
SHIELD

INSTALLATION GUIDE

LAST UPDATED JANUARY 27, 2014

Required Tools & Supplies

Safety glasses
Tape measure
Pencil
Utility knife
Stud finder
4' bubble level
Torpedo level
#2 Pozi screwdriver
Saw with metal blade
Variable speed drill with clutch
1/4", 3/8" and 1/2" center point drill bits
Assorted size nut drivers
Allen wrenches
Caulk gun
Clear silicone
Tape

Optional Tools & Supplies

Step ladder
Hammer drill (island installations only)
Tapcon concrete screws and bit (island installations only)
Chalk line
Belt sander
Table saw
Variable speed jig saw (required for cutting cabinet backs for outlets/microwave vents)
Hole saw kit (required for cutting cabinet backs to allow plumbing)
5" random orbital sander
4'x8' moving blanket
Vacuum lifting clamp
Belt sander / grinder

Blocking Requirements (provided and installed by general contractor):

- 20ga or less steel studs – blocking required
- Use 2x4 or 2x6 fire-rated lumber
- Heavy-gauge steel studs do not require additional blocking
- Wood studs do not require additional blocking
- Masonry walls do not require additional blocking (do not screw to mortar joints)

All walls are assumed to have studs located every 16" on center. For any wall with studs located further apart than 16" on center, additional blocking will always be required.

Recommended Hardware By Wall Type (hardware not included)

Wood studs and/or 3/4" plywood blocking walls

Z-Rail

#10 wood screws (length = 2" + drywall thickness) into studs

Securing cabinet

#10-24 snap toggles with pan head machine screws into drywall

OR #10 wood screws (when applicable)

Steel studs

Z-Rail

#10-24 snap toggles with pan head machine screws

OR #10 flat head sheet metal screws into studs for wall bracket

Securing cabinet

#10-24 snap toggles with pan head machine screws

OR #10 flat head sheet metal screws

Masonry walls

Z-Rail

¼" machine screw expansion anchors of adequate length

Securing cabinet

¼" machine screw expansion anchors of adequate length

Shipping & Handling

Shield Casework® packages each cabinet individually, protecting all corners and exposed edges with foam and cardboard. Cabinets are cross-banded and wrapped entirely in clear plastic wrap. This packaging will protect the product and ensure safe delivery to the jobsite, provided the following measures are respected:

- Shield Casework® must be shipped and handled in the upright position, the same as its installed orientation. Otherwise, shelving and other components packaged inside may become damaged.
- Shield Casework® must not be stacked at any time. Transport all casework using carpeted four-wheel furniture dollies or by two-wheel hand dollies.
- Never pick up a base cabinet by the stretcher.
- Transport each cabinet to its install location before unwrapping.
- All cabinets are considered "team lift" items. Shield products should be carried, lifted and installed by at least two individuals at all times.
- Cabinets are labeled to match their locations on the plans.
- Keep all enclosed shelving and hardware together with its assigned cabinet.
- Use extreme caution handling, moving, or setting cabinets after unpacking.
- Never set a cabinet on its edge, particularly on concrete or other hard surfaces. Instead use multiple layers of cardboard or moving blankets.

Any damage observed must be documented and photographed during the initial unpacking.

However, any nicks, cracks, or other minimal damage caused during installation can be repaired to original condition in very little time without requiring delay or replacement.

Blocking and Z-Rail Installation Height

Shield wall cabinets hang on a single Z-Rail making installation fast, easy and adjustable. To locate the blocking and install heights, fill out the variables from the architectural plans and plug them into the formula below.

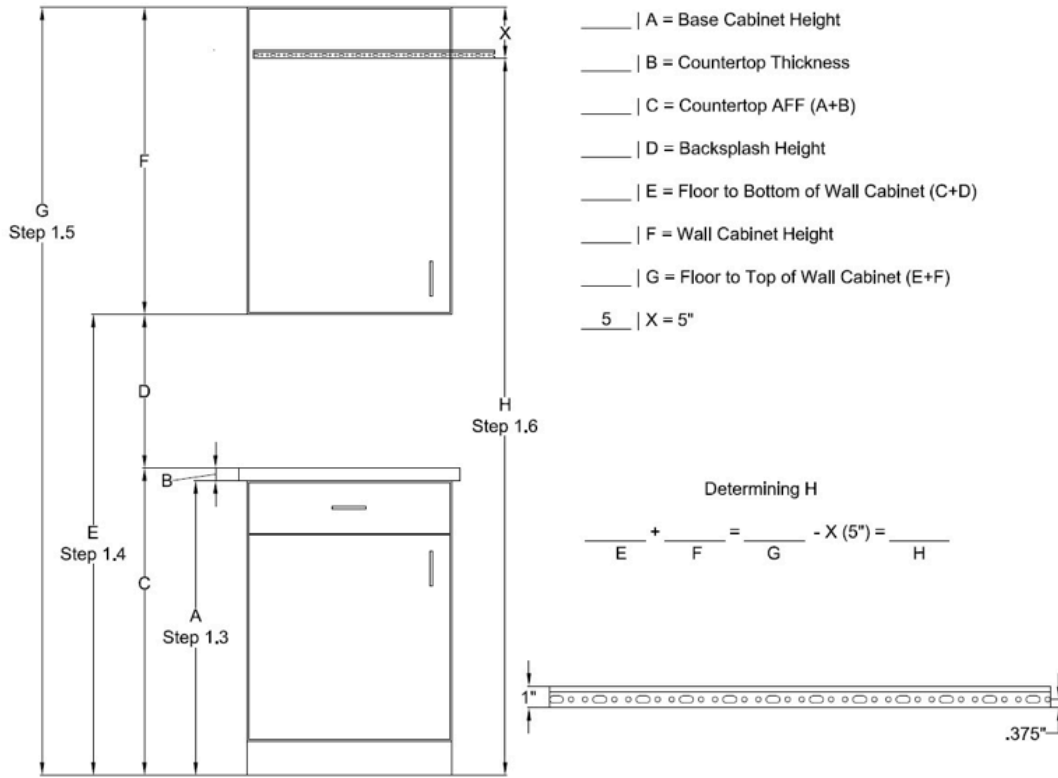


FIGURE 1

1

Pre-Installation

For cabinets to function properly, they must be installed both level and plumb. Proper preparation combined with Shield's Z-Rail, leveling feet and predrilled holes will ensure the installation is simple and easy.

