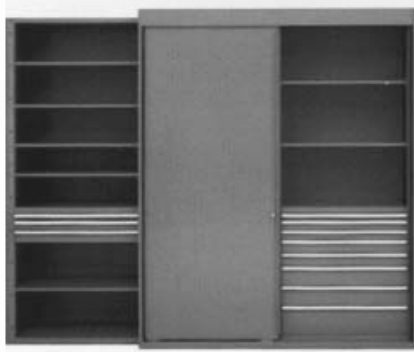


Chapter 2 Storage Wall Doors

Listo provides three types of doors for Storage Walls: Sliding Doors, Tambour Doors, and Hinged Doors. This chapter provides step-by-step instructions for assembling and attaching each type of door.



Sliding Doors



Hinged Doors



Tambour Door

Leveling and Anchoring the Storage Wall

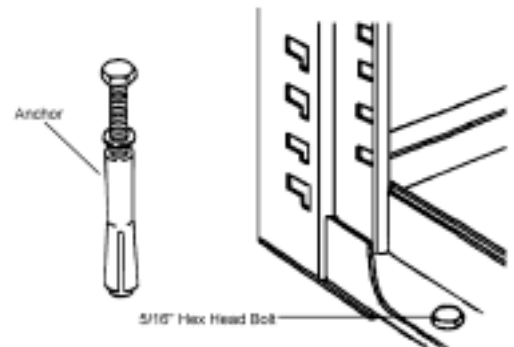
Before you begin assembling and attaching doors, you should anchor the Storage Wall. With the Rear Panels or Sway Braces in place, move the Storage Wall to its permanent location. Note: Anchors are not supplied with the Storage Wall, and may require compliance with certain building codes.

Important

The Storage Wall must be level (vertically and horizontally) before anchoring it to the floor. Listo provides metal shims (galvanized sheetmetal, punched in the shape of an “H”) to help with the leveling of the Storage Wall. Insert the shims as needed to level the Storage Wall. Four pieces are supplied with every Vertical Side Frame.

Step	Action	(Refer to Figure 2-1)
1	With the Storage Wall in its permanent location and level, mark the holes on the floor in every Vertical Side Frame.	
2	Using a 3/8” masonry drill bit, drill 2” deep (50mm) holes into the floor (four for each Vertical Side Frame)	
3	Insert the Anchors through each of the holes in the Vertical Side Frame and into the holes drilled in the floor. Secure each Anchor with a 5/16 x 2” Hex Head bolt.	

Figure 2-1 Anchoring the Storage Wall



Note: If the Storage Wall is located in an area with forklift traffic, you should also provide protective posts at each corner of the Storage Wall to avoid damage by forklifts or other trucks.

Installing Sliding Doors

The following instructions assume that you are working from Left to Right.

Preparation

Step	Action	(Not shown)
1	Locate the Vertical Side Frames at the ends of the Storage Wall. There will be knockout holes located in the middle of the Vertical Side Frames. Using a Hammer and Screwdriver, punch through the knockouts on the end Vertical Side Frames only. There are additional holes offset from the center (at the top and bottom of the Vertical Side Frame. These will not be required for Sliding Doors. Note: In earlier models, Vertical Side Frames may or may not be pre-punched for installation of Sliding Doors. If you don't have any holes on the front of the Vertical Side Frame, you will need to drill the holes.	

Attaching the Left Door Frame

Step	Action	(Not shown)
1	Align the Left Door Frame with the left Vertical Side Frame of the Storage Wall, making sure the closed bracket at the bottom of the Left Door Frame is at the bottom. Secure with 5/16" x 3/4" Hex Head bolts and 5/16" - 18 nuts.	

Attaching the Upper Track

Step	Action	(Refer to Figure 2-2 and Figure 2-3)
1	Assemble the Top Center Support Bracket(s) as shown. It consists of four components to hold the Upper Track in place: Top Main Center Bracket, Top Center Bracket, Center Bracket Clip, and a Reinforcement Bracket, as shown. Use a 1/4" - 20 nut, USS 1/4" Flat Washer, and 1/4"x 1" Hex Head bolt to secure the top, main, and reinforcement brackets together. Follow the assembly sequence shown in Figure 2-3.	
2	From the top of the unit, insert the Top Center Support Bracket(s) into the center Vertical Side Frame. If necessary, use a rubber mallet to tap the assembly into the Vertical Side Frame.	
3	Punch through the knockout hole that lines up with the hole in the bracket. In earlier models, it may be necessary to drill the hole. From <i>inside</i> the Storage Wall unit, drill a 1/4" hole into the indicated area of the Vertical Side Frame and <i>through</i> the Top Center Support Bracket(s).	
4	Insert a 1/4-20 x 3/4" Hex Head bolt through the <i>front</i> of the Vertical Side Frame and Top Center Support assembly and secure with a 1/4"-20" nut. Repeat Steps 1 through 4 for each Center Support Bracket assembly.	
5	Insert the Track Mount Bracket into the channel on the left side of the Upper Track and position the Upper Track into the Top Center Support Bracket(s). Insert two 5/16" - 18 x 82° Flat Head screws up through the upper section of the Left Door Frame and into the Track Mount Bracket (inside the Upper Track). Tightly secure.	
6	Secure the outer section of the Upper Track to the Top Center Support Bracket(s) by inserting a 1/4" x 1" Hex Head bolt and washer up through the inside of the Upper Track and into the Center Support Bracket(s). Secure with a 1/4"-20 nut. Repeat for each Center Support Bracket.	
7	Secure the inner section of the Upper Track to the Top Center Support Bracket(s) by inserting a 1/4"x 1" Hex Head bolt and washer down through the top portion of the Top Center Support Bracket, through the inner section of the Upper Track, and into the Center Support Clip. Secure with 1/4"-20 nut. Repeat for each Top Center Support Bracket.	

