

## MURPHY DOOR DIY BOOKSHELF & HARDWARE INSTALLATION MANUAL

The Murphy Door Bi-Folding Bookshelf was designed to install IN FRONT of existing door, replacing the door or doors while concealing the door way. In MOST cases no retrofitting of existing door jambs, base moldings or casing is required, but due to the variable thicknesses of molding as well as the inconsistency of plumb walls in most of our homes casings and molding may need to be removed for proper door function.

Successful installation requires reading this entire booklet before assembling The Murphy Door or its hardware. This will ensure quality and longevity of intended function.

Hardware kits are shipped in one large package, inside the box you will find (1) "U" channel, (1) Lower track with a half round, (1) piano hinge and a small box containing the rest of the hardware components. There is a large void section which serves only as structural support for the box in shipping. Every effort has been made to ensure that each piece is protected and comes to you undamaged.

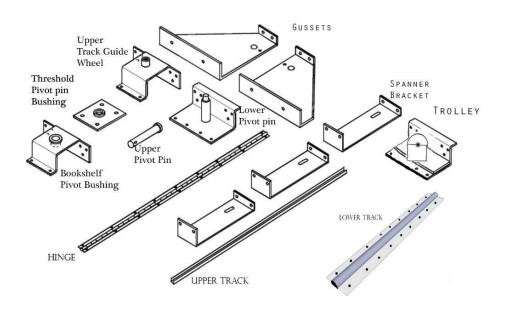
If you have damaged components please contact us DIRECTLY IMMEDIATELY! 1-(888) 458-5911 please have place of purchase and detailed list of ALL damaged components.

## **PREPARATION**

#### INVENTORY ALL HARDWARE COMPONENTS



Actual Hardware Image



NOTE: All tracks are shipped at a 65" length you will need to cut your rails up to 8" short of your desired width. IE: 49" Door can be cut down to 41" a 61" Door can be cut down to 54" and the 73" Door will use the 65" rail. This same procedure will be used for the upper channel as well.

## BUILDING YOUR BOOK CASE

#### DETERMINING THE SIZE OF BOOKSHELF

When determining the size of the bookshelf find the doorway or opening you would like to cover; there are a couple of conditions to keep in mind.

- 1. If possible build the door 1' wider than your opening.
- 2. A minimum of 2." clearance on either side of the door is required to allow for the door to pivot.
- 3. Base and case must be ." thick or less. Thicker base and case will require modification for installation measurements provided in this manual to allow proper function of door.
- 4. We will not guarantee operation of units not installed exactly to stated dimensions provided in this manual.

#### Standard sizes:

We have included a cut list for our standard universal sizing of 4', 5' and 6' doors with the standard height of 83" on the bookcase with out the valance. You may build your door to any dimension within the 4'-6' window at any height and any depth within hardware parameters. Modifications will likely require you to change the spacing allowed for clearance or the location of certain components of the hardware. We do not recommend building doors less than our minimum of 48". Due to the increase of angle on narrower doors the hardware does not work as intended.

IN ALL CASES, it is recommended that you create a template and mock up the dimensions of opening and bookcase to verify that you have the necessary clearance for your door to operate properly. Murphy Door cannot guarantee smooth operation on any units built outside of our proven dimensions as well as any changes or variations to the hardware placement on your doors.



Get Creative!



Get Custom!



Get Contemporary!



Get Country!

#### **ALPHABETIZED COMPONENT LIST**

Following is a defined cut list needed to build your Murphy Door.

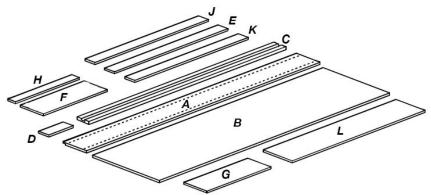
Here is a Breakdown of all the components you should have cut from the lists provided earlier.