Use the illustration on page 4 to help determine all the dimensions and variables for your installation.

- 1.1 First, sweep the installation area to clear any debris leftover from rough-in construction. The area should be free from dust, screws and trash.
- 1.2 Locate the high spot on the floor using your 4' level. Check every inch along your cabinet run.
- 1.3 Measure up from the high value entered in Figure 1, Dimension A, and mark a horizontal line along your entire cabinet run. This marks the top of the base cabinets. If you are installing cabinets prior to the finished floor being installed, check with the GC and adjust measurements to accommodate the thickness of the floor material.
- 1.4 Measure again from the high point up to Dimension E and mark a horizontal line along your entire cabinet run. This marks the bottom of the wall cabinets. The distance between the two lines on the wall should be Dimension B+D, your countertop thickness and backsplash clearance.
- 1.5 Depending on the height of wall cabinets ordered, the location of the Z-Rail will need to be calculated. Mark Dimension G on the wall, up from the high point on the floor. This line will be the top of the wall cabinets.
- 1.6 From that point, measure down 5", (Dimension X) and scribe a line the length of the cabinet run, this is the bottom of the Z-Rail (Dimension H).
- 1.7 At this point, you should have four horizontal lines scribed across the wall, the top of your base cabinet, the bottom of your wall cabinet, the top of your wall cabinet, and the bottom of the Z-Rail.
- 1.8 Using your stud finder, locate the studs in the walls and mark them on both the Z-Rail line and the top of the base cabinet line. In commercial construction, you can often find the studs by removing some acoustical panels from the grid ceiling and visually locate studs or un-mudded screws. In the case of a hard ceiling, you can cut an access hole or drill holes methodically anywhere below the Dimension A line we scribed in step 1.3.

2

Z-Rail System Installation

Shield recommends that you install the wall cabinets first; this will prevent you from having to lean over the base cabinets during wall cabinet installation.

- 2.1 Using the line marked on the wall during Step 1.5, secure the Z-Rail to the wall.
 - a. The bottom of the Z-Rail should be flush with the line you created in step 1.5.
 - b. Use the recommended hardware for the wall type you are attaching to. (See “Recommended Hardware”, page 2.)
 - c. The Z-Rail must be secured to the wall a minimum of every 16”.
 - d. The Z-Rail must also be secured to the wall in the two outermost holes (the ones closest to each end). The ends of the Z-Rail will almost always fall in-between studs. If no blocking is available, a drywall toggle must be used.

- 2.2 The Z-Rails come in 8’ lengths and can easily be cut with a hack saw or reciprocating saw with a metal blade. We recommend hanging one piece at a time, double checking measurements before cutting the next piece. The length of the Z-Rail should be $\frac{3}{4}$ ” shorter on each side, bringing the total length to 1 $\frac{1}{2}$ ” shorter than the entire run of the cabinets. This allows for the thickness of the material as well as a $\frac{1}{4}$ ” tolerance at each end.

Before installing wall cabinets, verify that each piece of the Z-Rail system is the correct length and has an anchor or screw in both end holes. The Z-Rail must have supports at the extreme ends of the rail. Failure to secure these could allow sagging and cabinets pulling away.

The Z-Rail must have screws at least every 16”, as well as in the outermost holes. If the outermost holes fall in-between studs, a drywall anchor must be used. Failure to install screws at these intervals will void your warranty.

3

Wall Cabinet Installation

Before installing any of the wall cabinets, it is a good idea to familiarize yourself with the Z-Rail and the way the cabinets attach to the rail. First, you must back the brackets horizontal adjustment screw all the way out (see Figure 2 for the Bracket Overview, page 14). This will make hanging the cabinet on the wall easier, as it gives you a larger surface area for the Z-Rail to catch. If you do not back out the horizontal adjustment screw, the cabinet may not be completely secured to the wall.

All Shield cabinets are “team-lift” items: no cabinet should be installed, carried or moved by one person. Before installing the first cabinet, it is a good idea to remove all shelves and doors from the wall cabinets. Use a piece of tape to mark each shelf, door, and cabinet to save confusion later.

Begin installing the corner cabinets first (if there is one). If not, begin with a cabinet that meets a wall.

- 3.1 Cabinets that go next to a wall will have an accompanying corner or filler piece that will need to be installed prior to hanging.
 - a. Filler strips allow the cabinet doors and drawers to operate without hitting walls.
 - b. In wall-to-wall conditions, filler strips are sent wide (3”) and need to be field cut and scribed to the wall. Use a table saw, jig saw, belt sander, or grinder.
 - c. Once cut to size, attach the filler strip to the cabinet using the provided hardware.

- 3.2 Begin by hanging the first cabinet on the wall. Slide it against the wall into position.
 - a. Check to see how close the bottom of the cabinet is to the level line created in step 1.4 (page 5).
 - b. If the cabinet is covering the line or is not level, using a screwdriver with a Pozi bit, turn the vertical adjustment screws (see Figure 2 for the “Bracket Overview”, page 14) on both sides of the cabinet to raise or lower the cabinet. Double check the level using a torpedo level.
 - i. If the line is covered and raising the cabinet with the adjustment screws does not uncover the line, the rail was not hung at the correct height or there was a measurement error. If this is the case, double-check your measurements and reinstall the rail if necessary.
 - ii. We recommend leaving the horizontal adjustment screws fully extended until you get all the wall cabinets hung.

3

Wall Cabinet Installation Cont.

- 3.3 Hang the second cabinet a few inches away from the first cabinet.
 - a. Once it is securely hung on the rail, carefully slide the cabinet next to the first.

- 3.4 Check the alignment and adjust the vertical and horizontal adjustment screws to line up the four predrilled penetrations in the cabinets.
 - a. Using the provided barrel nuts and screws, connect the two cabinets together in all four locations. At this point, hand tightening is recommended.

- 3.5 Continue to hang cabinets and connect them in the same manner as step 3.4.

- 3.6 When the last cabinet meets a wall, you will once again need to scribe the filler strip to the wall. Repeat the same process you used on the first filler strip in step 3.1 and attach to the cabinet.

- 3.7 Once all the cabinets have been hung on the wall, stand back and look at the installation as a whole. Verify that the bottom edge of all the cabinets meet the level line scribed earlier. You may check multiple cabinets by using a 4' or longer level.