Attaching the Lower Track

Note: Bottom Track Splicers (for adders) must be installed *after* you attach the lower track for each section *and* install the doors. Unlike the top track, where you can install the track for the entire length of the storage wall, the bottom track must be attached and the doors inserted for each section individually. Once the bottom track splicers are in place (for adders), the doors for a previous section cannot slide over the splicers.

Step	Action	(Refer to Figure 2-4 and Figure 2-5)
1	Attach the two Unistrut nuts to the bottom of the Left Door Frame using 5/16" - 18 x 3/4" x 82° Flat Head screws. Insert the screws <i>down</i> through the bracket of the Door Frame and into the Unistrut nuts. Loosely secure.	
2	Slide the Lower Track into the Door Frame by inserting the Lower Track so that the Unistrut nuts fit into the front and back channels of the track.	
3	Position the Lower Track so that it is parallel with the Storage Wall. Tighten the 5/16-18 x 3/4" x 82° Flat Head screws using a 3/16" Allen wrench.	
4	Place the Center Support Bracket for the Lower Track underneath the Lower Track at the junction of each Vertical Side Frame within the Storage Wall. Scribe the hole for the Center Support Bracket and use the knockout hole that lines up with the bracket. Secure with a 1/4"-20x 3/4" Socket cap screw and 1/4"-20 nut. Repeat for each Center Support Bracket. In older models, it may be required to drill a 1/4" hole into the Vertical Side Frame to attach the Center Support Bracket.	

Figure 2-2 Upper Track to Left Door Frame

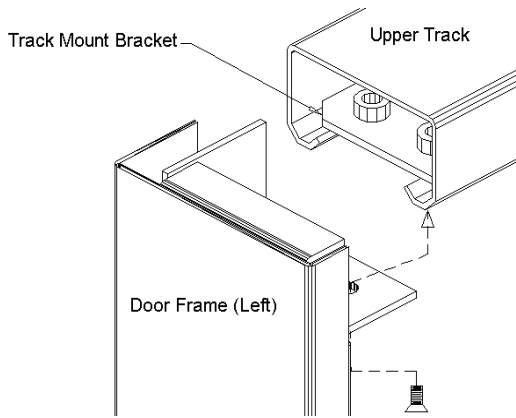


Figure 2-3 Top Center Support Bracket Assembly

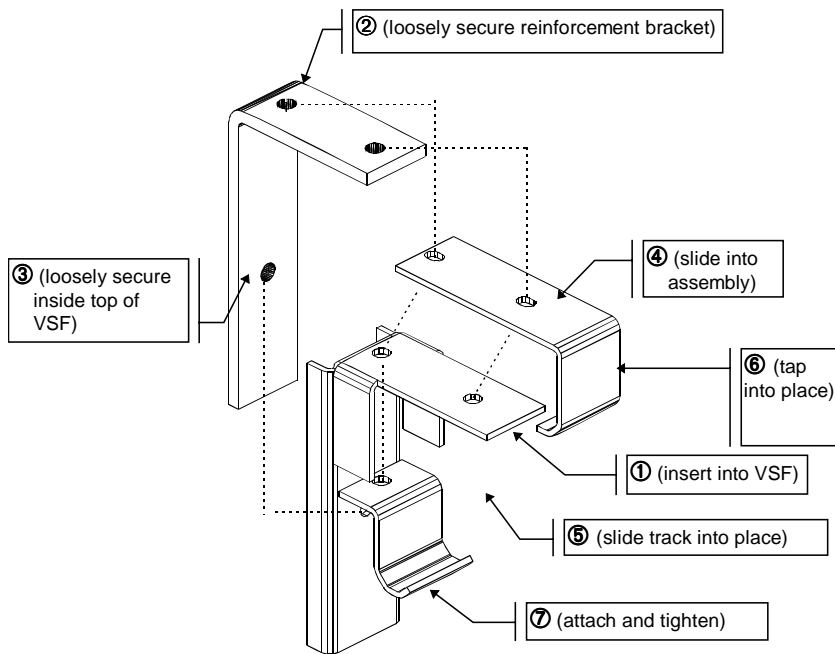


Figure 2-4 Bottom Center Support Bracket to Lower Track and VSF

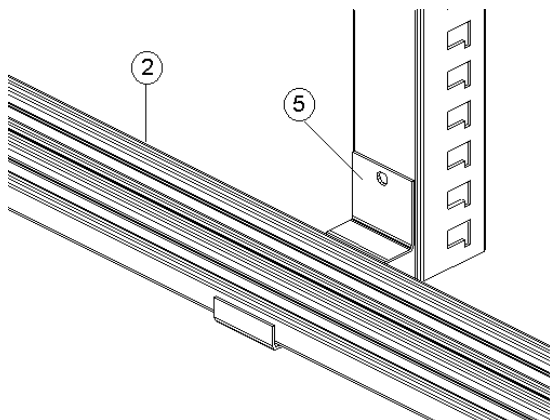
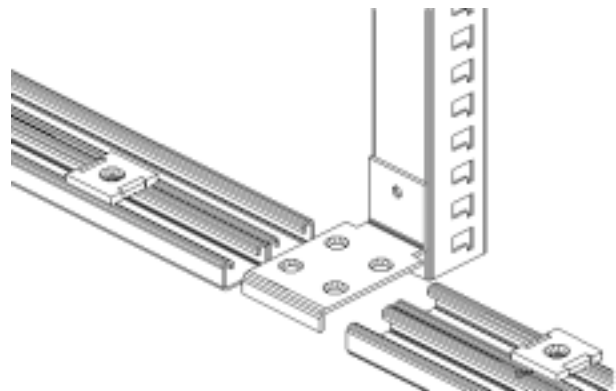


