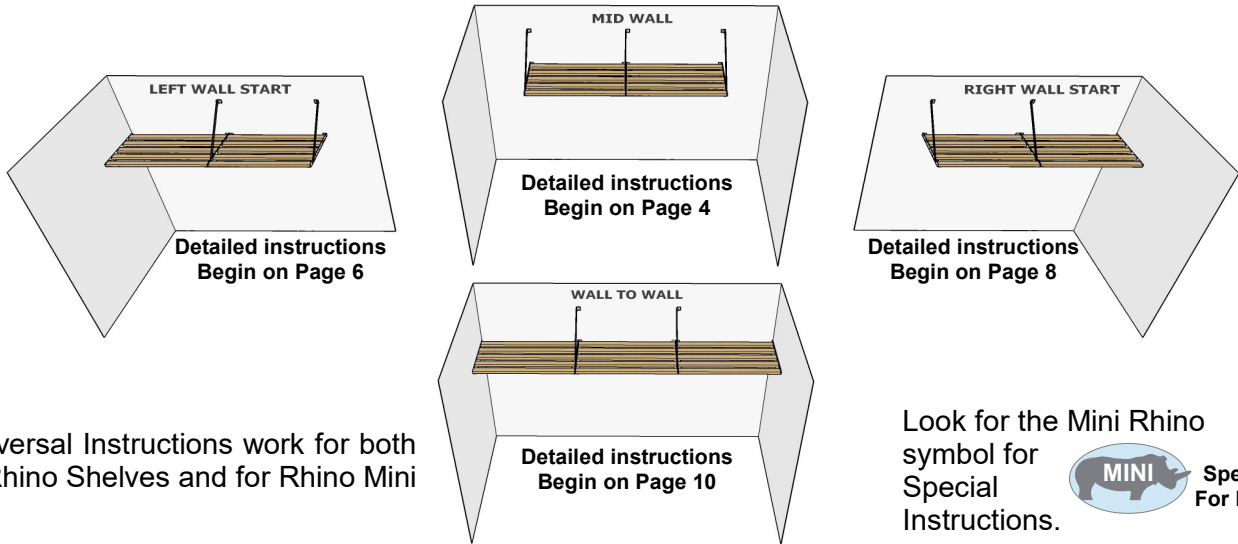




RHINO SHELF® UNIVERSAL KIT Installation Guide



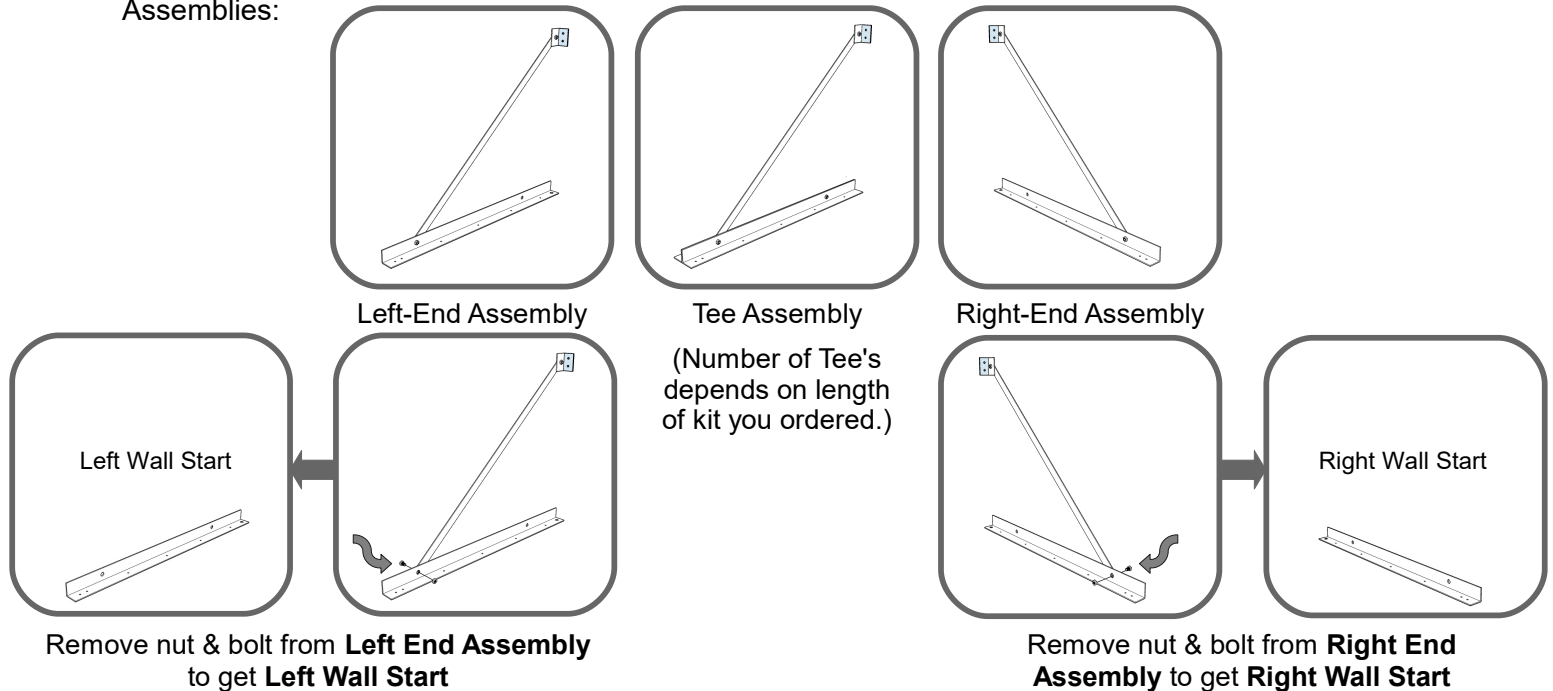
Your Rhino Shelf® Universal Shelf Kit can be installed in four different configurations:



These Universal Instructions work for both Full-Size Rhino Shelves and for Rhino Mini Shelves.

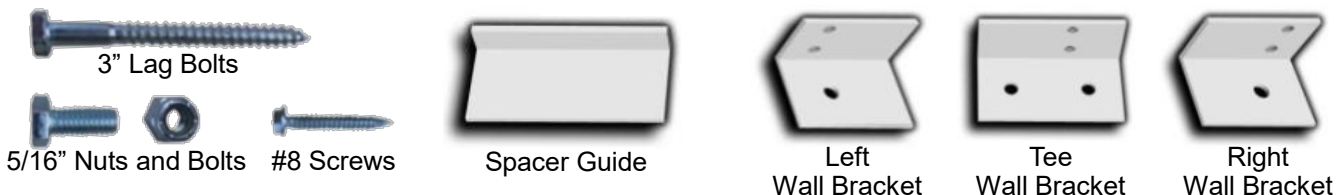
Each Universal Shelf Kit contains a Left-End Assembly and a Right-End Assembly. An 8-foot kit also contains one Tee Assembly. A 12-foot kit contains two Tee Assemblies, a 16-foot kit, three Tee Assemblies, etc. Four-foot kits do not require a Tee Assembly.

A Mid-Wall installation uses all of these assemblies. For a Left- or Right-Wall Start, modify the appropriate End Assembly as shown below. For a Wall-to-Wall installation, modify both End Assemblies:

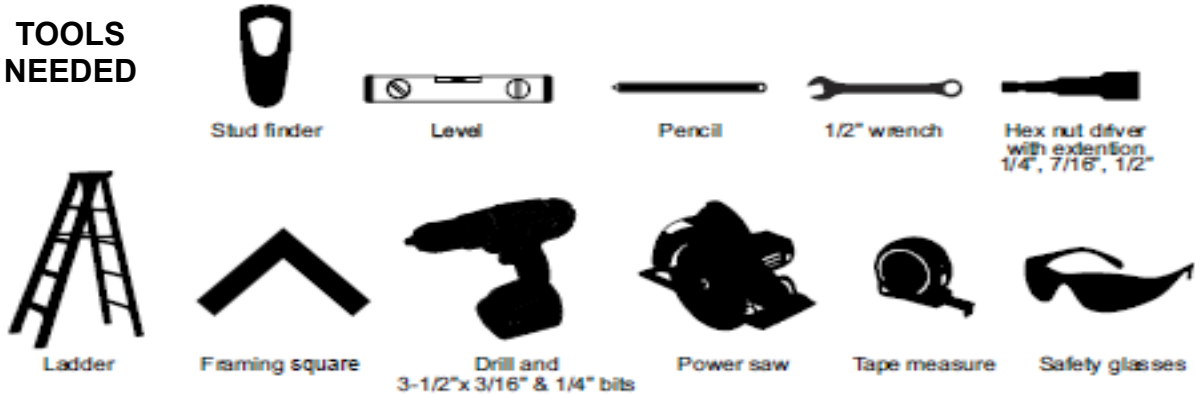


Contents of Kit: In addition to the Assemblies shown above, each Universal Shelf Kit contains sufficient fasteners for the length of shelves you ordered, a Spacer Guide, one Left and one Right Wall Bracket, and a Tee Wall Bracket for each Tee Assembly in your kit.

(All Parts and Assemblies have Labels)



TOOLS NEEDED



CAUTION

Safety Warnings & Installation Tips

CAUTION

It is important to read all instructions, tips, and warnings completely before beginning installation. Proper installation procedures must be followed as outlined in these instructions. Failure to do so could result in property damage or personal injury, or even death. Proper installation is the responsibility of the installer.

SAFETY:

Practice safety measures at all times during installation. Use proper safety equipment and tools for the assembly procedures to prevent personal injury.