- A. Four (4) vertical side veneered or laminated on two sides
- B. Two (2) Back Panels Veneered or laminated on one side
- C. One (1) threshold rack pre routed.
- D. Two (2) valance sides
- E. One (1) valance front piece
- F. Six (6) permanent shelves
- G. Eight (8) Adjustable shelves
- H. Six (6) shelf Aprons/ Toe Kicks
- I. Hardware Kit Not Shown
- J. \*\*One (1) Valance filler\*\*
- K. One (1) Valance Back
- L. One (1) Valance Bottom ." 3/8" (thickness of track) up from bottom of valance sides hiding track

NOTE: If you chose to incorporate finish facing and or crown molding on hardwood bookshelves it is up to you to determine size and application of costume trim. 5

## WOOD PARTS NEEDED FOR ONE SECTION ONLY (ALL DOORS NEED TWO SECTIONS)

(FOR EXACT SIZES SEE CUT SHEET)



<sup>\*\*</sup> Not required but could be used for depth adjustments.

## 49" MURPHY DOOR CUT LIST

49" Doors best for 48"openings & less.

Wood requirements for 49" BI -Fold Door:

- 1. Two sheets of plywood 3/4" x 48" x 96"
- 2. One sheet of plywood 1/4" x 48" x 96"
- 3. One hardwood board 3/4" x 3" x 49"
- 4. One hardwood board 1" x 3 1/2" x 49"

Following is a complete cut-list for complete 49" Bi-Fold Door.

Always use "measure twice cut once" philosophy to minimize fabrication errors.

Component	Quantity	Thickness	Width	Length	Description	Banding/Finishing
A	4	3/4"	8-1/4"	83"	Side verticals	Banded front edge and back edge with 1/4"w x 1/4" deep rabbet
В	2	1/4"	23-1/2"	83"	Backs	Finish both sides
С	1	1"	3-1/2"	49"	Threshold track Hardwood	Hardwood Dado 3/16" deep x 45" by width of lower track, Stain to match
D	2	3/4"	2-3/4"	9-3/8"	Valance Sides	Banded bottom edge
E	1	3/4"	2-3/4"	49"	Valance Face	Banded All 4 Sides
F	6	3/4"	8"	23"	Fixed Shelves	Banded front edge
G	8	3/4"	7-15/16"	22-15/16"	Adjustable Shelves	Banded front edge
Н	6	3/4"	1-5/8"	23"	Shelf Aprons	Banded 1 edge
J	**1	Variable"	2-3/4"	47-1/2"	Valance Filler	Could be used to move the bookshelf out away from wall If existing jam and casing is too wide.
K	1	3/4"	2-1/2"	47-1/2"	Valance Back	Banded bottom edge
L	1	3/4"	7-7/8"	47-1/2"	Valance Bottom	Finish 1 side, If you would like to dado the base in. (recommended) accommodate length/width

NOTE: Installation of valance filler "J" will require center line of bottom pivot and track to be adjusted to exact dimension of center line of upper pivot and track.

<sup>\*\*</sup>Install on back of valance if your base and case is thicker than  $\frac{1}{2}$ ". We will not guarantee operation of units not installed exactly to stated dimensions provided in this manual.

### 61" MURPHY DOOR CUT LIST

Best for use on 48"-60" Openings

Wood requirements for 61" BI -Fold Door:

- 1. Wood requirements for 61" BI-Fold Door:
- 2. Two sheets of plywood 3/4" x 48" x 96"
- 3. Two sheets of plywood 1/4" x 48" x 96"
- 4. One hardwood board 3/4" x 3" x 61"
- 5. One hardwood board 1" x 3-1/2" x 61"

Following is a complete cut-list for complete 61" BI-Fold Door.

Always use "measure twice cut once" philosophy to minimize fabrication errors.