Figure 2-5 Bottom Track Splicer



Assembling the Sliding Doors

Assembling the Door Panels		
Step	Action	(Refer to Figure 2-8/A or Figure 2-9/A)
1	Lay the Door Panels <i>flat-side down</i> on a suitable work surface. Refer to chart in Figure 2-8A or 2-9A for quantities and identification purposes.	
2	Secure the Door Panels for each door together using four sets of ¼ x ¾" Socket Cap Screws and nuts.	
3	Insert two Plastic Guides into the bottom bracket of each door. Secure using ¼ x 1½" Socket Cap Screws and ¼" - 20 nuts.	
4	If assembling a triple-door set, identify the center door panel that includes the welded flange. This is the right panel of the center door. The welded flange prevents the right door from sliding behind it once installed.	
Attaching the Plastic Handle		
Step	Action	(Not Shown)
1	The Plastic Handle consists of two pieces with its own packaged hardware. Insert the main handle piece into the rectangular slot on the front of the door panel.	
2	Secure the main handle piece using the square rear cover from behind the Door.	
Installing the Lock		
Step	Action	(Refer to Figure 2-6)
1	Install the Lock to the Left Side Panel of the Right Door using four #4 x 3/8" Pan Head screws.	
2	Install the Lock Bracket to the Right Side Panel of the Left Door using six #8 x 3/8" Pan Head screws.	
3	Using #8 x 3/8" Phillips Pan Head screws, attach the horizontal door stiffeners starting from the bottom of each door. Attach one at the bottom, center, and halfway between the center and top. <i>Note: To help identify the stiffeners: Top and Bottom Stiffeners are thinner in width than the center stiffeners. Do not attach the top stiffener until after the trolleys are installed.</i>	
Attaching the Trolleys		
Step	Action	(Refer to Figure 2-7,below and Figure 2-7A,page 6)
1	Refer to Figure 2-7A. Thread a ¼-20 hex nut on a ¼-20 x 3-½" hex head bolt. Thread it almost to the head of the bolt. Insert this bolt through the top bracket of the doors. There will be two brackets for each door.	
2	Half-way into the door bracket, there will be a hole cut into the metal bracket. Thread a ¼-20 hex nut onto the bolt you are inserting. Finish inserting the bolt through the lower portion of the bracket and thread a ¼-20 square nut onto the bolt. Adjust the bolt so that the head of the bolt is close to the top of the door panel.	
3	Attach two Trolleys to each door by inserting the open slot of each Trolley into the 3 ½" Hex Head bolts at the top of the doors. The door with the lock assembly glides on the outer channel of the upper and lower tracks; position the trolleys so that the wheels face the front of the door. The door without the lock glides on the inner channel of the upper and lower tracks; position the trolleys so that the wheels face the back of the door.	
4	Attach the top stiffener to each door using #8 x 3/8" Phillips Pan Head screws.	

Figure 2-6 Sliding Door Lock

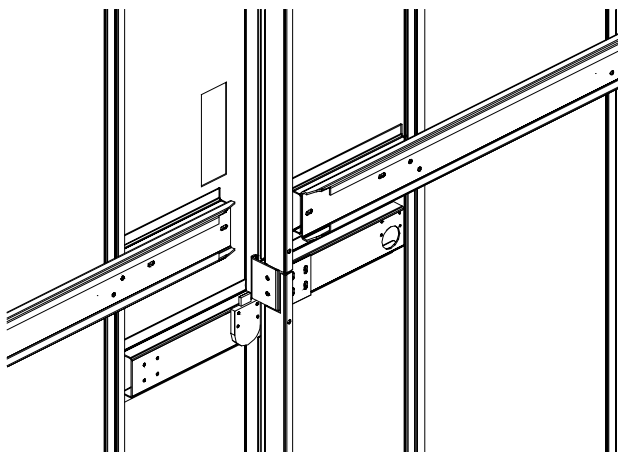


Figure 2-7 Trolley

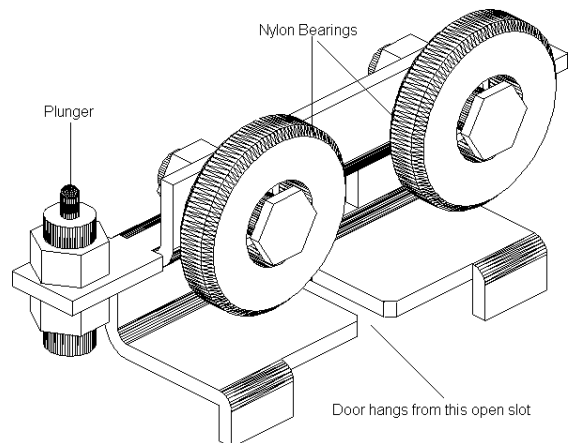


Figure 2-8 Triple-Sliding Door Set (36U Door Shown, Rear View)