Be aware of the mounting environment. When drilling into the mounting surface, always make sure that there are no electrical wires in the wall. Drilling into an electrical line may cause serious personal injury or death, or severe property damage.

Make sure there are no water or natural gas lines inside the wall where the kit is to be located. Drilling into a water or gas line may cause severe property damage or personal injury or death.

***RhinoShelf.com* does not warrant against damage caused by improper installation or the use of kits for purposes other than those for which they are designed, or damage caused by unauthorized attachments or modifications, and is not responsible for any damages, claims, demands, suits, actions or causes of actions of whatever kind resulting from, arising out of, or in any manner relating to any such installation, use, attachments or modifications.**

TIPS & Miscellaneous Information:

For structural considerations, it is important to maintain the individual shelf sections or bays at less than 54". Call Rhino Shelf Customer Service if you need to exceed this distance and we can give you methods for reinforcing your shelf.

It is important to pre-drill pilot holes for the lag bolts. Pre-drilling with 3/16" drill bit is very important to prevent splitting a stud and jeopardizing structural strength and capacity.

When pre-drilling, if a nail or screw is encountered, remove the object by trimming sheetrock or drywall from around nail or screw head with a utility knife, removing the object, and proceeding.

A Note on Shelf Height: 84" is the most commonly used shelf height. This height allows the doors of large vehicles to open without hitting the shelves, and plenty of headroom for most people to walk under the shelves. If you have lower than normal ceiling height or a need to store bigger objects on the shelf, you may want to decrease this number, or increase it if you have an exceptionally large vehicle or need more under-shelf clearance.

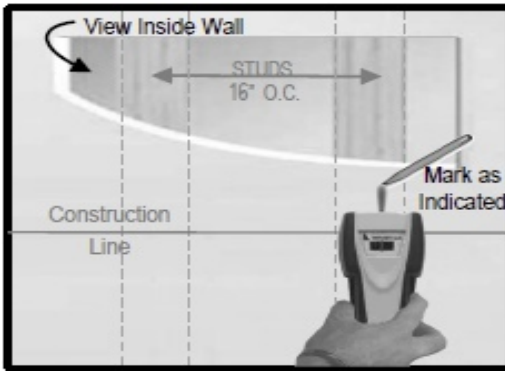
In any event, the full-size Rhino Shelves require 24" between the top of the shelf and the ceiling for clearance for the top bracket of the assemblies.

Rhino Mini Shelves require 12" clearance.

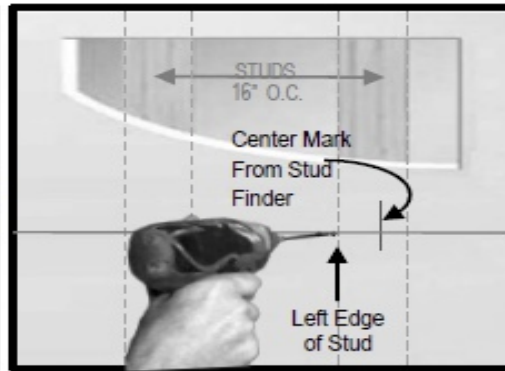


The first step in installing your shelves is to draw a level construction line on your garage wall at your chosen shelf height, and identify the studs you will attach to. Rhino Shelves are designed to be attached to studs that are closest to 48" apart. Standard construction locates studs every 16" or every 24", so the closest to 48" will be every third stud or every second stud, respectively. In most cases, your chosen studs will not be exactly 48" apart due to inconsistent stud placement – this is not a problem since you will be cutting your boards to fit the exact spacing in your wall (see Page 12).

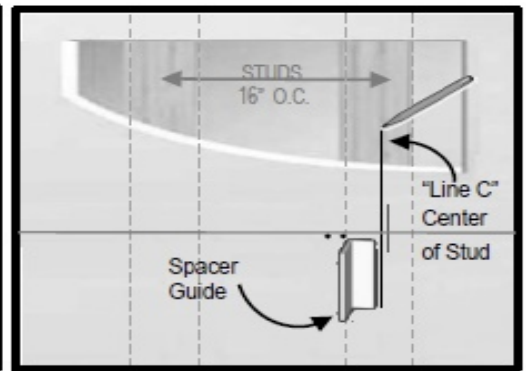
Finding the exact center of a stud. We recommend not simply relying on a stud finder to find the center of a stud. Here's how trim carpenters do it:



Using a stud finder, locate and mark the approximate center of the stud.
*NOTE: The shelf may fail to support the weight of items if not fastened to the center of the stud.



Starting about 3/4" from the center mark, drill multiple small holes until contact is made with left edge of stud. Use a 1/8" drill bit or smaller to minimize sheetrock damage. This checks the accuracy of the stud finder.

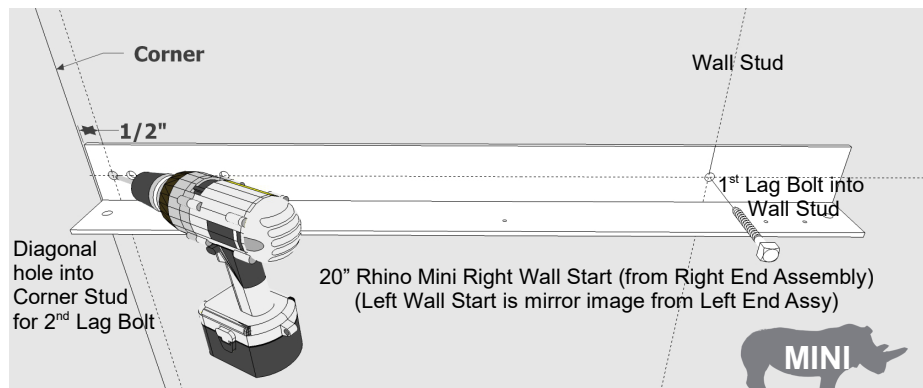


Use the included spacer guide to measure 3/4" from the left edge of the stud. Draw a line along the right edge of the spacer guide and extend it with a level. This should be the "exact" center of stud.

Special Instruction for Rhino Mini Shelf:

When installing the Mini Shelf in either Left or Right Wall Start or Wall to Wall configurations, you will find that there is almost always only one stud located within 20" of the corner. You will install one lag bolt as shown in the instructions, but it will be necessary to drive your second lag bolt diagonally back into the corner stud. To do this:

1. Drill hole for 1st lag bolt at shown in instructions.
2. Drill a new 1/4" hole approximately 1/2" from the corner end of the 20" Wall Start part.
3. Place and hold the part in the proper position on the wall.
4. Using a 3/16" drill bit, hold your drill at a 30 degree angle and drill through the new hole into the corner stud.
5. Fasten part to the wall using two lag bolts.



- For: MID-WALL Installation: Go to Page **4**
- LEFT-WALL START: Go to Page **6**
- RIGHT-WALL START: Go to Page **8**
- WALL-TO-WALL: Go to Page **10**

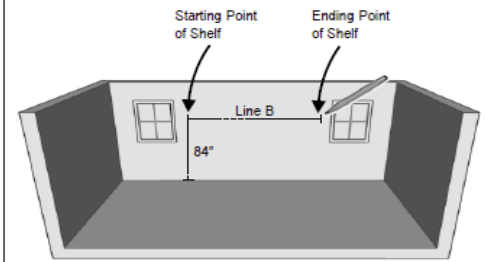


Make sure you've read Pages 1 -3 first.

LAY OUT SHELF – CONSTRUCTION LINES:

M1. To determine the starting point, find the first available stud from the left obstruction (e.g., window, stairs, garage door track, door, etc.). Measure 84" from the floor and make a small mark. This will be your starting point. From that point, draw a level and horizontal line from left to right the length of the kit you ordered. This line will be referred to as Line B. Locate the nearest stud to the end of this line. It may be left or right from this end point. This stud will be your stopping point.

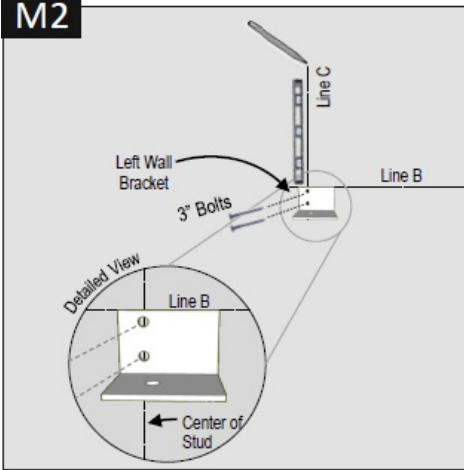
M1



**A minimum shelf height of 84" is recommended to clear vehicles and heads. However, the shelving kit height is at the discretion of the installer.*

INSTALL LEFT END ASSEMBLY:

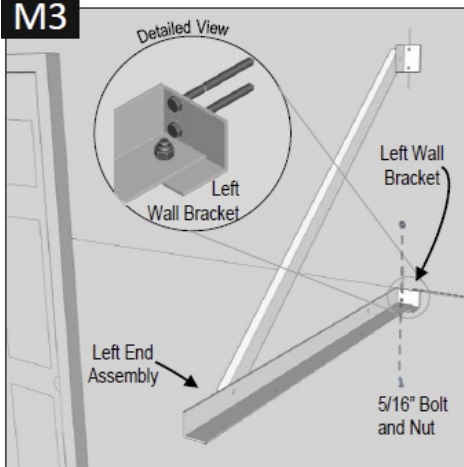
M2



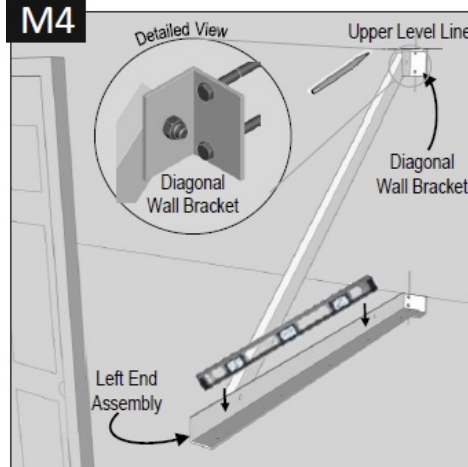
M2. ATTACH LEFT WALL BRACKET TO WALL. Locate and mark the center of the stud at your starting point (See "How to Locate the Center of Stud" on Page 2) with a 2" vertical mark, which will be referenced as Line C. Place the bottom of a 2' level on Line B, aligning with the edge of Line C. With level plumb, mark 2" vertical mark at top of the level. Place the top of the Left Wall Bracket on horizontal Line B and align the center of the two holes on vertical Line C. Holding the Bracket in position, drill pilot hole in top hole using 3/16" drill bit. Use a 7/16" socket or nut driver to attach the Bracket to wall with 3" lag bolt. Tighten until snug but movable. Ensure Bracket is level and drill second pilot hole and attach with a second 3" lag bolt. Tighten both 3" bolts.

