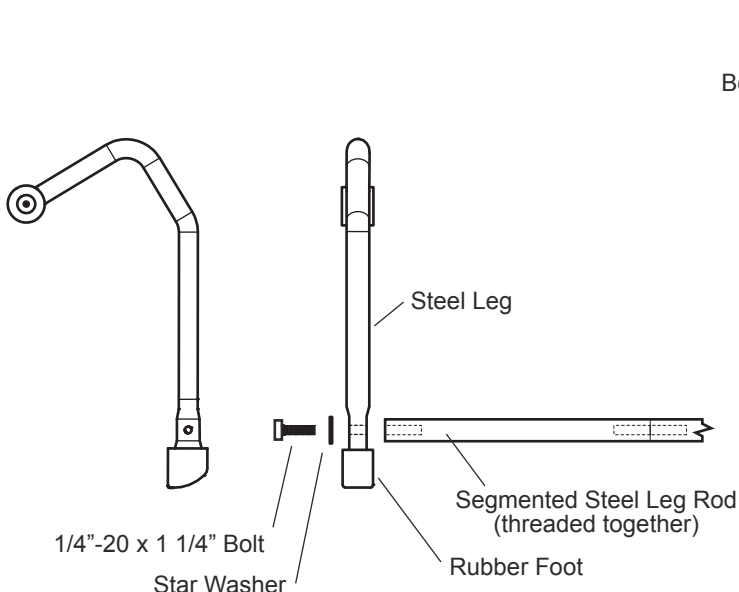
1. Position and secure handles for ease of operation. Measure down approximately 36" from the panel top to the top of the handles.
2. Install legs with the 1 1/2" x 5/16" washer on the inside of the Rails and the Nylon washer on the outside. Tighten nut to have a small amount of friction when leg assembly is rotated from the up to down position.
3. Pre-drill and screw leg stops in position shown on plan #14. 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. 18 for direction.
5. Install mattress and secure with previously installed Velcro straps. Cut the excess Velcro to leave about 12" 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

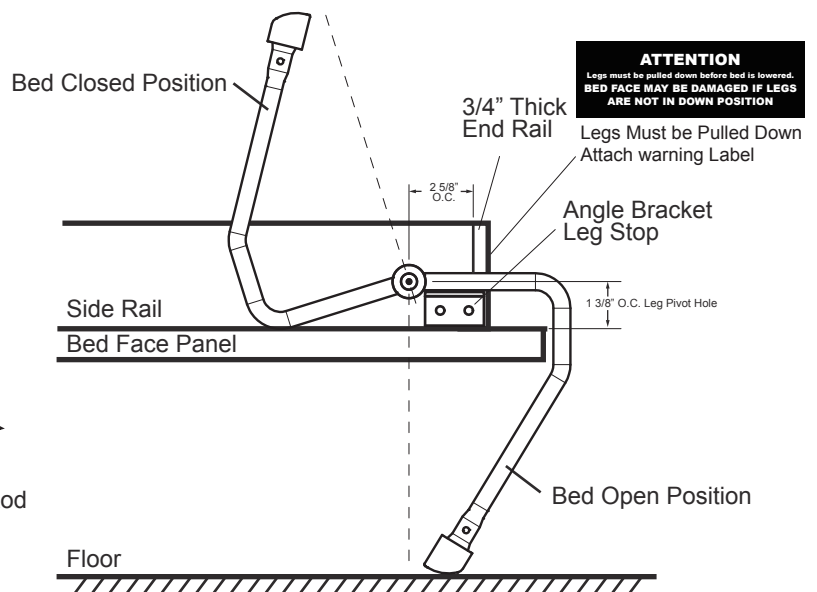
Level or square problems of Bed Face fit to Cabinet. Nudge base of Cabinet at the floor level - or do shims under the Side Panels.

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.



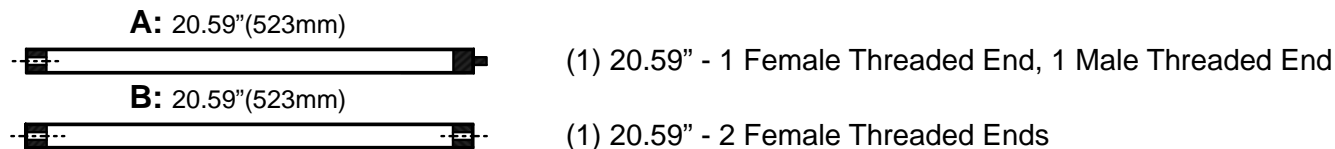
Drawing #13



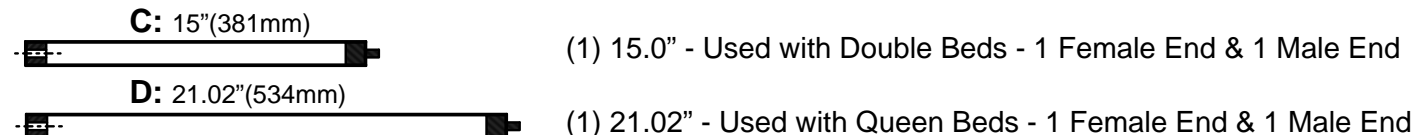
Drawing #14

STEP 8: Segmented Leg Rod Pieces for Assembly

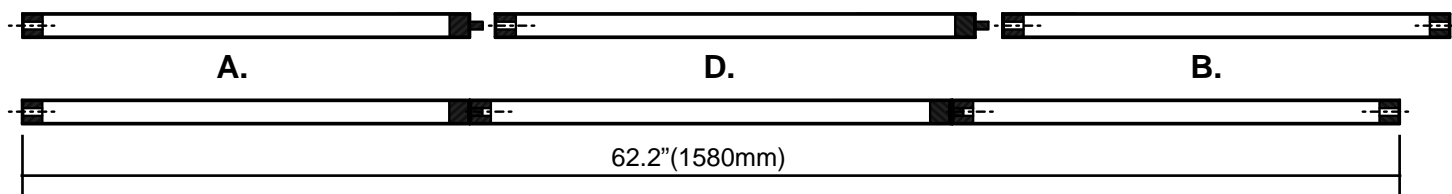
Universal Leg Rod Pieces - Each Piece Used with All Bed Sizes



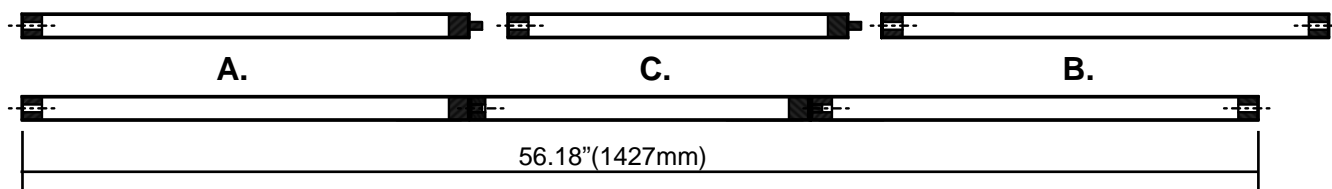
Bed Specific Leg Rod Pieces - Provided with All Bed Sizes



Queen Assembled



Full / Double Assembled



Single / Twin Assembled