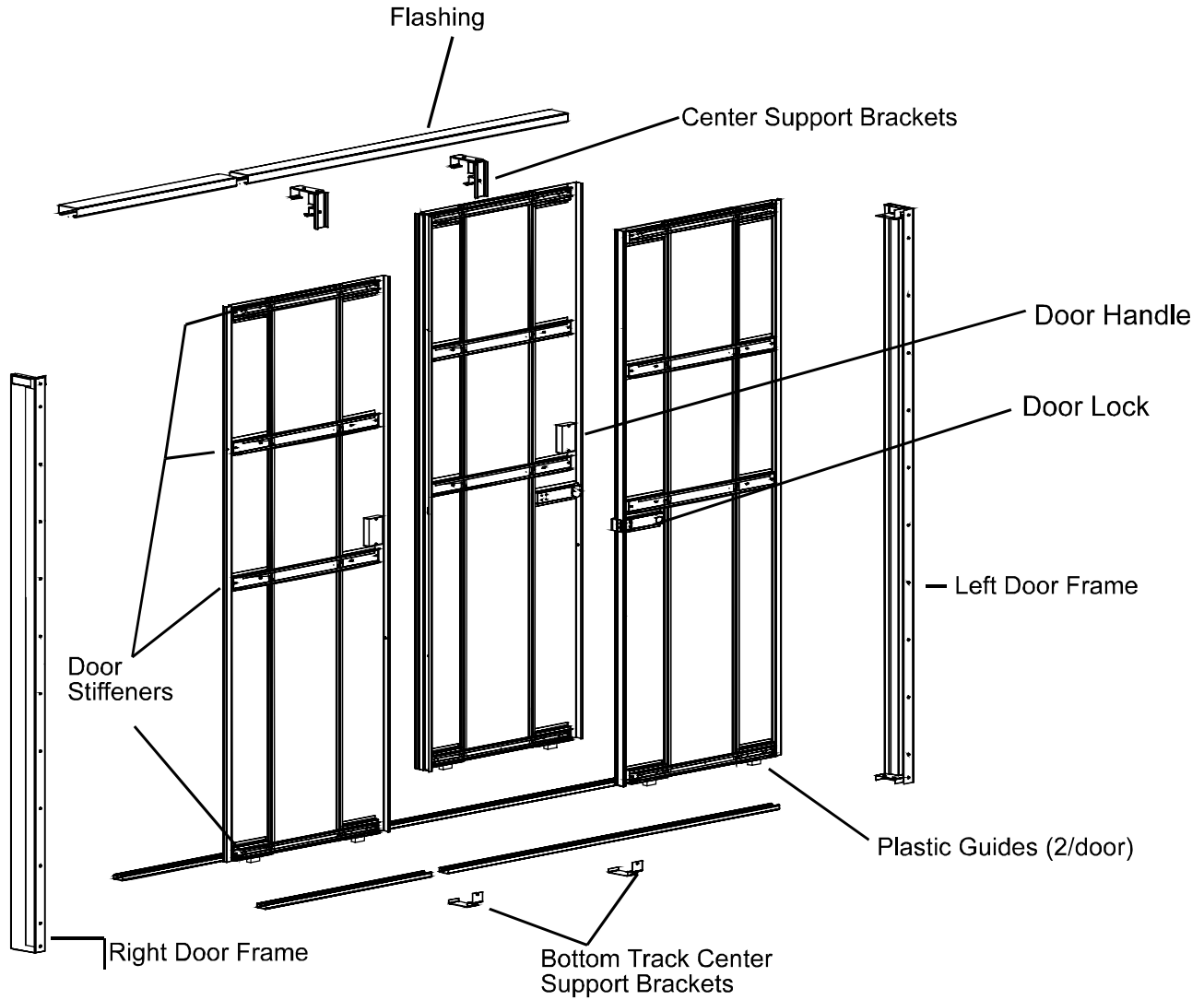


Figure 2-8A – Top view of Triple Sliding Door Set

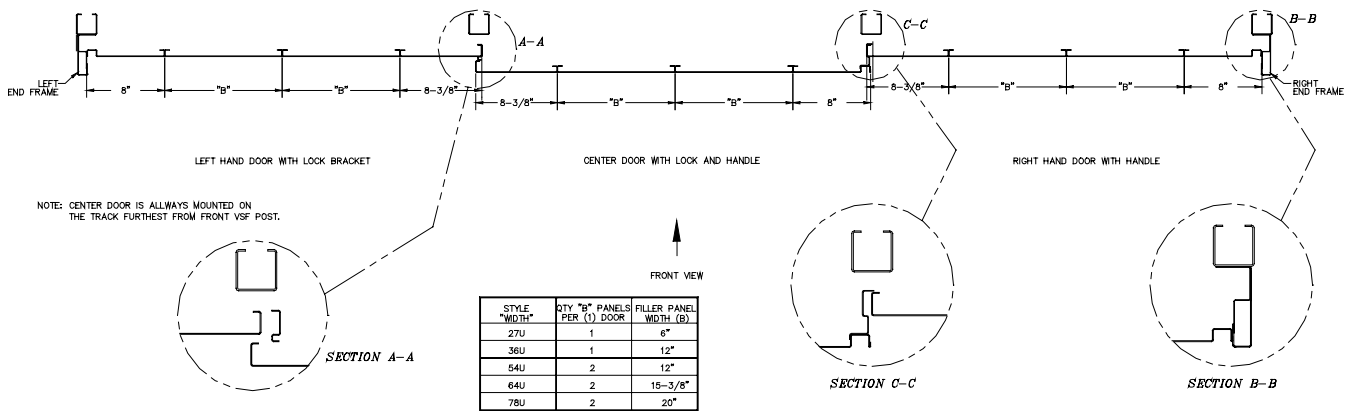


Figure 2-9 Double-Sliding Door Set (36U Door Shown, Rear View)