- 3.8 Line up the front edges and tighten all the barrel nuts using an allen wrench. The front of each cabinet should be flush with the one beside it.

- 3.9 Once all cabinets are level and firmly connected to each other, position them flush to the wall by tightening the horizontal adjustment screw.

- 3.10 To keep the cabinets from lifting off the track and to provide extra hanging strength, two drywall anchors need to be installed into the backs of the wall cabinets. Masonry walls will need different hardware (see "Recommended Hardware", page 2).
 - a. Drill out the drywall using a ½" drill bit.
 - b. Install the supplied drywall anchors and break off the excess.
 - c. Anchor the cabinets to the wall by inserting the bolt and washer. Do not over tighten; use a screwdriver or a drill with a clutch. No impact drivers.
 - d. Install the cover plate over the screw. If the cover plate will not stay on its own, apply a small amount of silicone and hold with tape until the silicone dries.
 - i. In the event that the predrilled holes interfere with a stud, additional hardware (#10-24 snap toggles) will need to be located to correctly anchor the cabinet to the wall.

3

Wall Cabinet Installation Cont.

- 3.11 Install the oval cover caps using the same method as the round cover caps above.
- 3.12 Once the cabinets are fully secured to the wall, install the shelf pins at the desired height and set the shelf on top. Verify that the dowels align with the recess in the bottom of the shelf.
- 3.13 Re-install the doors on their respective cabinets.
- 3.14 All Shield knobs and pulls are installed on the inside of the cabinet when shipping. They need to be removed and installed on the outside of the door. Use a #2 Pozi screwdriver.
- 3.15 When all the doors are installed, stand back and look for doors that are out of alignment.
 - a. Each concealed hinge can be adjusted in three dimensions with a #2 Pozi screwdriver. See the “Concealed Hinge Adjustment” (paragraphs 8-10, pages 16-20) for an explanation of what each adjustment does. Once all the doors are aligned, install the hinge cover caps.
 - b. Five-knuckle hinges are not as easily adjusted. Each five-knuckle hinge has four screws per hinge that need to be loosened to make adjustments. You may need to loosen the screws on the accompanying hinge before being able to adjust the door.

4

Base Cabinet Installation

Shield base cabinets all come with four adjustable leg levelers. The mounting plates already come pre-attached and help prevent damage when shipping. They also make it easy to place your fingers under the cabinets when lifting. Since you already found the high spot on the floor and marked a level line where the top of the base cabinets should go in step 1.3, you are ready to begin installation.

Do not lift base cabinets by the stretcher! Handling Shield Casework in this manner will void all warranties. When lifting a base cabinet, always lift from the bottom. A suction clamp can be used on the outsides of the cabinet if available.

All Shield cabinets are “team-lift” items, no cabinet should be installed, carried or moved by one person.

We recommend removing all doors, shelves and drawers before beginning installation. This will make installation easier, faster and safer. Be sure to label the drawers, doors, and shelves to eliminate confusion later.

Always place a moving blanket or several layers of cardboard down before placing the cabinet on its back.

- 4.1 If you had wall cabinets, resume your installation by starting on the same wall as you did for the wall cabinets. If not, begin with a cabinet that meets a wall.
- 4.2 To install the leveling feet, lay the cabinet on its back and simply press the leg into the socket on the bottom of the cabinet. You may use a rubber mallet to get the leg firmly in place. Using a tape measure, roughly position the height of the leveling feet to the correct height (typically 4”) before returning to the upright position. It is easier to lower the cabinet than to raise it. See “Leg Levelers”, paragraph 16, page 25.
- 4.3 Cabinets that go next to a wall will have an accompanying corner or filler piece that will need to be installed prior to hanging.
 - a. Filler strips allow the cabinet doors and drawers to operate without hitting walls.
 - b. In wall to wall conditions, filler strips are sent wide (3”) and need to be field cut and scribed to the wall. Use a table saw, jig saw, belt sander or grinder. If there are wall cabinets above, match the width of the filler strip to the cabinet above.
 - c. Once cut down to size, attach the filler strip to the cabinet using the provided hardware.

4

Base Cabinet Installation Cont.

- 4.4 Vertically adjust the cabinet to where you can see the line scribed in step 1.3. Level this cabinet and measure the reveal from the floor to the bottom of the cabinet.
- 4.5 Repeat the installation of the leveling feet on the next cabinet.
- 4.6 Place the next cabinet next to the first one and begin to adjust the cabinet so the penetrations line up between the cabinets. It is easier if one installer remains standing with the barrel nuts in hand while the other remains on the floor and adjusts the feet. The installer standing should give instructions to the other on which leveling foot to adjust.
- 4.7 Get all four barrel nuts into the penetrations and hand tighten. Do not worry about alignment or that all leveling feet are touching the ground at this time.
- 4.8 Continue installing the remaining cabinets, repeating steps 4.2 and 4.4.
- 4.9 When you run into a situation where you need to cut a hole in a cabinet for plumbing or electrical, follow these guidelines:
 - a. Mark and template where the penetrations will be on the back of the cabinet by measuring dimensions from the wall and transfer them to the cabinet. (Measure twice, cut once.)
 - b. Use a hole saw bit for plumbing connections and round penetrations.
 - c. For outlets or items requiring a square hole, oversize the hole a ½" in each direction. Using a ½" drill bit, drill out the four corners, then cut the straight lines with a jigsaw. It is important to leave a radius in the corners; do not square out the corners.
- 4.10 When you get to the last cabinet and it meets a wall, you will once again need to scribe the filler strip to the wall. Repeat the same process you used on the first filler strip in step 4.2 and attach to the cabinet before moving into place.
- 4.11 Once all cabinets have been placed, it is time to align and level the entire run. The first priority is to line up the front edges with all of the barrel nuts already in but not tightened. Adjust the leveling feet as necessary to make the front, top and bottom edges line up. When they do, tighten the barrel nuts with an allen wrench. Continue this for the entire run of cabinets.
- 4.12 Now that the cabinets are all connected as one large unit, Verify they are level, from left to right and front to back. Don't worry about having all the leveling feet touch the ground; level the cabinets first. Once the cabinets are level, go back and unscrew the feet so that all feet make contact with the ground.

4

Base Cabinet Installation Cont.