Component	Quantity	Thickness	Width	Length	Description	Banding/Finishing
A	4	3/4"	8-1/4"	83"	Side verticals	Banded front edge and back edge with 1/4"w x 1/4" deep rabbet
В	2	1/4"	29-1/2"	83"	Backs	Finish both sides
С	1	1"	3-1/2"	61"	Threshold track Hardwood	Hardwood dado 3/16" deep x 56" by width of lower track, Stain to match
D	2	3/4"	2-3/4"	9-3/8"	Valance Sides	Banded bottom edge
E	1	3/4"	2-3/4"	61"	Valance Face	Banded All 4 Sides
F	6	3/4"	8"	29"	Fixed Shelves	Banded front edge
G	8	3/4"	7-15/16"	28-15/16"	Adjustable Shelves	Banded front edge
Н	6	3/4"	1-5/8"	29"	Shelf Aprons	Banded 1 edge
J	**1	Variable"	2-3/4"	59-1/2"	Valance Filler	Could be used to move the bookshelf out away from wall If existing iam and casing is too wide.
K	1	3/4"	2-1/2"	59-1/2"	Valance Back	Banded bottom edge
L	1	3/4"	7-7/8"	59-1/2"	Valance Bottom	Finish 1 side, If you would like to dado the base in, (recommended) accommodate length/width

NOTE: Installation of valance filler "J" will require center line of bottom pivot and track to be adjusted to exact dimension of center line of upper pivot and track.

<sup>\*\*</sup>Install on back of valance if your base and case is thicker than ½". We will not guarantee operation of units not installed exactly to stated dimensions provided in this manual.

### 73" MURPHY DOOR CUT LIST

73" Doors best for 60"-72" Openings

Wood requirements for 73" BI -Fold Door:

- 1. Two sheets of plywood 3/4" x 48" x 96"
- 2. One sheet of plywood 1/4" x 48" x 96"
- 3. One hardwood board 3/4" x 3" x 73"
- 4. One hardwood board 1" x 3-1/2" x 73"

Following is a complete cut-list for complete 73" BI-Fold Door.

Always use "measure twice cut once" philosophy to minimize fabrication errors.

Component	Quantity	Thickness	Width	Length	Description	Banding/Finishing
A	4	3/4"	8-1/4"	83"	Side verticals	Banded front edge and back edge with 1/4" w x 1/4" deep rabbet
В	2	1/4"	35-1/2"	83"	Backs	Finish both sides
С	1	1"	3-1/2"	73"	Threshold track Hardwood	Hardwood dado 3/16" deep x 68" by width of lower track, Stain to match
D	2	3/4"	2-3/4"	9-3/8"	Valance Sides	Banded bottom edge
Е	1	3/4"	2-3/4"	73"	Valance Face	Banded All 4 Sides
F	6	3/4"	8"	35"	Fixed Shelves	Banded front edge
G	8	3/4"	7-15/16"	34-15/16"	Adjustable Shelves	Banded front edge
Н	6	3/4"	1-5/8"	35"	Shelf Aprons	Banded 1 edge
J	**1	Variable"	2-3/4"	71-1/2"	Valance Filler	Could be used to move the bookshelf out away from wall If existing jam and casing is too wide.
K	1	3/4"	2-1/2"	71-1/2"	Valance Back	Banded bottom edge
L	1	3/4"	7-7/8"	71-1/2"	Valance Bottom	Finish 1 side, If you would like to dado the base in, (recommended) accommodate length/width

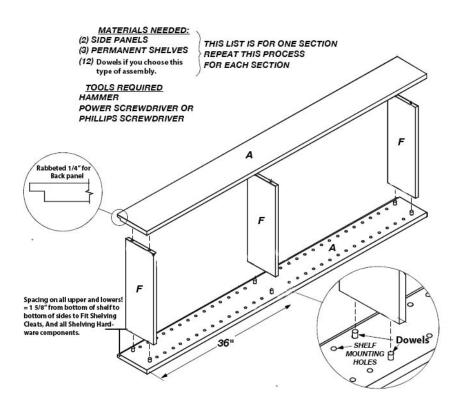
NOTE: Installation of valance filler "J" will require center line of bottom pivot and track to be adjusted to exact dimension of center line of upper pivot and track.

<sup>\*\*</sup>Install on back of valance if your base and case is thicker than  $\frac{1}{2}$ ". We will not guarantee operation of units not installed exactly to stated dimensions provided in this manual.