M3. ATTACH LEFT END ASSEMBLY TO LEFT WALL BRACKET. Slide the pre-assembled Left End Assembly under the lower lag bolt head on Left Wall Bracket. This will temporarily hold the Assembly in place. Insert 5/16" bolt through bottom of Left Wall Bracket and the Assembly, then hand tighten with included nut. Check to make sure the Left End Assembly is perpendicular to wall with a framing square. Tighten nut and bolt with 1/2" wrench and socket or wrench and nut driver.

M3

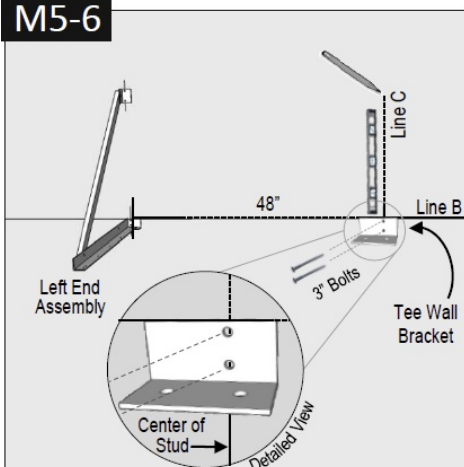


M4



M4. ATTACH DIAGONAL WALL BRACKET TO WALL. Place 2' level on the assembly and push the diagonal to the wall so that the top wall bracket rests flat on the wall, aligning holes to upper vertical Line C. Check level and draw 2" horizontal level line at the top of the bracket. Holding the top bracket in position, drill the first pilot hole with a 3/16" drill bit. Use 7/16" socket wrench or nut driver to attach the top bracket to the wall with 3" lag bolt. Make sure that the top bracket is level and pre-drill pilot hole and attach second lag bolt. Use a 1/2" wrench and socket or wrench and nut driver to tighten all the 5/16" bolts and nuts on the Left End Assembly.

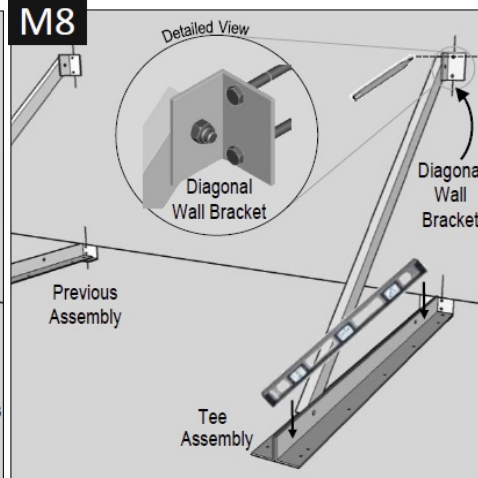
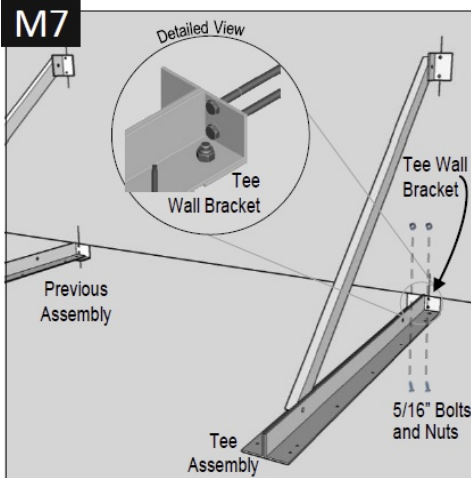
M5-6



INSTALL TEE ASSEMBLY(IES): – (If your Kit is the 4' Model, skip to Step M 9)

M5. MARK LOCATION OF TEE ASSEMBLY ON WALL. Along Line B find the first available stud nearest to 48" from the previously installed assembly. Locate the center of the stud and mark with a 2" vertical mark (Line C).

M6. ATTACH TEE WALL BRACKET TO WALL. Place bottom of 2' level on Line B aligning with the edge of Line C. Make a plumb (vertical) mark at top of the level. Place the top of the Tee Wall Bracket on horizontal Line B and align the center of the two holes on vertical Line C. Holding the Tee Wall Bracket in position, drill pilot hole in top hole using 3/16" drill bit. Use a 7/16" socket wrench or nut driver to attach Tee Wall Bracket to wall with 3" lag bolt. Tighten until snug but movable. Ensure Tee Wall Bracket is level, drill second pilot hole, and attach second 3" lag bolt. Tighten both 3" bolts.



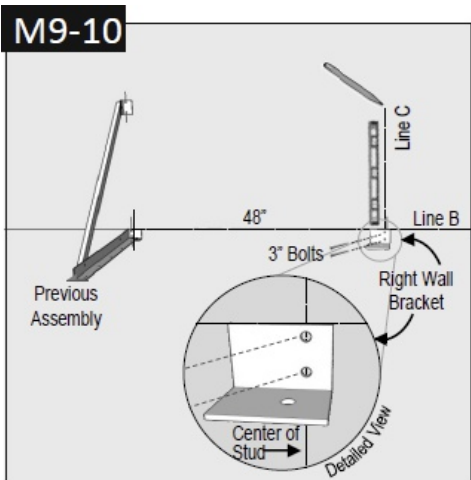
M7. FASTEN TEE ASSEMBLY TO TEE WALL BRACKET. Slide the pre-assembled Tee Assembly under the Tee Wall Bracket's lower lag bolt head. This will temporarily hold the Assembly in place. Insert 5/16" bolts through bottom of the Tee Wall Bracket and the Assembly and hand tighten. Check to make sure the Tee Assembly is perpendicular to the wall with a framing square. Tighten bolts with 1/2" wrench and socket or wrench and nut driver.

M8. ATTACH TOP OF TEE ASSEMBLY TO WALL. Place 2' level on the Assembly and push the top of the diagonal to the wall so that the top wall bracket rests flat on the wall, aligning holes to upper vertical Line C. Check level and draw 2" horizontal level line at the top of the bracket.

Holding the top bracket in position, drill the first pilot hole with a 3/16" drill bit. Use 7/16" socket wrench or nut driver to attach the top bracket to the wall with 3" lag bolt. Make sure that the top bracket is level and pre-drill pilot hole and attach second lag bolt. Use a 1/2" wrench and socket or wrench and nut driver to tighten all the 5/16" bolts and nuts on the Tee Assembly.

***If your Kit is an 8' Model, proceed to step M9;
if not, repeat Steps M5 – M8 until all of the
pre-assembled Tee Assemblies are installed.***

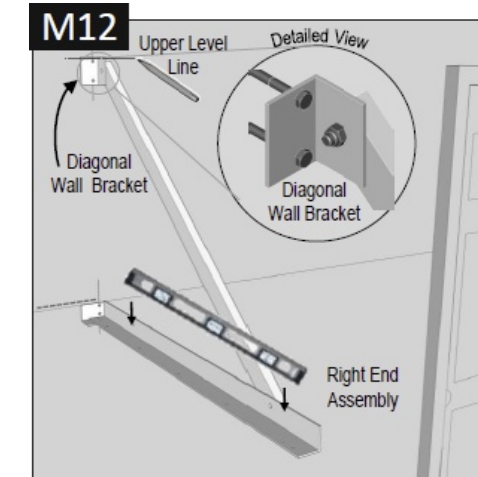
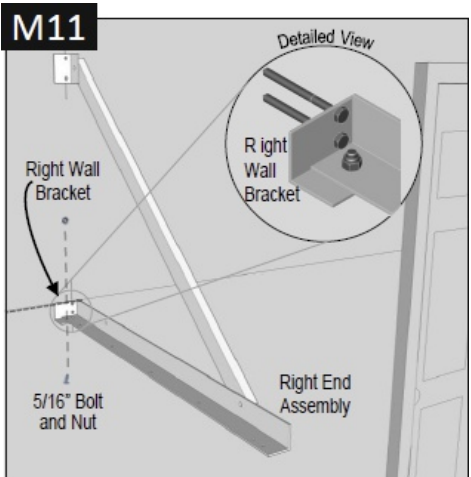
INSTALL RIGHT END ASSEMBLY:



M9. MARK LOCATION OF RIGHT END ASSEMBLY ON WALL. Along Line B, find the first available stud nearest to 48" from the previously installed assembly. This is your stopping point for the shelf. Locate the center of stud and mark with a 2" vertical mark (Line C).