- 4.13 If your installation requires that all the base cabinets be anchored to the wall, a drywall anchor needs to be installed into the back of the cabinet. Masonry walls will need different hardware (see “Recommended Hardware”, page 2).
 - a. Drill out the drywall using a 1/2” drill bit.
 - b. Install the supplied drywall anchors and break off the excess.
 - c. Anchor the cabinet to the wall by inserting the bolt and washer.
Do not over tighten; use a screwdriver or a drill with a clutch. No impact drivers.
 - d. Install the cover plate over the screw. If the cover plate will not stay on its own, apply a small amount of silicone and hold with tape until the silicone dries.
 - i. In the event that the predrilled holes interfere with a stud, additional hardware (#10-24 snap toggles) will need to be located to correctly anchor the cabinet to the wall.

- 4.14 Re-install all shelves, drawers and doors to their respective cabinets. Once in place, adjust all doors and drawers by following the direction on “Concealed Hinge Adjustment” (paragraph 8-10, pages 16-20) and “Drawer Adjustment” (paragraph 15, page 24).

5

Toe Kick - Installation

Once cabinets are set and anchored to the wall, you must connect the toe kick to the leg levelers. This is accomplished by screwing the leg clips to the toe kick.

- 5.1 Lay the toe kick out flat in front of the cabinets and trim to length.
- 5.2 Transfer a mark to the toe kick, representing the center of each leg.
- 5.3 Take the toe kick clips and screw them on the toe kick, lining them up with the marks you just made.
- 5.4 Once all the clips are on, stand the toe kick up and press into position.
- 5.5 Cover the raw toe kick with vinyl cove base or another specified finish.

6

Bracket Overview

Shield wall cabinets utilize an adjustable bracket to make leveling wall cabinets easy. Familiarize yourself with how the brackets work to make installation easier.

Each bracket has two adjustment screws, one horizontal (bottom screw) and one vertical (top screw). Prior to installing the cabinet on the wall, it is necessary for the horizontal adjustment screw to be fully extended. This allows for a greater amount of surface area for the Z-Rail to catch.

To do this, from inside the cabinet, turn both of the horizontal adjustment screws counterclockwise until fully extended. This can also be done by hand from the back of the cabinet by turning the horizontal adjustment screw clockwise. You are now ready to hang the cabinet on the wall.

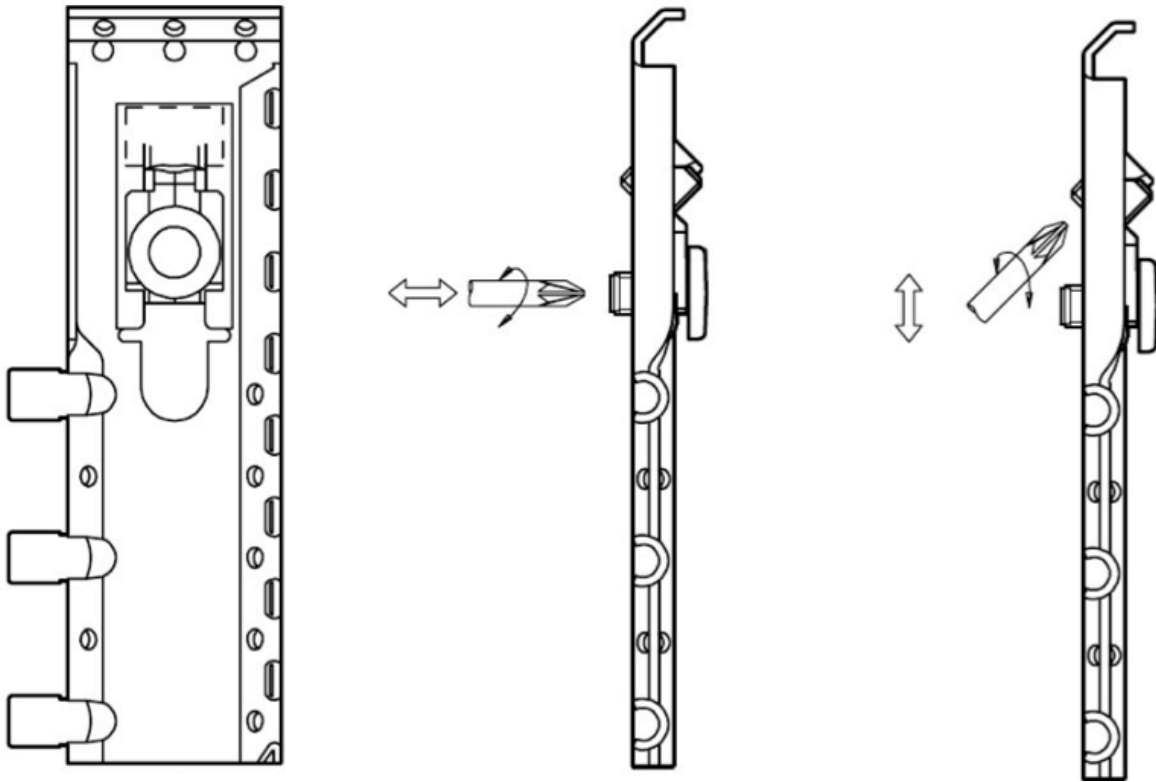


FIGURE 2

6

Bracket Cont. Adjustment

These brackets allow for up to 1.2cm (0.47") of vertical adjustment and 1cm (0.39") of horizontal adjustment.

REMINDER:

Always use a screwdriver with a Pozi bit to make adjustments.

DO NOT use a Phillips bit or a drill/impact driver.

7

Concealed Hinges

Overview

If your cabinets came with concealed hinges, learning how to remove them, re-install them, and adjust them properly will make your job of installing and maintaining the cabinet much easier.

Installation of the concealed hinges is simple and easily done with just one person and no tools. For large doors with more than two hinges, a second person to help assist is recommended.

Each hinge connects the same way, the leading edge of the hinge must connect first, then pivot the tail of the hinge down and press down firmly. You will hear an audible snap when the hinge locks into place. Test each door for function and to verify that the hinge is firmly and securely latched before moving to the next door.