### **ASSEMBLY OF DOOR UNITS**

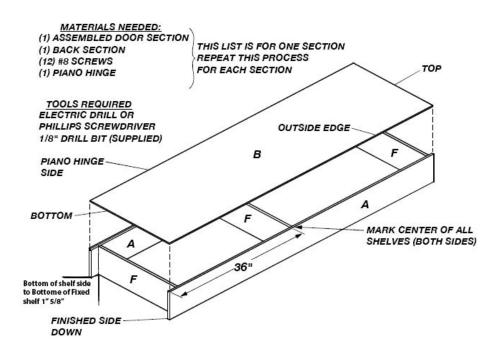
#### **DISCLAIMER!**

We are not the builder of your door and cannot verify all cuts and methods; subsequently we will not accept responsibility for dimensions that are incorrect due to your skills and abilities. We have provided the cut list, the form of construction and method of assembly is entirely up to you. This is only one of many ways to cut and assemble a bookshelf, please determine the method that suits your abilities best and proceed accordingly.



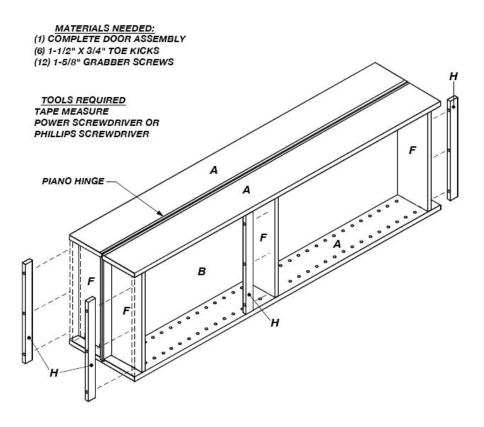
- 1.1 Using all components that you have already cut.
- 1.2 Identify the component on exploded view.
- 1.3 Using (2) item "A" components (shelf sides with pin holes) and 3 item" F" components (fixed shelves).
- 1.4 Fasten component "F" to component "A", this method shows using dowels, use method you are most familiar with.
- 1.5 Verify that the spacing from the outside surface of the fixed shelves to the bottom and top edge is 1 5/8" This will be the same size as your book shelf aprons item "H".

#### ATTACHING BACK TO DOOR



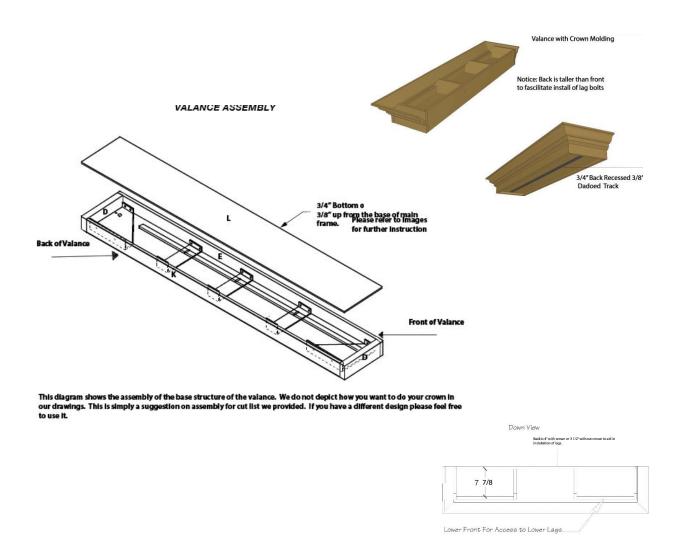
- 2.1 Locate component "B", there should be two, one for each bookcase component.
- 2.2 The preferred method is to rabbet the side rails so the ½" material sits flush with the component "A".
- 2.3 This piece should be the same length as each shelf side or (component "A").
- 2.4 Once this piece is placed properly onto the pre assembled box, fasten component "B" to Components "A" & "F" using your preferred fastening method.

## FINAL ASSEMBLY OF BOOKSHELF COMPONENT



- 3.1 Locate components "H" There should be a total of 6 of these pieces, three for each side of bookshelf.
- 3.2 Install each "H" Component where indicated. These items should end flush at the top and bottom of your side rails or components "A" giving the appearance of a full depth shelf but actually providing a 1 5/8" false bottom, or recessed cavity in the top and bottom of the shelf, for the hardware to be housed.
- 3.3 Fasten each one of these components where indicated using your preferred fastening system.