M10. ATTACH RIGHT WALL BRACKET (PART #7) TO WALL. Place bottom of 2' level on Line B aligning with the edge of Line C. With level plumb, mark 2" vertical mark at top of the level. Place the top of the Right Wall Bracket on horizontal Line B and align the center of the two holes on vertical Line C. Holding the Right Wall Bracket in position, drill pilot hole in top hole using 3/16" drill bit. Use a 7/16" socket or nut driver to attach Right Wall Bracket to wall with 3" Lag bolt. Tighten until snug but movable. Ensure Right Wall Bracket is level. Drill second pilot hole and attach second 3" lag bolt. Tighten both bolts.

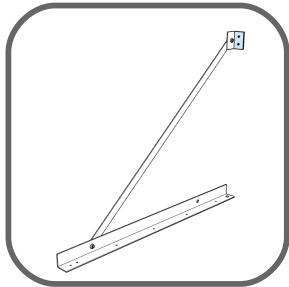
M11. FASTEN RIGHT END ASSEMBLY TO RIGHT WALL BRACKET. Slide the pre-assembled Right End Assembly under the Right Wall Bracket's lower lag bolt. This will temporarily hold the Assembly in place. Insert 5/16" bolt through bottom of the Right Wall Bracket and the Assembly and hand tighten with included nut. Check to make sure the Right End Assembly is perpendicular to the wall with a framing square. Tighten bolt with 1/2" wrench and socket or wrench and nut driver.



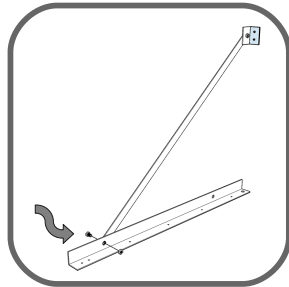
M12. ATTACH DIAGONAL WALL BRACKET TO WALL. Place 2' level on the assembly and push the diagonal to the wall so that the top wall bracket rests flat on the wall, aligning holes to upper vertical Line C. Check level and draw 2" horizontal level line at the top of the bracket. Holding the top bracket in position, drill the first pilot hole with a 3/16" drill bit. Use 7/16" socket wrench or nut driver to attach the top bracket to the wall with 3" lag bolt. Make sure that the top bracket is level and pre-drill pilot hole and attach second lag bolt. Use a 1/2" wrench and socket or wrench and nut driver to tighten all the 5/16" bolts and nuts on the Right End Assembly.

Go to Page 12, "Cut and Install 2x4 Boards" to complete your installation.

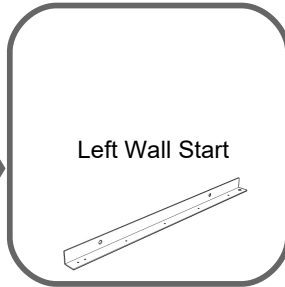
Make sure you've read Pages 1 -3 first.



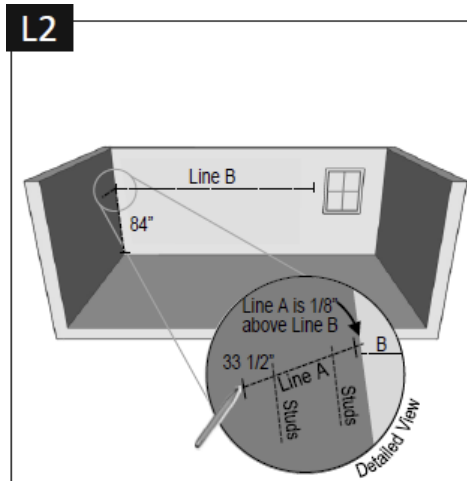
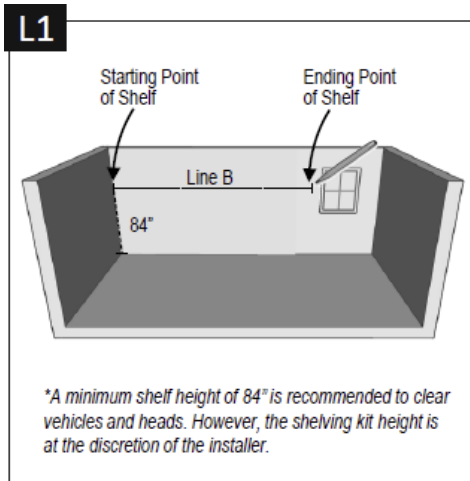
Left-End Assembly



Remove nut & bolt from **Left End Assembly** to get **Left Wall Start**



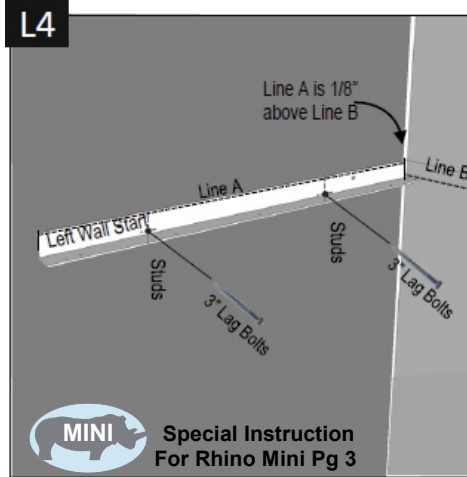
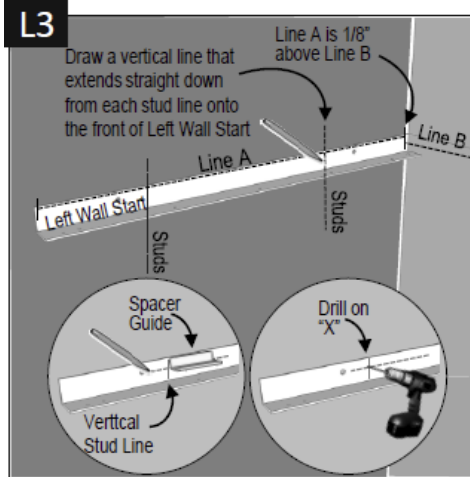
FIRST, DISASSEMBLE LEFT END ASSEMBLY TO OBTAIN LEFT WALL START. Remove the diagonal support arm from the Left End Assembly by removing the 5/16" nut and bolt connecting the diagonal to the 33 1/2" angled component. This give you the Left Wall Start component. Set aside.



INSTALL LEFT WALL START

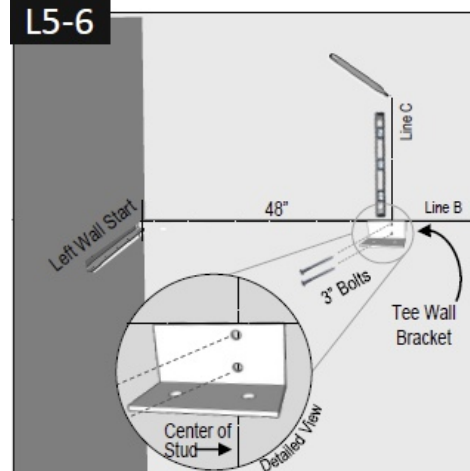
- L1. MARK LOCATION OF SHELF ON FRONT WALL.** To determine the starting point, in the left corner of the wall, measure 84" from the floor and make a small mark. This will be your starting point. From that point, draw a level and horizontal line the length of the kit you ordered. This line will be referred to as Line B. For example, if you purchased a 12' kit, from the starting point you would draw a 12' horizontal level line. Locate the nearest stud to the end of this line. It may be to the left or right of this point. This stud will be your stopping point.
- L2. MARK LOCATION OF LEFT WALL START ON LEFT WALL.** Starting from left corner, referencing Line B, make a small horizontal mark on left wall 1/8" above Line B. From this mark, use a level to draw a 33 1/2" horizontal line onto the left wall. This is Line A. Locate and mark the center of each stud along Line A. See "How To Locate Center of Stud" on Page 2.

FOR RHINO MINI L3 AND L4 SEE "SPECIAL INSTRUCTIONS" BOTTOM OF PAGE 3



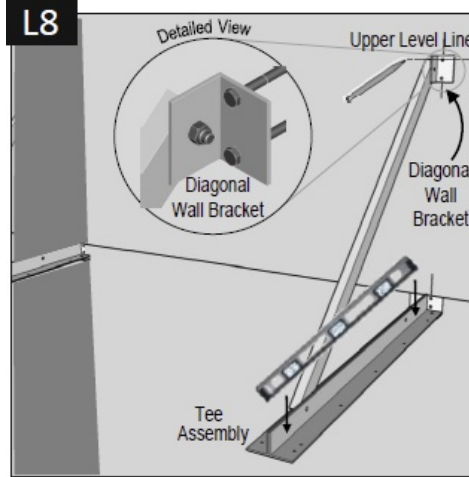
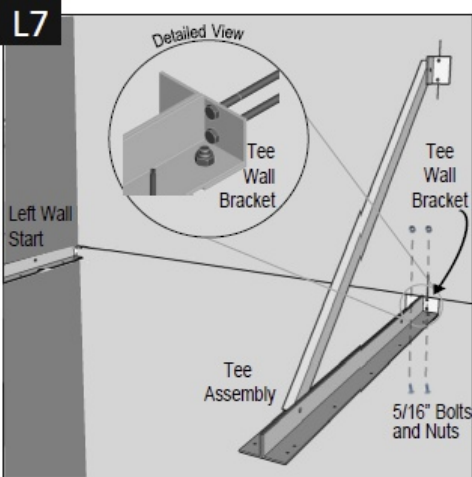
- L3. DRILL HOLES IN LEFT WALL START.** Align the top of the Left Wall Start with Line A making sure the side with only two holes is against the wall. Place it 1/8" from corner. Holding the part in position, draw a vertical line that extends straight down from each stud line onto the front of the part. Place the Left Wall Start on a scrap piece of wood. Use the 3/4" side of the Spacer Bar to draw a perpendicular line across each vertical line on the front of the part. Drill holes through front of the Left Wall Start on each "x" using a 1/4" drill bit.
- L4. FASTEN LEFT WALL START TO WALL.** Align the Left Wall Start's top edge with Line A, placing it 1/8" from corner. Make sure that the new 1/4" holes on the front of the Left Wall Start are aligned with the center of stud lines. Holding the part in position, use a 3/16" bit to pre-drill pilot hole through left 1/4" hole. Use a 7/16" socket wrench or nut driver to attach the Left Wall Start to the wall with 3" lag bolt. Tighten until snug but movable.