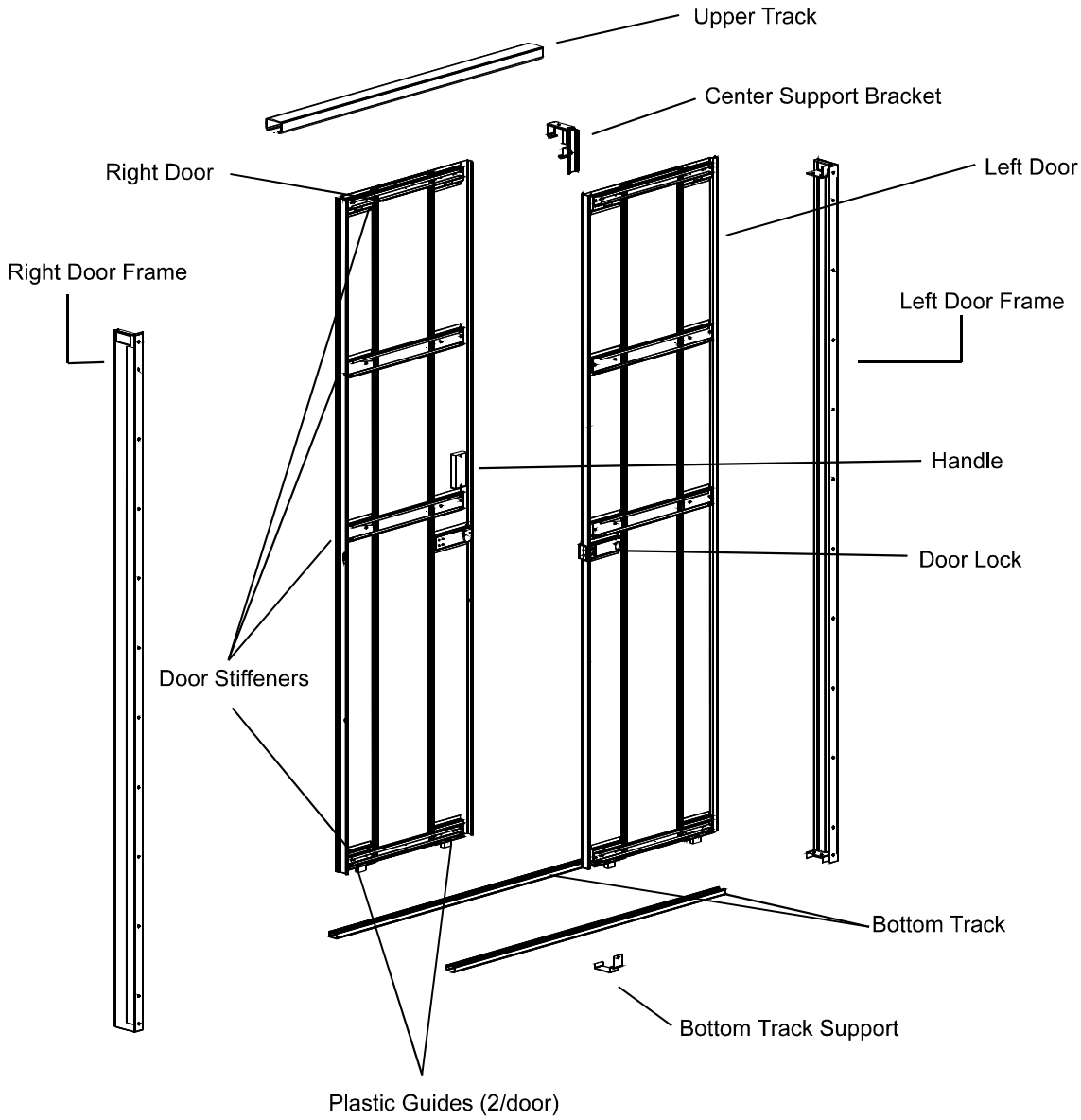


Figure 2-7A – Side Profile

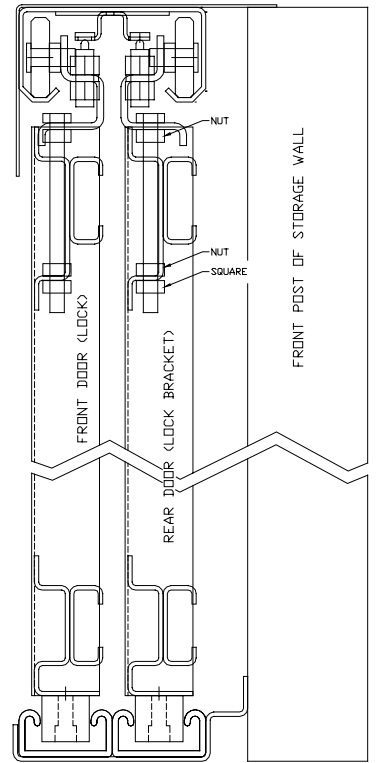
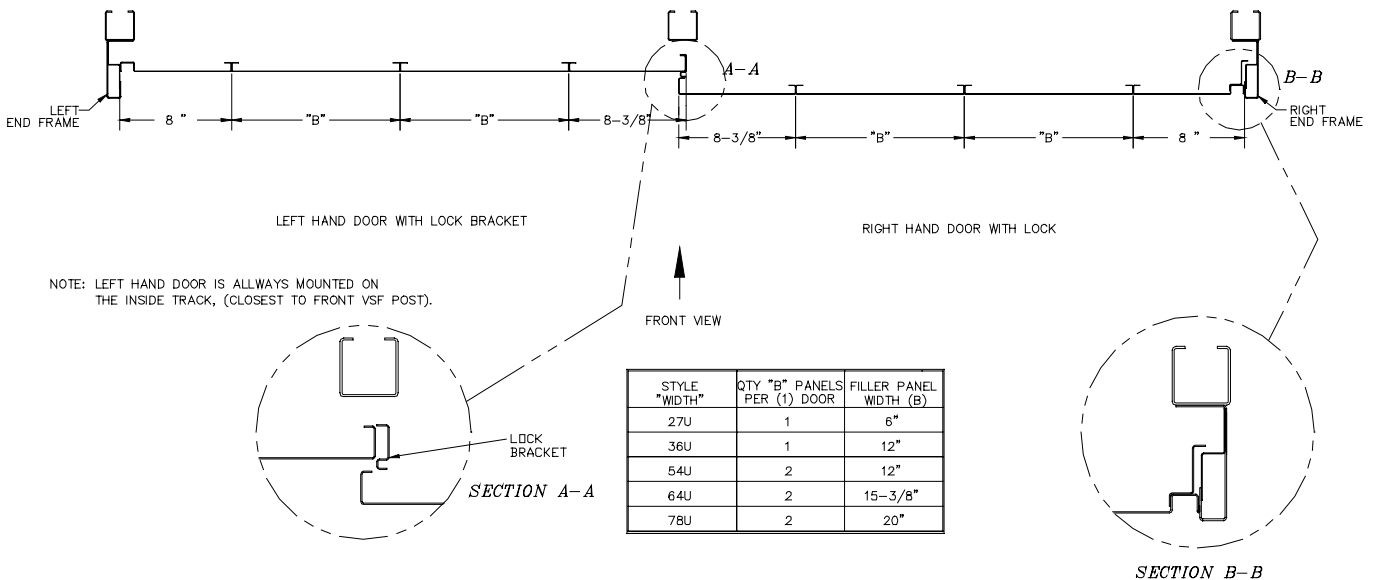


Figure 2-9A – Top view of Double Sliding Door Set



Inserting the Sliding Doors into the Upper and Lower Tracks

From the right side of the Storage Wall (without the Door Frame attached), insert the door without the lock by sliding into the inner channels of the Upper and Lower tracks. Slide the second door (with the lock) into the outer channels of the upper and lower tracks. For a Triple-Door set, slide the third door into the inner channels of the Upper and Lower tracks. **Triple Doors must always be placed on the right hand side of the Storage Wall System.**

Attaching the Right Door Frame

Once all of the doors are installed into the Upper and Lower Tracks, you can attach the Right Door Frame.

Step	Action	(Refer to Figure 2-10)
1	Attach the Right Door Frame to the right side of the Storage Wall using 5/16 x 3/4" Hex Head bolts and nuts.	
2	Attach the two Unistrut nuts to the bottom of the Right Door Frame using 5/16 x 3/4" x 82° Flat Head screws. Insert the screws <i>down</i> through the bracket of the Door Frame and into the Unistrut nuts. Loosely secure.	