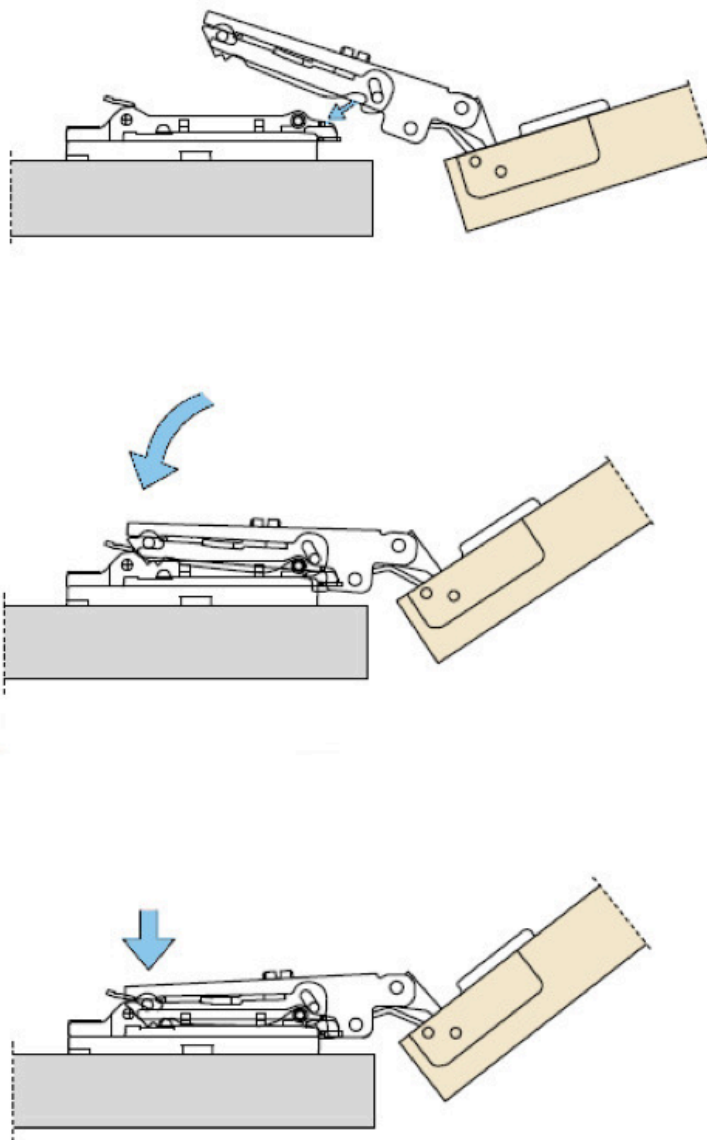


FIGURE 3

7

Concealed Hinges

Removal

Removal off the doors with concealed hinges is simple and requires no tools. Simply depress the lever at the back of the hinge and lightly open the door past its max opening position and the back tail will lift off.

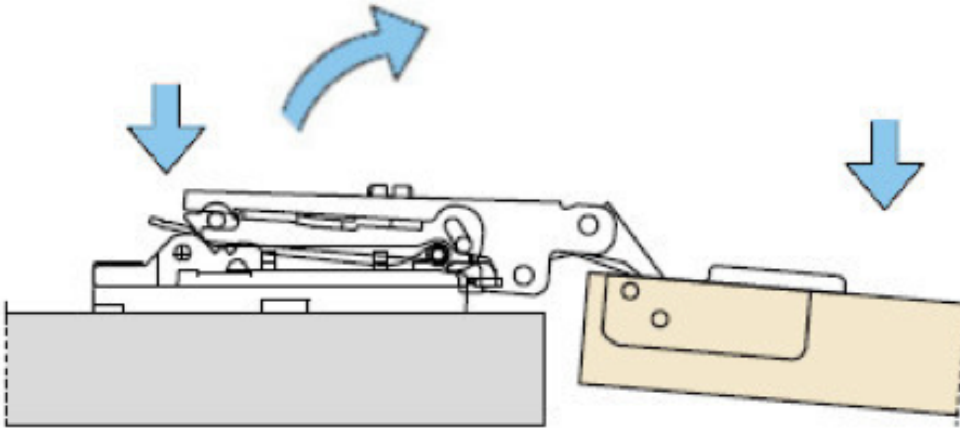


FIGURE 4

7

Concealed Hinges

Adjustment - Left to Right

All hinges have three screws for adjusting the door in three dimensions. To shift the door left and right, turn the front screw, which is closest to the door itself.

REMINDER:

Always use a screwdriver with a Pozi bit to make adjustments.

DO NOT use a Phillips bit or a drill/impact driver.

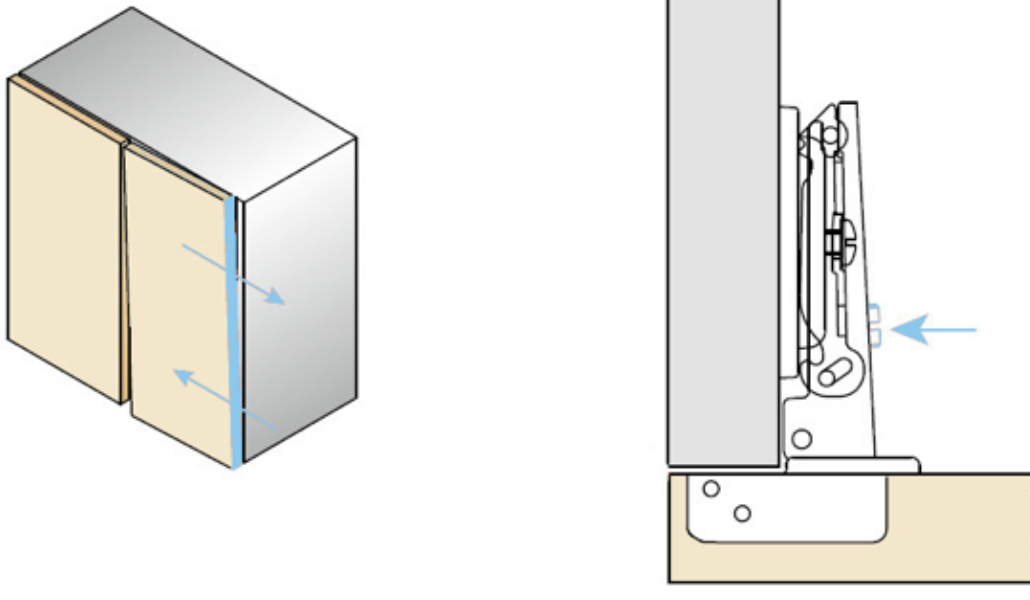


FIGURE 5

7

Concealed Hinges

Adjustment - Front to Back

All hinges have three screws for adjusting the door in three dimensions. To shift the door front to back, turn the rear screw, which is the one furthest from the door.