Ensure the part is level and that its top edge is aligned with Line A. Drill second pilot hole through right 1/4" hole and attach second 3" lag bolt. Level the part and tighten both 3" bolts.



INSTALL TEE ASSEMBLY(IES) - IF YOUR KIT IS THE 4' MODEL, SKIP TO STEP L9

- L5. MARK LOCATION OF TEE ASSEMBLY ON WALL.** Along Line B find the first available stud nearest 48" from the corner (or previously installed assembly). Locate the center of the stud and mark with a 2" vertical mark (Line C).
- L6. ATTACH TEE WALL BRACKET TO WALL.** Place bottom of 2' level on Line B aligning with the edge of Line C. Make a 2" plumb (vertical) mark at top of the level. Place the top of the Tee Wall Bracket on horizontal Line B and align the center of the two holes on vertical Line C. Holding the Tee Wall Bracket in position, drill pilot hole in top hole using 3/16" drill bit. Use a 7/16" socket wrench or nut driver to attach the Tee Wall Bracket to wall with 3" lag bolt. Tighten until snug but movable. Ensure the Tee Wall Bracket is level, drill second pilot hole and attach second 3" lag bolt. Tighten both lag bolts.

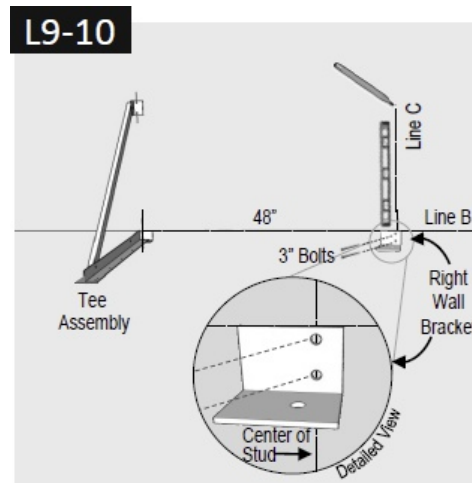


L7. FASTEN TEE ASSEMBLY TO TEE WALL BRACKET. Slide the pre-assembled Tee assembly under Tee Wall Bracket's lower lag bolt head. This will temporarily hold the Assembly in place. Insert 5/16" bolts through bottom of the Tee Wall Bracket the Tee Assembly and hand tighten. Check to make sure the Tee Assembly is perpendicular to wall with a framing square. Tighten bolts with 1/2" wrench and socket or wrench and nut driver.

L8. ATTACH TOP OF TEE ASSEMBLY TO WALL. Place 2' level on the Assembly and push the top of the diagonal to the wall so that the top wall bracket rests flat on the wall, aligning holes to upper vertical Line C. Check level and draw 2" horizontal level line at the top of the bracket.

**If your Kit is an 8' Model, proceed to step L9;
if not, repeat Steps L5 – L8 until all of the pre-assembled Tee Assemblies are installed.**

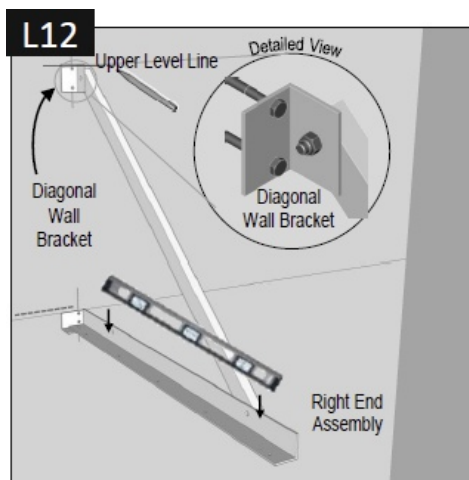
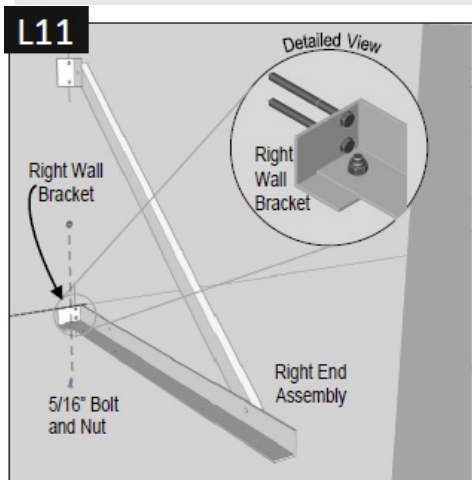
INSTALL RIGHT END ASSEMBLY:



L9. MARK LOCATION OF RIGHT END ASSEMBLY ON WALL. Along Line B, find the first available stud nearest to 48" from the previously installed assembly. This is your stopping point for the shelf. Locate the center of stud and mark with a 2" vertical mark (Line C).

L10. ATTACH RIGHT WALL BRACKET TO WALL. Place bottom of 2' level on Line B aligning with the edge of Line C. With level plumb, mark 2" vertical mark at top of the level. Place the top of the Right Wall Bracket on horizontal Line B and align the center of the two holes on vertical Line C. Holding the Right Wall Bracket in position, drill pilot hole in top hole using 3/16" drill bit. Use a 7/16" socket or nut driver to attach Right Wall Bracket to wall with 3" Lag bolt. Tighten until snug but movable. Ensure Right Wall Bracket is level. Drill second pilot hole and attach second 3" lag bolt. Tighten both bolts.

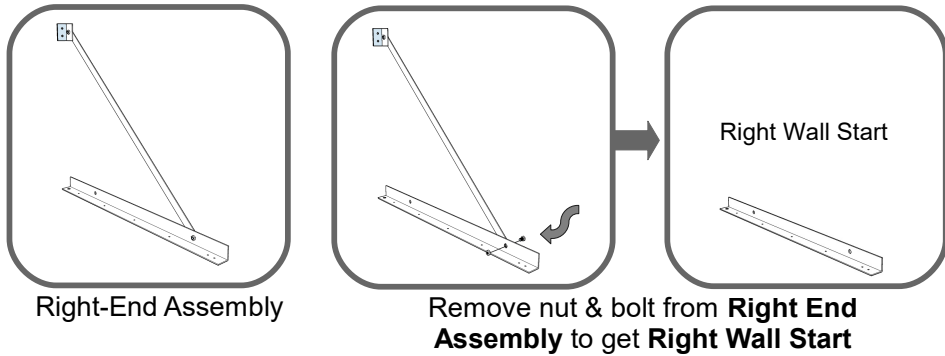
L11. FASTEN RIGHT END ASSEMBLY TO RIGHT WALL BRACKET. Slide the pre-assembled Right End Assembly under the Right Wall Bracket's lower lag bolt. This will temporarily hold the Assembly in place. Insert 5/16" bolt through bottom of the Right Wall Bracket and the Assembly and hand tighten with included nut. Check to make sure the Right End Assembly is perpendicular to the wall with a framing square. Tighten bolt with 1/2" wrench and socket or wrench and nut driver.



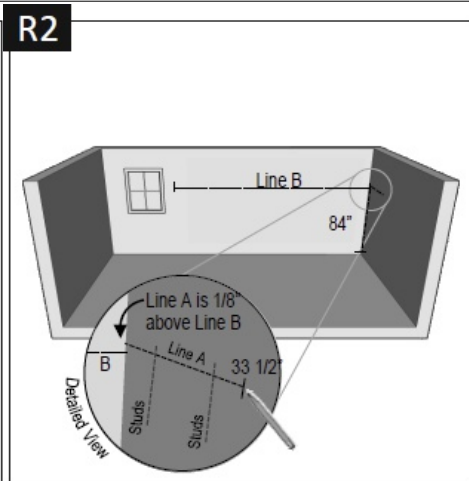
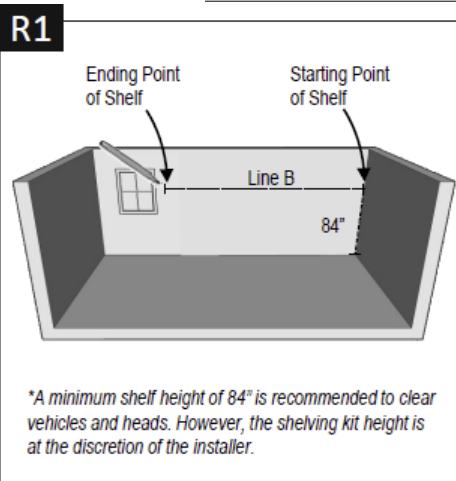
L12. ATTACH DIAGONAL WALL BRACKET TO WALL. Place 2' level on the assembly and push the diagonal to the wall so that the top wall bracket rests flat on the wall, aligning holes to upper vertical Line C. Check level and draw 2" horizontal level line at the top of the bracket. Holding the top bracket in position, drill the first pilot hole with a 3/16" drill bit. Use 7/16" socket wrench or nut driver to attach the top bracket to the wall with 3" lag bolt. Make sure that the top bracket is level and pre-drill pilot hole and attach second lag bolt. Use a 1/2" wrench and socket or wrench and nut driver to tighten all the 5/16" bolts and nuts on the Right End Assembly.