3	Slide the Lower Track into the Door Frame by positioning the Lower Track so that the Unistrut nuts fit into the front and back channels of the track.	
4	Position the Lower Track so that it is parallel with the Storage Wall. Tighten the 5/16 x 3/4" x 82° Flat Head screws using a 3/16" Allen wrench.	
5	Secure the Upper Track to the Right Door Frame by inserting a Track Mount Bracket into each end of the Upper Track, as shown. Insert two 5/16 x 3/4" 82° Flat Head screws up and through the top bracket of the Right Door Frame and into the Track Mount Bracket. Refer to Figure 2-10 below.	

Adjusting the Doors

Test the lock system to make sure the doors are aligned. To level the doors, adjust the two top 1/4" - 20 nuts on each 3/2" Hex Head bolt. Test the Lock system once again before tightening the square nuts.

Installing the Flashing

Attach the flashing to the top of each Storage Wall unit. Each section of flashing provides a cutout to allow for the top center support brackets, as shown in **Figure 2-11**. Match the sections of flashing with the top of your storage wall and secure from inside the top of each storage wall section with 1/4-20 Phillips Head screws and nuts.

Figure 2-10 Attaching the Right Door Frame to the Upper Track

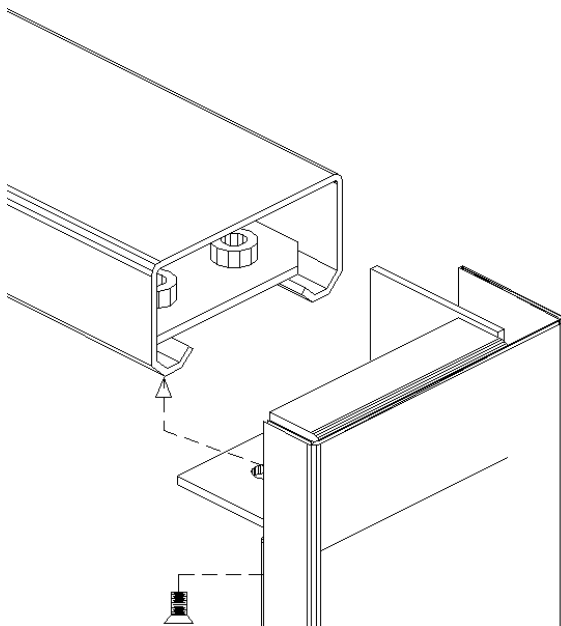
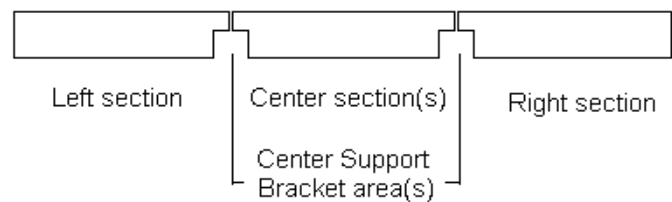