REMINDER:

Always use a screwdriver with a Pozi bit to make adjustments.

DO NOT use a Phillips bit or a drill/impact driver.

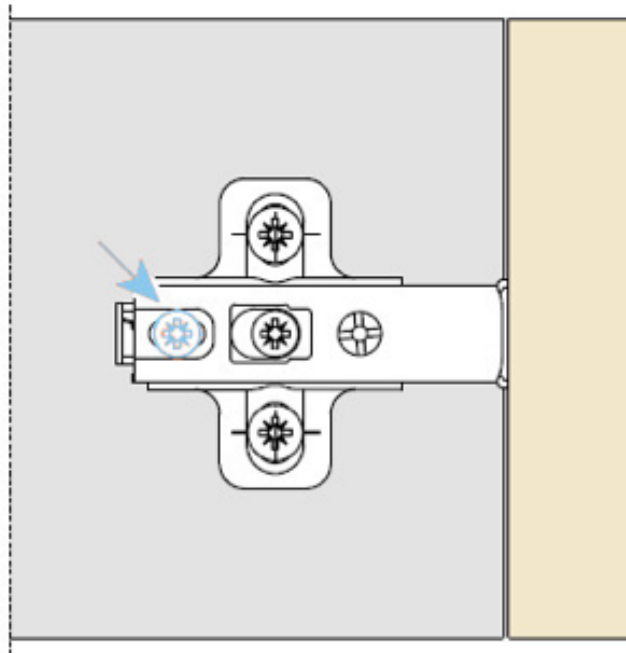
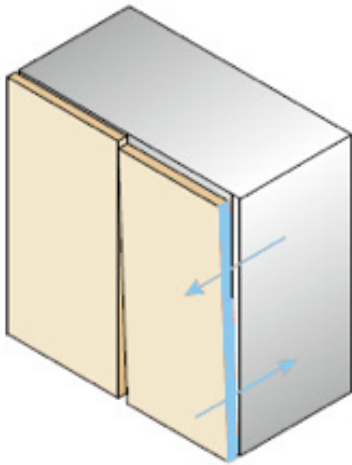


FIGURE 6

7

Concealed Hinges

Adjustment - Up and Down

All hinges have three screws for adjusting the door in three dimensions. To shift the door up and down, turn the center screw.

REMINDER:

Always use a screwdriver with a Pozi bit to make adjustments.

DO NOT use a Phillips bit or a drill/impact driver.

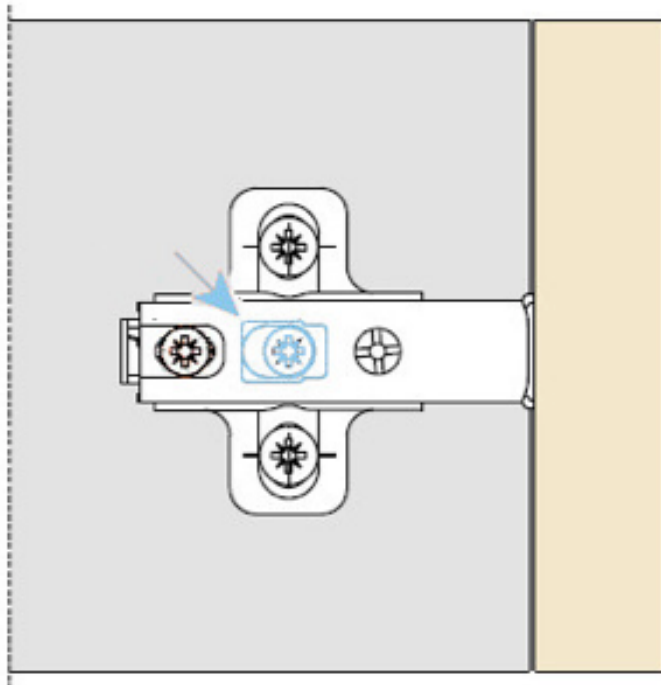
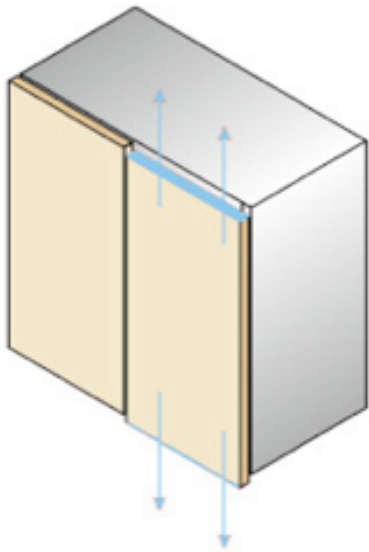


FIGURE 7

8

Soft Close Installation and Removal

Your cabinets may have come installed with soft close dampers. Should you wish to remove or install additional dampers, follow these instructions. Both removal and installation of the damper itself does not require tools. To remove the mounting plate, you will need a screwdriver to remove one screw and replace it with one of a shorter length. Installation is just the opposite; you will need a longer screw to attach the mounting plate.

REMINDER:

Always use a screwdriver with a Pozi bit to make adjustments.

DO NOT use a Phillips bit or a drill/impact driver.