Go to Page 12, "Cut and Install 2x4 Boards" to complete your installation.

Make sure you've read Pages 1 -3 first.



FIRST, DISASSEMBLE RIGHT END ASSEMBLY TO OBTAIN RIGHT WALL START. Remove the diagonal support arm from the Right End Assembly by removing the 5/16" nut and bolt connecting the diagonal to the 33 1/2" angled component. This give you the Right Wall Start component. Set aside.

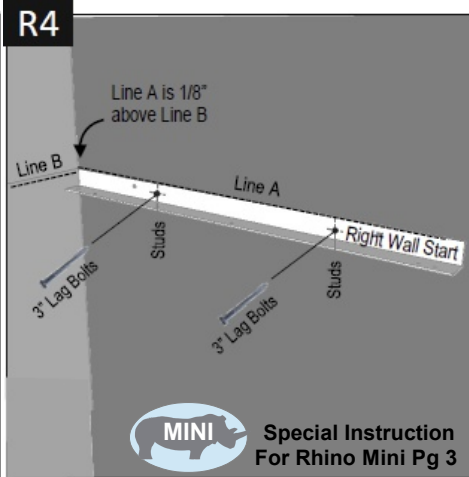
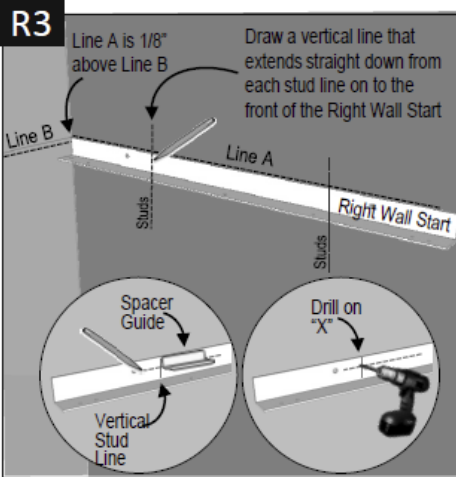


INSTALL RIGHT WALL START

R1. MARK LOCATION OF SHELF ON FRONT WALL. To determine the starting point, in the right corner of the wall, measure 84" from the floor and make a small mark. This will be your starting point. From that point, draw a level and horizontal line the length of the kit you ordered. This line will be referred to as Line B. For example, if you purchased a 12' kit, from the starting point you would draw a 12' horizontal level line. Locate the nearest stud to the end of this line. It may be to the left or right of this point. This stud will be your stopping point.

R2. MARK LOCATION OF RIGHT WALL START ON RIGHT WALL. Starting from right corner, referencing Line B, make a small horizontal mark on right wall 1/8" above Line B. From this mark, use a level to draw a 33 1/2" horizontal line onto the right wall. This is Line A. Locate and mark the center of each stud along Line A. See "How To Locate Center of Stud" on Page 2.

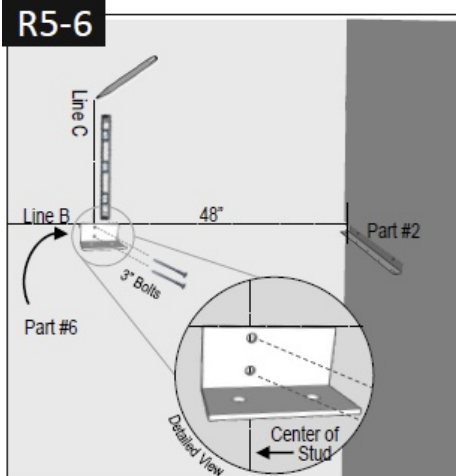
FOR RHINO MINI R3 AND R4 SEE "SPECIAL INSTRUCTIONS" BOTTOM OF PAGE 3



R3. DRILL HOLES IN RIGHT WALL START. Align the top of the Right Wall Start with Line A making sure the side with only two holes is against the wall. Place it 1/8" from corner. Holding the part in position, draw a vertical line that extends straight down from each stud line onto the front of the part. Place the Right Wall Start on a scrap piece of wood. Use the 3/4" side of the Spacer Bar to draw a perpendicular line across each vertical line on the front of the part. Drill holes through front of the Right Wall Start on each "x" using a 1/4" drill bit.

R4. FASTEN RIGHT WALL START TO WALL. Align the Right Wall Start's top edge with Line A, placing it 1/8" from corner. Make sure that the new 1/4" holes on the front of the Right Wall Start are aligned with the center of stud lines. Holding the part in position, use a 3/16" bit to pre-drill pilot hole through right 1/4" hole. Use a 7/16" socket

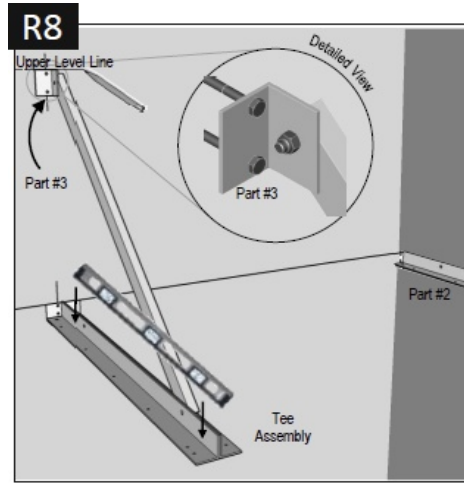
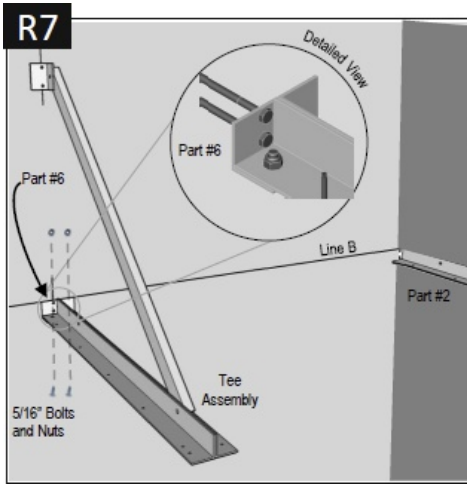
wrench or nut driver to attach the Right Wall Start to the wall with 3" lag bolt. Tighten until snug but movable. Ensure the part is level and that its top edge is aligned with Line A. Drill second pilot hole through right 1/4" hole and attach second 3" lag bolt. Level the part and tighten both 3" bolts.



INSTALL TEE ASSEMBLY(IES) - IF YOUR KIT IS THE 4' MODEL, SKIP TO STEP R9

R5. MARK LOCATION OF TEE ASSEMBLY ON WALL. Along Line B find the first available stud nearest 48" from the corner (or previously installed assembly). Locate the center of the stud and mark with a 2" vertical mark (Line C).

R6. ATTACH TEE WALL BRACKET TO WALL. Place bottom of 2' level on Line B aligning with the edge of Line C. Make a 2" plumb (vertical) mark at top of the level. Place the top of the Tee Wall Bracket on horizontal Line B and align the center of the two holes on vertical Line C. Holding the Tee Wall Bracket in position, drill pilot hole in top hole using 3/16" drill bit. Use a 7/16" socket wrench or nut driver to attach the Tee Wall Bracket to wall with 3" lag bolt. Tighten until snug but movable. Ensure the Tee Wall Bracket is level, drill second pilot hole and attach second 3" lag bolt. Tighten both lag bolts.

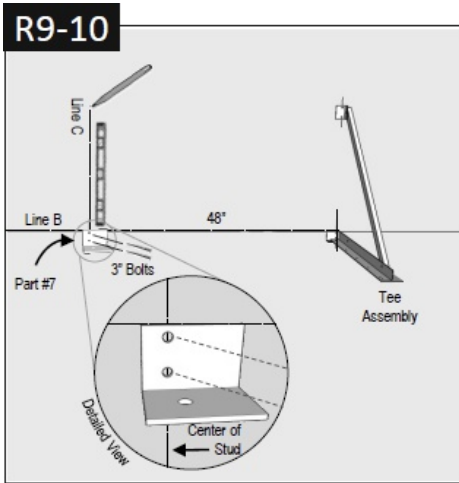


R7. FASTEN TEE ASSEMBLY TO TEE WALL BRACKET. Slide the pre-assembled Tee assembly under Tee Wall Bracket's lower lag bolt head. This will temporarily hold the Assembly in place. Insert 5/16" bolts through bottom of the Tee Wall Bracket the Tee Assembly and hand tighten. Check to make sure the Tee Assembly is perpendicular to wall with a framing square. Tighten bolts with 1/2" wrench and socket or wrench and nut driver.

R8. ATTACH TOP OF TEE ASSEMBLY TO WALL. Place 2' level on the Assembly and push the diagonal of the level on the wall so that the top wall bracket rests flat on the wall, aligning holes to upper vertical Line C. Check level and draw 2" horizontal level line at the top of the bracket.