Figure 2-11 Flashing



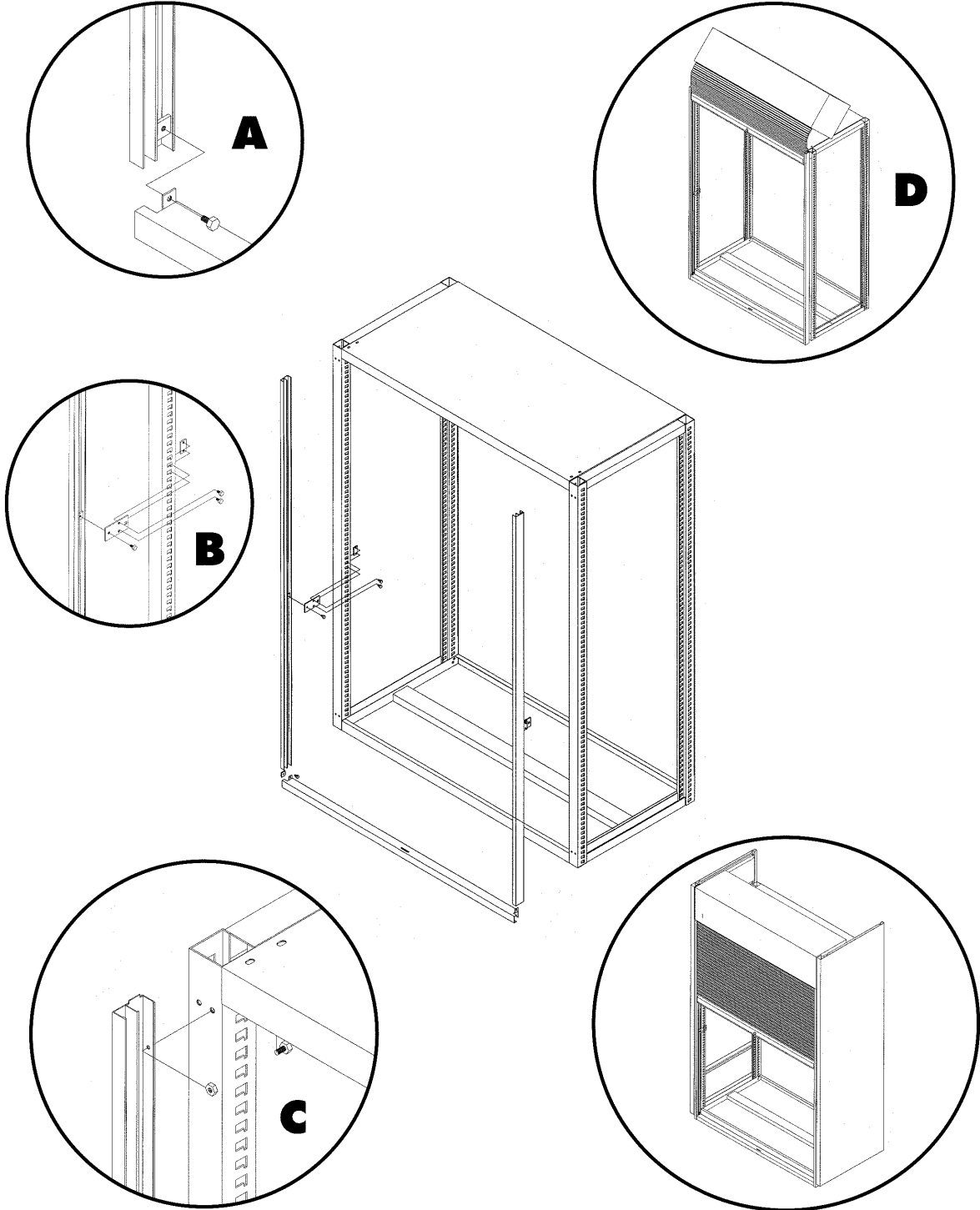
Installing Tambour Doors

The Tambour door attaches to the top of the Storage Wall and is pulled down or pushed up to access the inside of the Storage Wall. The Tambour Door can be mounted at full or partial height. When assembling the Tambour Door unit, loosely secure all hardware and use Loctite Blue (not included). Once the procedure is complete, and all parts are assembled and attached, secure all hardware. Before beginning this procedure, please ensure that the proper Universal Panel has been ordered and installed correctly. Universal Panels for Tambour Doors have knock-out holes (or pre-punched holes in earlier models) on the top surface.