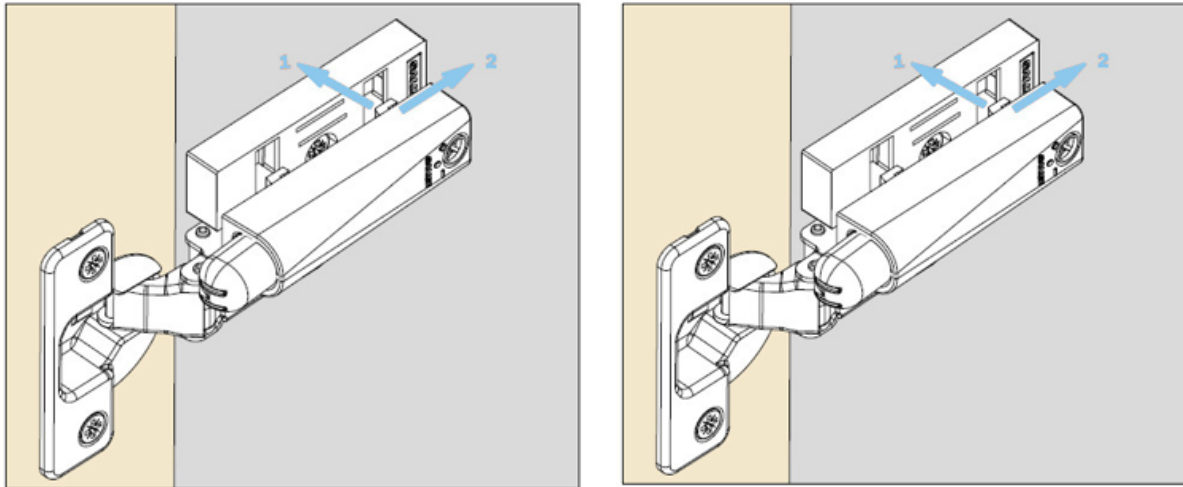


FIGURE 8

8

Soft Close Adjustment

You can control at what point the damper begins to make contact with the door, which will speed up or slow down the rate that it closes. Turn the screw clockwise to make the door close slower and counterclockwise to make it close faster.

REMINDER:

Always use a screwdriver with a Pozi bit to make adjustments.

DO NOT use a Phillips bit or a drill/impact driver.

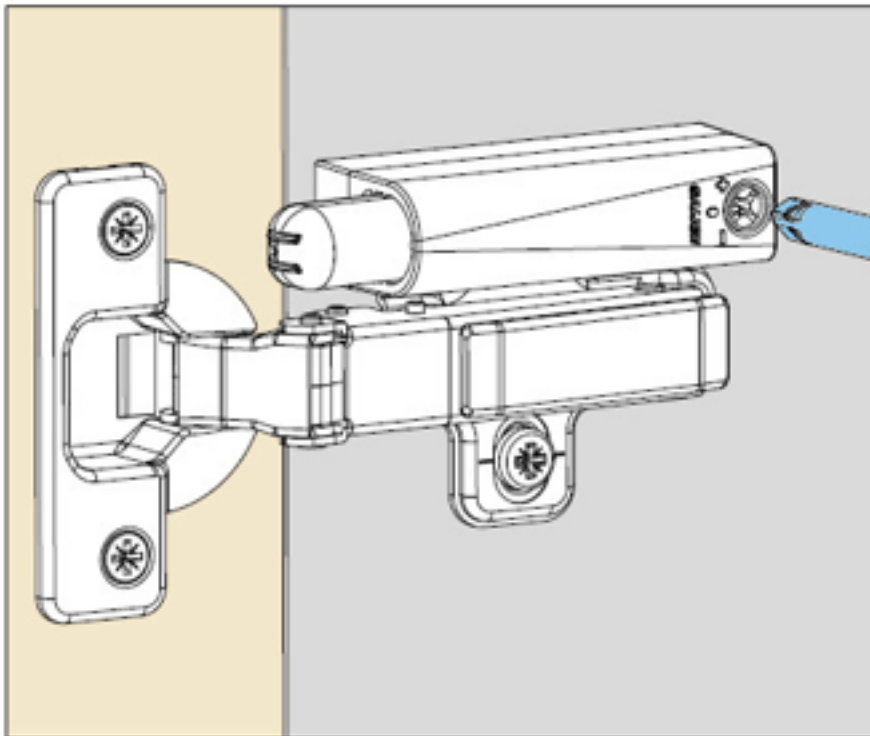


FIGURE 9

9

Drawer Removal and Installation

Installation of base cabinets is far easier with the drawers removed because of the weight reduction, access to internal fasteners and securing to the wall. Drawers are easily removed without tools.

Place both hands under the drawer and locate the clips, squeeze and lift the front of the drawer upwards. To re-install, extend the runners and place the drawer on the runners, then push the drawers closed. The runners should catch on their own, test the operation to make sure the latches connected. You can manually reach under and slide the runner to the front of the drawer if the drawer does not latch on its own.