#### **BUILDING YOUR VALANCE**



- 4.1 Gather all parts for Valance as shown above.
- 4.2 Place Part "E" the Face to front, the sides Part "D" will butt into Part "E" as shown, Part "K" will go in between both Part "D" and sides. (As shown above) Fasten outer box of valance. If you have dadoed the sides face and back for the bottom to slide into please build accordingly.
- 4.3 Measure up 3/8" from the bottom of the box and fasten your bottom to the box. We recommend that you glue and screw all components of the valance.
- 4.4 You can consider upper wooden gussets for additional support as images display above. Example shown above for units with crown molding, whether it be flat or traditional: these pieces are custom and are not included in cut list.

# MURPHY DOOR HARDWARE/DOOR INSTALLATION

Tools required to complete install of hardware					
	Rubber hammer				
	5/8"-3/4" Forstner bit or spade bit				
	Power screwdriver or Philips screwdriver				
	Measuring tape				
	Pencil				
	Level (minimum 4' level preferred)				
	Screw Gun (drill)				
	Hack Saw				
	Plumb BOB (not required but nice to line up your pivot points.)				

ACCIDENTS AND SERIOUS INJURY COULD RESULT BY FAILURE TO FOLLOW THIS ASSEMBLY MANUAL.

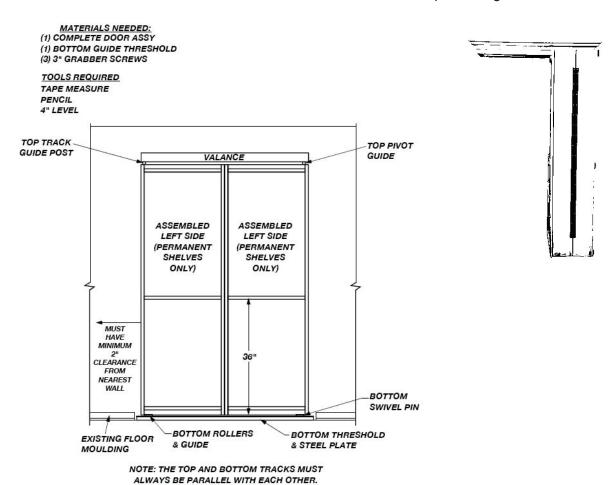
Carefully follow the steps in order. Every effort has been made in the manual to guide you systematically through the installation resulting in your ability to completely assemble your own Murphy Door System. Pay special attention to all critical measurements and alignments. We cannot guarantee the product if you fail to follow these procedures.

## **PREPARATION**

Decide Fixed and Moving side. Once you have your book case fully assembled now we need to decide which side you want the door to move to. We will use the term left hand and right hand swing. For this job we will say a left hand swing means the door swings from the left so you will open the right side of the door and the bookcase will fold to the left side of the door. A right hand swing will be just the opposite. You will open the left side of the door and the bookcase will stack on the right. Here is an example of a right hand unit.

Right Hand Doors Shown Below.

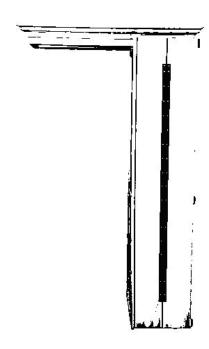
Opened Right Hand Door.



Hardware Location Example above on a Right Hand Door.

Illustration (above right) depicts right hand door in the fully opened position.

#### INSTALLING PIANO HINGE:



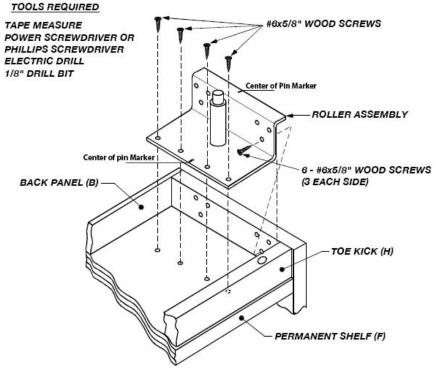
- 1.1 Locate piano hinge in hardware set. This hinge ships at 68" +/-.
- 1.2 Lay both fully assembled bookcase units on the ground. Preferably on a piece of carpet to protect your finish.
- 1.3 Our preferred method is to fasten the hinge to the back of the doors. This minimizes the spacing between the two bookcases when they are closed. But this is completely optional to the builder the other way is shown above.
- 1.4 Once your desired placement has been chosen sides or back, center the knuckle of the hinge with the gap between the two doors, (BE SURE YOU HAVE TESTED AND YOU KNOW WHICH WAY IT OPENS) it is recommended to have two people to do this so the hinge does not move.
- 1.5 Place two screws on one end of the hinge, then move up to where your partner is helping and place 2 more screws. It is essential that the hinge stays straight, this is a critical component of a smooth operating finished product.