Attaching the Crossbar (Figure A)		
Step	Action	(Refer to Figure 2-12)
1	Position the crossbar so that the flanges face up. Insert a M6 x 16 Hex Head Bolt through the holes located in the flange at the ends of the cross bar. Loosely secure a square anchor plate to the Bolt.	
2	Slide the square anchor plate located on the left side of the crossbar into the left track, and tighten enough so that it does not slip.	
3	Repeat step 2 on right side of crossbar.	
Pre-Assemble the Brackets (Figure B)		
1	Insert one M6 x 16 Hex Head Bolt into the last hole of the three hole bracket (Third hole from square cutout). Loosely secure a square anchor plate. There are two brackets required, one for each side of the Tambour Door.	
2	Slide the square anchor plate of the bracket assembly into the Left track and position approximately half way up the rail. Tighten enough that it does not slip.	
3	Repeat Step 2 for Right Side	
Attaching Tracks to Vertical Side Frames (Figure C)		
1	Locate the knock-out holes on the front of the Vertical Side Frames. Comparing these holes to the holes on the Tambour Door Tracks, identify the two holes (per Vertical Side Frame) that are required. Using a Hammer and Screwdriver, punch through these holes. This will be required on both the Left and Right Vertical Side Frames. Note: Earlier models may have pre-punched holes, instead of knock-out holes.	
2	Position the Left track against the Vertical Side Frame. Position the middle bracket in its final position. It may be easier to remove the Right track from wider Tambour Door assembly if you only have one person performing the installation.	
3	Insert two M6 x 16 Hex Head Bolts through the two holes in the bracket and loosely secure to the holes on the Vertical Side Frame using a rectangular anchor plate.	
4	Repeat Step 2 for Right Side.	
5	Align the holes at the Top and Bottom of the Tracks with the holes punched in the Vertical Side Frame. Using two ¼-20 x 5/8" Hex Head Bolt and Nuts, Secure the Tracks to the Vertical Side Frame. This will be required for the Left and Right Tracks.	
Attaching the Tambour Door Unit (Figure D)		
1	Position pre-assembled Tambour Door unit on its back on the Top Universal Panel.	
2	From the inside of the Universal Panel , using a Hammer and Screwdriver, punch through the knockouts. These knock-out holes will be used to secure the Tambour Door housing to the Storage Wall. Note: Earlier models may have pre-punched holes, instead of knock-out holes.	
3	Pull the Tambour Door out of the Housing approx. 6 inches. Guide the Door into the Left and Right Tracks. Ensure that the door remains level as you guide the door into the Tracks.	
4	Rotate the Tambour Door Housing so that it is sitting upright on the Top Universal Panel. Secure from the inside of the Storage Wall using Four (4) M6 x 16 Hex Head Bolts. Ensure that you do not over tighten the bolts, as this may interfere with the operation of the door.	

Note: If using Tambour Door End Panels, follow instructions located in Chapter 1.

Figure 2-12 Installation of Tambour Door Unit



Installing Hinged Doors

The Starter section of a Double Hinged Door set consists of two doors, top and bottom mounting rails, and two end panels. The Adder section consists of two doors and top and bottom mounting rails.

The Double Hinged Doors mount to a unique set of Vertical Side Frames and Universal Panels. Refer to Chapter 1 for more information on identifying the Vertical Side Frames and Universal Panels. Make sure that the opening of the bottom Universal Panel is facing up. (The smooth side should face down).

The overall standard height of the Double Hinged Doors with the mounting rails is 2000 or 2200 points, depending on the size of your Storage Wall. The locking mechanism is pre-assembled.

Attaching the Mounting Rails	
Step	Action (Refer to Figure 2-13)
1	Before you begin the installation, make sure that the Storage Wall is level. Refer to “Leveling and Anchoring the Storage Wall” on page 1. <i>The Storage Wall and Hinged Doors must be level to close and lock properly.</i>
2	Attach the top-mounting rail to the top Universal Panel by aligning the hole patterns of the mounting rail and top Universal Panel. Loosely secure from inside the unit using ¼-20 x 5/8” Hex Head bolts and flat washers. <i>Note: Do not fully tighten the bolts; you will need to adjust them later in this procedure.</i>
3	Mount the bottom-mounting rail to the bottom Universal Panel, as indicated in Step 2.
4	Insert the two long plastic bushings into the two outer holes in the bottom-mounting rail.
5	Pick up the following items: 1 short plastic bushing, 1 black clip, 2 chrome pins.
Attaching the Doors	
1	Position the Left Door (the door without the handle) so that the hole in the lower left corner of the door lines up with the left lower bushing.
2	Drop one pin through both of the flanges at the bottom of the door and into the bushing.
3	Hold the door in place and insert the short bushing up and into the left outer hole in the top-mounting rail. You may need to hold it in place as you pull the door toward the bushing. Insert the remaining pin up through the two flanges at the top of the door and into the bushing.
4	Snap the black plastic clip onto the relief in the upper pin to hold it in place.
5	Repeat Step 1 through 4 to attach the Right Door.
Attaching the Hinged Door End Panels	
1	Locate the Vertical Side Frames at the end of each door section. There will be knockout holes located in the middle of the Vertical Side Frames. Using a Hammer and Screwdriver, punch through the knockouts on the end Vertical Side Frames only. There are additional holes offset from the center (at the top and bottom of the Vertical Side Frame. These will not be required for Hinged Doors. Note: In earlier models, Vertical Side Frames may or may not be pre-punched for installation of Sliding Doors. If you don't have any holes on the front of the Vertical Side Frame, you will need to drill the holes.
2	Secure the Left and Right Hinged Door End Panels using ¼-20 x 5/8” hex head bolts and nuts.
Adjusting the Doors	
1	Swing the doors open and closed to make sure they are level.
2	If necessary, adjust the level by positioning the top and bottom mounting rails. Once level, tightly secure the three ¼-20 x ½” Hex Head bolts on each rail.
3	Insert the white plastic button head caps into the small holes in the top and bottom mounting rails (on both sides of the square cutouts).
4	Close the doors and make sure the tongue of each door fits snugly over the button head caps to hold the door shut. If necessary, adjust the tongue of the door by bending it up or down to fit snugly. If the tongues of the doors are a great distance away from the button head caps, you may need to move the top mounting rail closer to the doors.
5	Tighten the bolts on the top and bottom mounting rails.

Figure 2-13 Assembling Hinged Doors