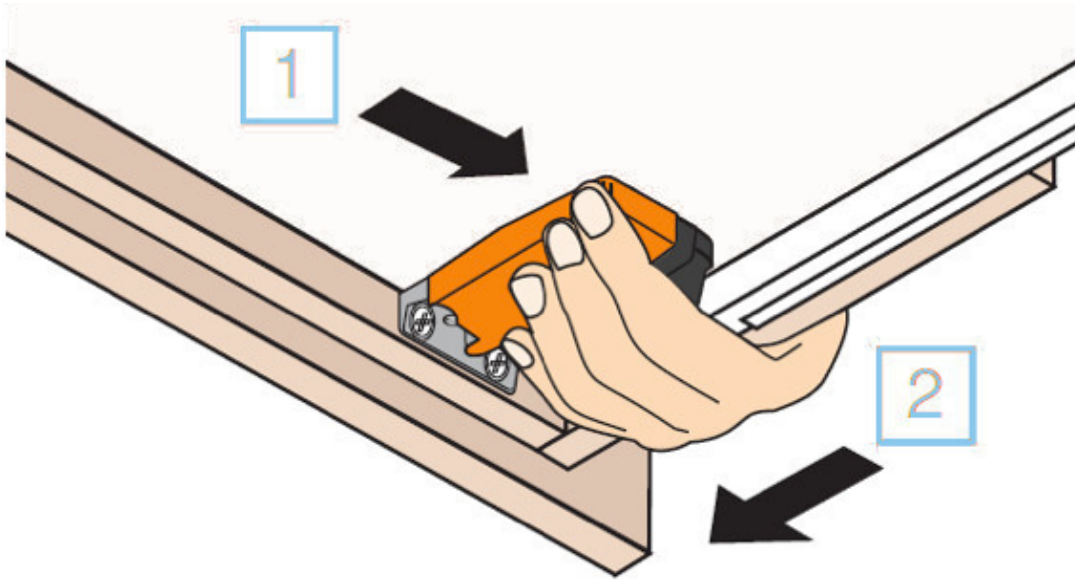


FIGURE 10

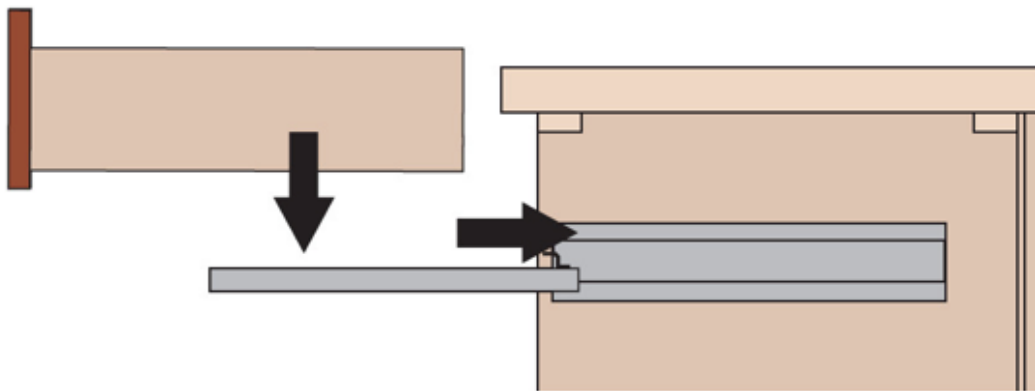


FIGURE 11

9

Drawer Adjustment - Left to Right

You can adjust each drawer left or right to help line up multiple drawers. Simply run your finger over the rollers on the underside of the cabinet. Do both sides at the same time in the same direction.

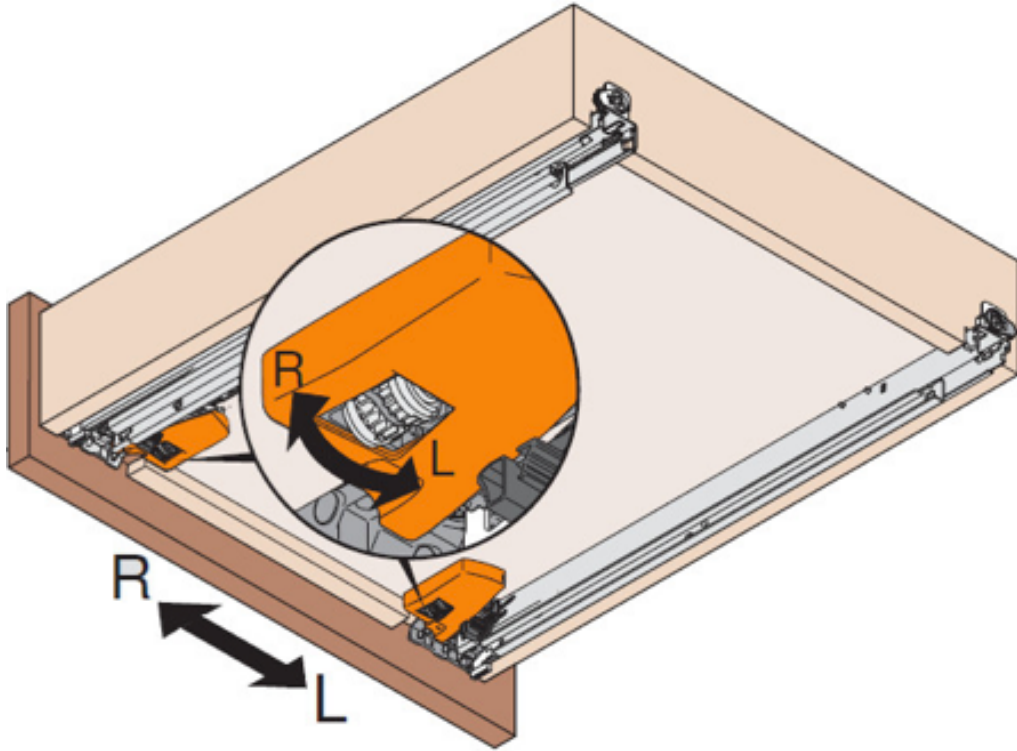


FIGURE 12

10

Leg Levelers Installation & Height Adjustment

All base cabinets have four adjustable leg levelers. To install, simply place the leg into the socket and press firmly into the base. Turn the feet clockwise to reduce height and counterclockwise to increase height.

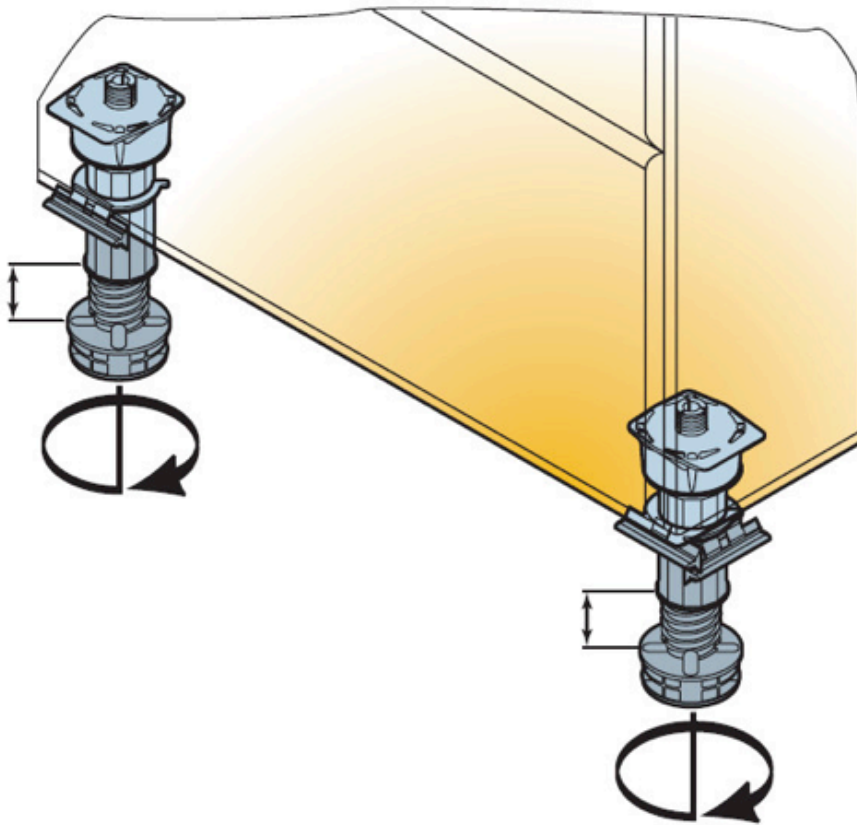


FIGURE 13

QUESTIONS?

PLEASE CONTACT

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