#### INSTALLING LOWER PIVOT PIN

MATERIALS NEEDED: (1) COMPLETE DOOR ASSEMBLY (1) BOTTOM PIVOT BRACKET (10) #6x5/8" WOOD SCREWS

\*THESE INSTRUCTIONS ARE FOR A TYPICAL RIGHT HAND SWING DOOR ALL PARTS MOVE TO OPPOSITE SIDE FOR A LEFT HAND SWING DOOR

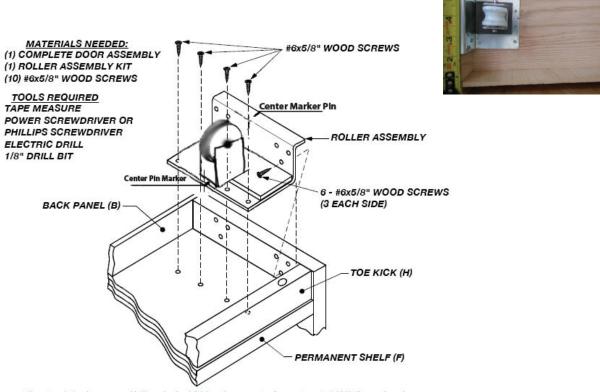




ALL HARDWARE CENTER MARKERS SHOULD BE PLACED AT 4 1/8" from the Backside of the back panel (or furthest point on back of shelf

- 2.1 After deciding your swing, locate the Pivot pin portion of the hardware, this piece should look like the piece shown above.
- 2.2 Locate the bottom corner of your cabinet that you would like to be the pivoting side of the door (Fixed Side.)
- 2.3 Locate the center pin marker on the pivot pin hardware. This is a cut out located the center of pin. As shown on drawing above.
- 2.4 Measure 4-1/8" from the back of the book shelf, this will be the outside edge of the book-shelf not on the inside edge. Be sure it is from the furthest point.
- 2.5 Fasten hardware so the marker is centered on the 4 1/8" mark from back of bookshelf.

#### INSTALLING LOWER TROLLEY



Center Marker on all Bookshelf Hardware to be set a 4 1/8" from back of bookshelf.

- 3.1 Locate lower roller assembly, as shown above.
- 3.2 Place Roller Assembly on bottom of bookshelf, (on the moving side of the bookshelf).
- 3.3 Measure 4-1/8" from the back of the bookshelf, place a mark where the center mark on the hardware should go.
- 3.4 Take hardware set and mark the location of the bolt located on the bottom of the roller assembly, on the bookshelf. (Tap with hammer lightly to leave mark. While holding in the correct spot.)
- 3.5 Take the appropriate size forstner bit and drill out a spot for the bolt head to rest into the bottom of bookshelf, take caution not to over drill and go through the bottom shelf.
- 3.6 Place hardware center marker on 4 1/8" mark. Set all screws as indicated above.

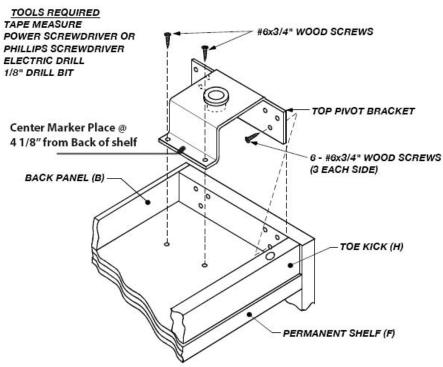
### INSTALLING UPPER BRASS BUSHING

#### MATERIALS NEEDED:

- (1) COMPLETE DOOR ASSEMBLY
- (1) TOP PIVOT BRACKET
- (8) #6x3/4" WOOD SCREWS

\*THESE INSTRUCTIONS ARE FOR A TYPICAL RIGHT HAND SWING DOOR ALL PARTS MOVE TO OPPOSITE SIDE FOR A LEFT HAND SWING DOOR





Verify That center Marker on Hardware is 4 1/8" from back of book shelf.