***If your Kit is an 8' Model, proceed to step R9;
if not, repeat Steps R5 – R8 until all of the pre-assembled Tee Assemblies are installed.***

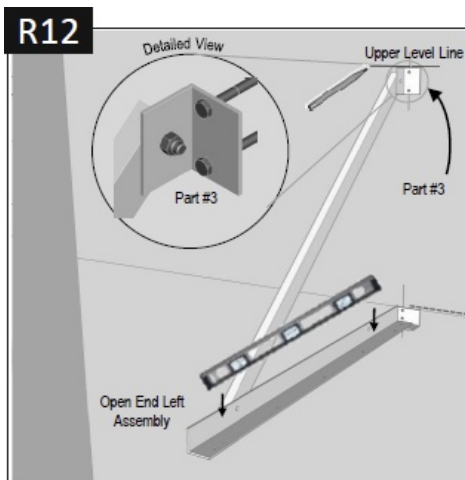
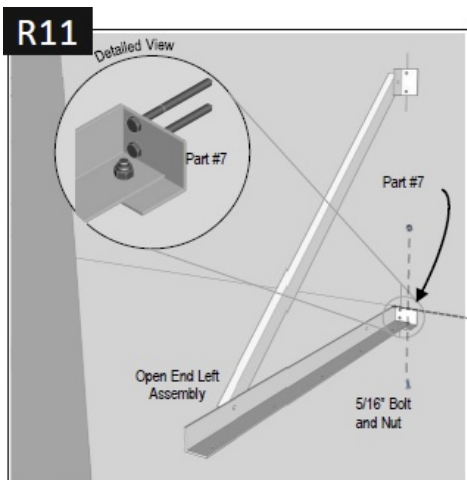
INSTALL LEFT END ASSEMBLY:



R9. MARK LOCATION OF LEFT END ASSEMBLY ON WALL. Along Line B, find the first available stud nearest to 48" from the previously installed assembly. This is your stopping point for the shelf. Locate the center of stud and mark with a 2" vertical mark (Line C).

R10. ATTACH LEFT WALL BRACKET TO WALL. Place bottom of 2' level on Line B aligning with the edge of Line C. With level plumb, mark 2" vertical mark at top of the level. Place the top of the Left Wall Bracket on horizontal Line B and align the center of the two holes on vertical Line C. Holding the Left Wall Bracket in position, drill pilot hole in top hole using 3/16" drill bit. Use a 7/16" socket or nut driver to attach Left Wall Bracket to wall with 3" Lag bolt. Tighten until snug but movable. Ensure Left Wall Bracket is level. Drill second pilot hole and attach second 3" lag bolt. Tighten both bolts.

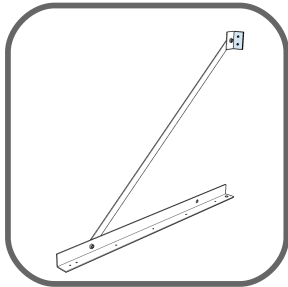
R11. FASTEN LEFT END ASSEMBLY TO LEFT WALL BRACKET. Slide the pre-assembled Left End Assembly under the Left Wall Bracket's lower lag bolt. This will temporarily hold the Assembly in place. Insert 5/16" bolt through bottom of the Left Wall Bracket and the Assembly and hand tighten. Check to make sure the Left End Assembly is perpendicular to the wall with a framing square. Tighten bolt with 1/2" wrench and socket or wrench and nut driver.



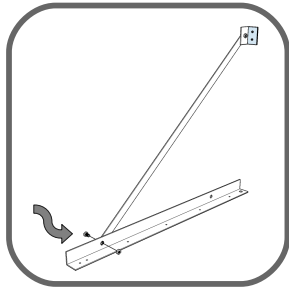
R12. ATTACH DIAGONAL WALL BRACKET TO WALL. Place 2' level on the assembly and push the diagonal to the wall so that the top wall bracket rests flat on the wall, aligning holes to upper vertical Line C. Check level and draw 2" horizontal level line at the top of the bracket. Holding the top bracket in position, drill the first pilot hole with a 3/16" drill bit. Use 7/16" socket wrench or nut driver to attach the top bracket to the wall with 3" lag bolt. Make sure that the top bracket is level and pre-drill pilot hole and attach second lag bolt. Use a 1/2" wrench and socket or wrench and nut driver to tighten all the 5/16" bolts and nuts on the Left End Assembly.

Go to Page 12, "Cut and Install 2x4 Boards" to complete your installation.

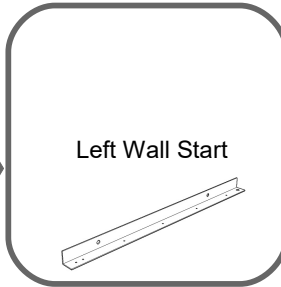
Make sure you've read Pages 1 -3 first.



Left-End Assembly



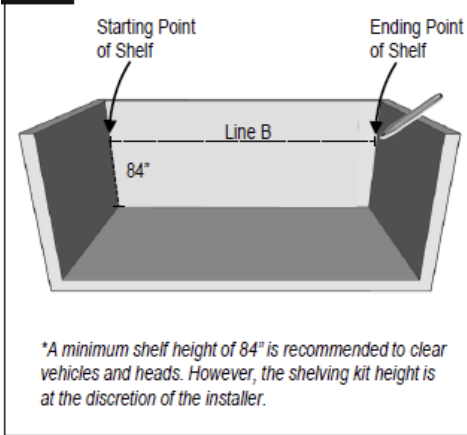
Remove nut & bolt from **Left End Assembly** to get **Left Wall Start**



FIRST, DISASSEMBLE LEFT END ASSEMBLY TO OBTAIN LEFT WALL START. Remove the diagonal support arm from the Left End Assembly by removing the 5/16" nut and bolt connecting the diagonal to the 33 1/2" angled component. This give you the Left Wall Start component. Set aside.

DO THE SAME THING TO THE RIGHT END ASSEMBLY TO OBTAIN RIGHT WALL START. Save this piece for later. You will not be using the diagonals you have removed.

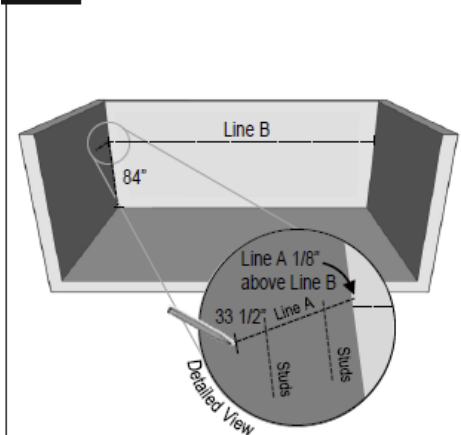
W1



*A minimum shelf height of 84" is recommended to clear vehicles and heads. However, the shelving kit height is at the discretion of the installer.

FOR RHINO MINI M3 AND M4 SEE "SPECIAL INSTRUCTIONS" BOTTOM OF PAGE 3

W2

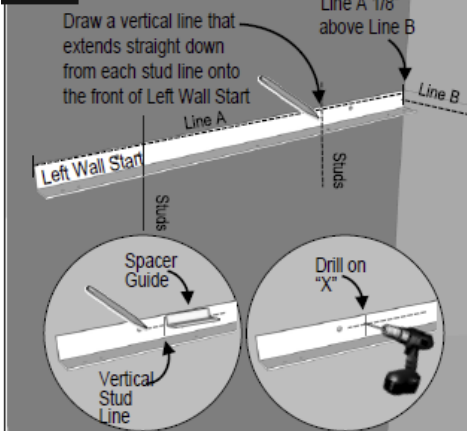


INSTALL LEFT WALL START

W1. MARK LOCATION OF SHELF ON FRONT WALL. To determine the starting point, in the left corner of the wall, measure 84" from the floor and make a small mark. This will be your starting point. From that point, draw a level and horizontal line the length of the kit you ordered. This line will be referred to as Line B. For example, if you purchased a 12' kit, from the starting point you would draw a 12' horizontal level line. Locate the nearest stud to the end of this line. It may be to the left or right of this point. This stud will be your stopping point.

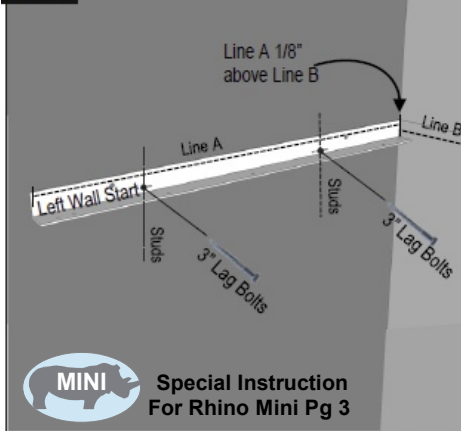
W2. MARK LOCATION OF LEFT WALL START ON LEFT WALL. Starting from left corner, referencing Line B, make a small horizontal mark on left wall 1/8" above Line B. From this mark, use a level to draw a 33 1/2" horizontal line onto the left wall. This is Line A. Locate and mark the center of each stud along Line A. See "How To Locate Center of Stud" on Page 2.

W3



W3. DRILL HOLES IN LEFT WALL START. Align the top of the Left Wall Start with Line A making sure the side with only two holes is against the wall. Place it 1/8" from corner. Holding the part in position, draw a vertical line that extends straight down from each stud line onto the front of the part. Place the Left Wall Start on a scrap piece of wood. Use the 3/4" side of the Spacer Bar to draw a perpendicular line across each vertical line on the front of the part. Drill holes through front of the Left Wall Start on each "x" using a 1/4" drill bit.