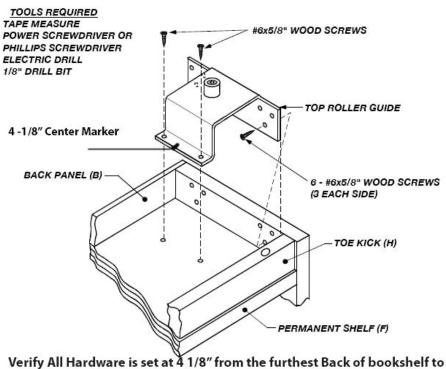
- Step 4.1 Locate Upper brass bushing hardware assembly.
- Step 4.2 Locate upper portion of the fixed or pivoting side of the cabinet.
- Step 4.3 Measure from the back of the bookshelf into the bookcase 4-1/8"
- Step 4.4 Place Center marker on the 4-1/8".
- Step 4.5 Set all screws as shown above.

#### INSTALLING UPPER TRACK GUIDE WHEEL

MATERIALS NEEDED: (1) COMPLETE DOOR ASSEMBLY

(1) TOP PIVOT BRACKET (8) #6x5/8" WOOD SCREWS \*THESE INSTRUCTIONS ARE FOR A TYPICAL RIGHT HAND SWING DOOR ALL PARTS MOVE TO OPPOSITE SIDE FOR A LEFT HAND SWING DOOR





Step 5.1 Locate Upper track wheel hardware assembly.

Step 5.2 Locate upper portion of the fixed or pivoting side of the cabinet.

Step 5.3 Measure from the back of the bookshelf into the bookcase 4-1/8".

Step 5.4 Place Center marker on the 4-1/8".

Step 5.5 Set all screws as shown above.

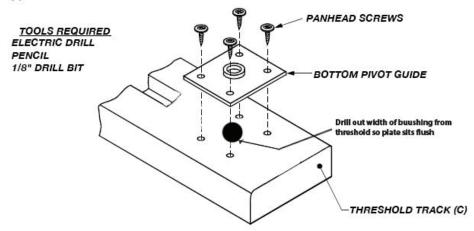
center marker on hardware

#### INSTALLING THRESHOLD PIVOT PIN BUSHING



#### MATERIALS NEEDED: (1) THRESHOLD TRACK (1) BOTTOM PIVOT GUIDE

(4) PANHEAD SCREWS



(FOR EXACT WIDTH, LENGTH AND DEPTH, SEE CUT SHEET)

- 6.1 Locate Wood component "C" and 2"x2" brass bushing.
- 6.2 Mark center of threshold and measure width of center track.
- 6.3 Dado 3/16" Deep x width of track x length of threshold 5".
- 6.4 Measure in 1" from non-dado side of threshold, mark edge of 2"x2" mark, measure center of track and center of 2x2 for bushing, use a forstner or spade type bit to clear out space for bushing.
- 6.5 Fasten 2"x2" to threshold, verify that the center of track is matches center of bushing.

#### VALANCE HARDWARE INSTALLATION







Figure 7.3.2

Figure 7.3.1



Figure 7.4



Figure 7.5



Figure 7.6

- 7.1 Gather assembled Valance components, gather all necessary valance hardware,
  2 Angle Gussets, 3 spanner brackets, 1 upper U channel track and screw packets.
- 7.2 Install all hardware as shown in image.
- 7.3 Depict which side is the fixed side of your valance. Take a ½" drill and drill hole through the hole in the metal bracket. The center of hole should land center of track at 5 ¼".
- 7.4 Set center of track in dado if this method was used, either way the center of the track should be at 5 1/4" from the very back of the valance. Do not cover clevis pin hole. The track can end up to 8" short of the clevis pin hole.
- 7.5 Set spanner brackets next evenly divided throughout valance. On 4' it is only necessary to us 2 spanner brackets.
- 7.6 Verify that the track is not exposed below the bottom of the valance for maximum concealment.

## INSTALLING YOUR DOOR - PART 1



- 8.1 The installation of your door will require a minimum of 2 people. Gather your lower track/ threshold, locate your pivot side of door.
- 8.2 Set edge of track (non pivot side) flush with the outside edge of door casing for concealment. If your track is already installed on the threshold, remove it. This will allow you to conceal the grabber screws below the track. (Prior to removing the track be sure you mark center of track on threshold for reference)

IMAGE (Enlarged threshold for demonstration only)



8.3 Measure from the DRYWALL 5 ¼" to the center of the track mark, insure that your measuring from the drywall not the casing. THIS IS CRITICAL!! Then measure the opposing side from the drywall to the center of the brass bushing.





- 8.4 Fasten threshold to floor using the grabber screws provided. Be sure that you are fastening directly to a wood or concrete floor, if you are fastening to concrete you will need to use NECESSARY equipment, such as DRILL CONCRETE DRILL BIT AND CONCRETE ANCHORS, these are NOT provided in your kit. If you have carpet it is NECESSARY that you remove the carpet in order for your door to operate as engineered.
- Once your threshold is set and fastened properly at 5 ½" from the drywall to center of track and bushing, use two people to pick up the door. Set the lower pivot pin into the brass bushing. This is a very tight fit, it will take a bit of work to get the pin to slide but it will, raise the door to plumb and level to help facilitate the pin sliding into the bushing.
- 8.6 Set the trolley onto the track.
- 8.7 Using one person holding the door up, move to step 9.

### **INSTALLING YOUR DOOR - PART 2**



- 9.1 Gather valance and (4) 1/4" spacers from the scraps when you cut the back of your bookshelf, (4) washers and lag bolts, (1) clevis pin and drill to fasten the lag bolts to the wall.
- 9.2 While 1 person holds the door against the wall, Place (1) ¼" spacer in each corner of the bookcase, set the valance on the (4) spacers. Using a stud finder locate and mark each stud on the valance to help locate proper spot to pre drill.
- 9.3 Bring valance back down and pre drill the holes in the valance where you marked the stud layout. Try to stagger the bolt holes and keep them at a perfect 90 degree angle to insure while fastening 90 degree angled holes will not pull the valance up or down. Prestart the 4 lag bolts and washers in place to make it easier.

9.4 Place valance back on top of spacers, center the ½" hole you drilled over the brass bushing in the bookshelf, and drop the clevis pin through the hole.



9.5 Verify the upper and lower track wheels are still in the track, as well as check that the lower pin is still seated in bushing. Fasten all lag bolts into place.





- 9.6 Remove all spacers from the bookshelf.
- 9.7 Using dry lithium grease spray, spray the lower track and wheel bearings, upper track and wheel bearings, and wipe door hinge down.

# CONGRATULATIONS ON YOUR INSTALLATION

For further instruction, watch the installation on our "Installation resources" tab at www.murphydoor.com or search murphy door installation on You Tube.

## TROUBLE SHOOTING

Problem	Check	Repair	Not resolved
Door rubs valance in center	Verify the track was	Add 3/16" in washers to	Check Level on floor &
while opening.	recessed 3/16" into	pivot pin on the bottom of	valance. Adjust valance and
	threshold.	shelf.	threshold if necessary.
Door Binds while opening.	Hinge on back of door	Adjust hinge, verifying that	Verify hinge is not installed
	insure it is perfectly centered	it is perfectly centered.	backwards.
	between both doors.		
			Lubricate hinge.
Door Rubs casing or	Thickness of casing and	Shim the back of valance	Remove or modify base and
baseboard while opening.	baseboard, Check door for	and threshold equally	case.
	plumb, verify 1-1/8"	enough to avoid base/case.	
	between back of door and		
	wall for full length of door		
	on both sides.		

If you have any further questions or concerns please feel free to contact us at 1-888-458-5911