W4

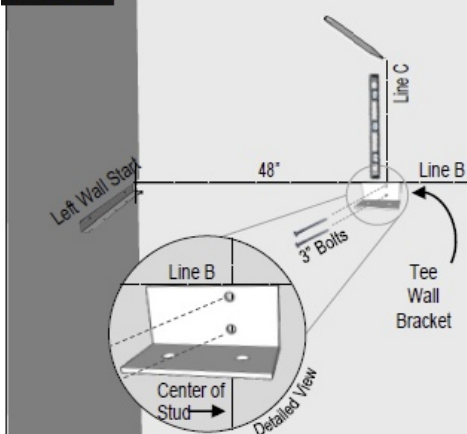


MINI Special Instruction For Rhino Mini Pg 3

W4. FASTEN LEFT WALL START TO WALL. Align the Left Wall Start's top edge with Line A, placing it 1/8" from corner. Make sure that the new 1/4" holes on the front of the Left Wall Start are aligned with the center of stud lines. Holding the part in position, use a 3/16" bit to pre-drill pilot hole through left 1/4" hole. Use a 7/16" socket wrench or nut driver to attach the Left Wall Start to the wall with 3" lag bolt. Tighten until snug but movable.

Ensure the part is level and that its top edge is aligned with Line A. Drill second pilot hole through right 1/4" hole and attach second 3" lag bolt. Level the part and tighten both 3" bolts.

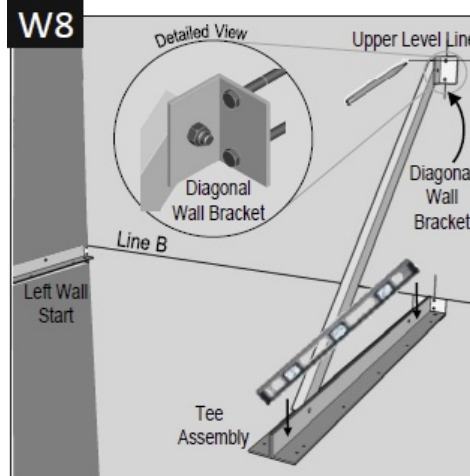
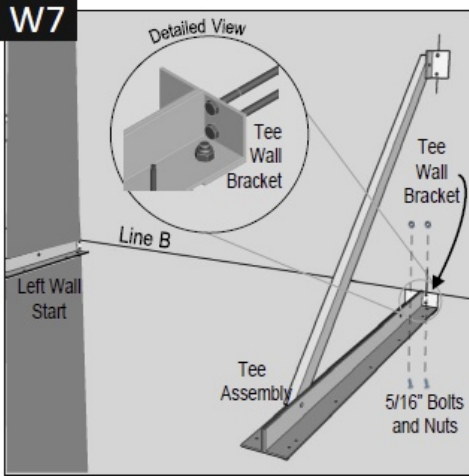
W5-6



INSTALL TEE ASSEMBLY(IES) - IF YOUR KIT IS THE 4' MODEL, SKIP TO STEP W9

W5. MARK LOCATION OF TEE ASSEMBLY ON WALL. Along Line B find the first available stud nearest 48" from the corner (or previously installed assembly). Locate the center of the stud and mark with a 2" vertical mark (Line C).

W6. ATTACH TEE WALL BRACKET TO WALL. Place bottom of 2' level on Line B aligning with the edge of Line C. Make a 2" plumb (vertical) mark at top of the level. Place the top of the Tee Wall Bracket on horizontal Line B and align the center of the two holes on vertical Line C. Holding the Tee Wall Bracket in position, drill pilot hole in top hole using 3/16" drill bit. Use a 7/16" socket wrench or nut driver to attach the Tee Wall Bracket to wall with 3" lag bolt. Tighten until snug but movable. Ensure the Tee Wall Bracket is level, drill second pilot hole and attach second 3" lag bolt. Tighten both lag bolts.

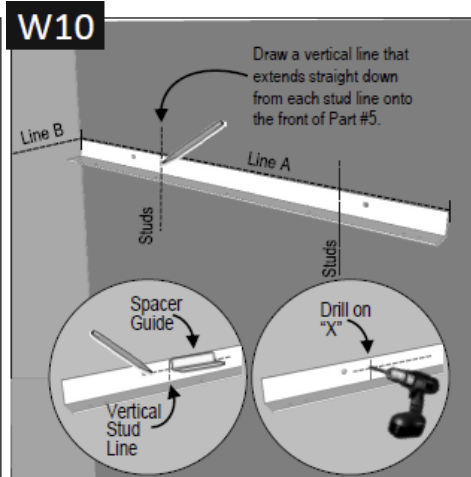
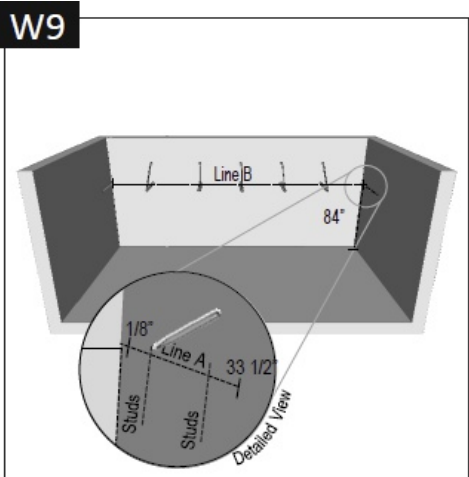


W7. FASTEN TEE ASSEMBLY TO TEE WALL BRACKET. Slide the pre-assembled Tee assembly under Tee Wall Bracket's lower lag bolt head. This will temporarily hold the Assembly in place. Insert 5/16" bolts through bottom of the Tee Wall Bracket the Tee Assembly and hand tighten. Check to make sure the Tee Assembly is perpendicular to wall with a framing square. Tighten bolts with 1/2" wrench and socket or wrench and nut driver.

W8. ATTACH TOP OF TEE ASSEMBLY TO WALL. Place 2' level on the Assembly and push the top of the diagonal to the wall so that the top wall bracket rests flat on the wall, aligning holes to upper vertical Line C. Check level and draw 2" horizontal level line at the top of the bracket.

Holding the top bracket in position, drill the first pilot hole with a 3/16" drill bit. Use 7/16" socket wrench or nut driver to attach the top bracket to the wall with 3" lag bolt. Make sure that the top bracket is level and pre-drill pilot hole and attach second lag bolt. Use a 1/2" wrench and socket or wrench and nut driver to tighten all the 5/16" bolts and nuts on the Tee Assembly.

**If your Kit is an 8' Model, proceed to step W9;
if not, repeat Steps W5 – W8 until all of the pre-assembled Tee Assemblies are installed.**

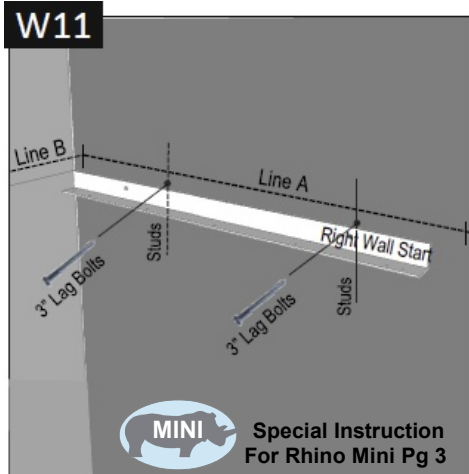


INSTALL RIGHT WALL START

W9. MARK LOCATION OF RIGHT WALL START ON RIGHT WALL. Starting from right corner, referencing Line B, make a small horizontal mark on left wall 1/8" above Line B. From this mark, use a level to draw a 33 1/2" horizontal line onto the right wall. This is Line A. Locate and mark the center of each stud along Line A. See "How To Locate Center of Stud" on Page 2.

W10. DRILL HOLES IN RIGHT WALL START. Align the top of the Right Wall Start with Line A making sure the side with only two holes is against the wall. Place it 1/8" from corner. Holding the part in position, draw a vertical line that extends straight down from each stud line onto the front of the part. Place the Right Wall Start on a scrap piece of wood. Use the 3/4" side of the Spacer Bar to draw a perpendicular line across each vertical line on the front of the part. Drill holes through front of the Right Wall Start on each "x" using a 1/4" drill bit.

FOR RHINO MINI W10 AND W11 SEE "SPECIAL INSTRUCTIONS" BOTTOM OF PAGE 3



W11. FASTEN RIGHT WALL START TO WALL. Align the Right Wall Start's top edge with Line A, placing it 1/8" from corner. Make sure that the new 1/4" holes on the front of the Right Wall Start are aligned with the center of stud lines. Holding the part in position, use a 3/16" bit to pre-drill pilot hole through right 1/4" hole. Use a 7/16" socket wrench or nut driver to attach the Right Wall Start to the wall with 3" lag bolt. Tighten until snug but movable. Ensure the part is level and that its top edge is aligned with Line A. Drill second pilot hole through right 1/4" hole and attach second 3" lag bolt. Level the part and tighten both 3" bolts.

Go to Page 12, "Cut and Install 2x4 Boards" to complete your installation.



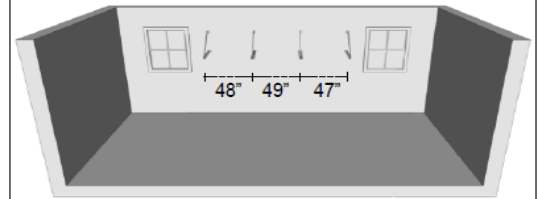
**Special Instruction
For Rhino Mini Pg 3**

NUMBER OF BOARDS TO PURCHASE

Number of 2x4x96" Boards Needed:							
Rhino Shelf (Full Size)				Rhino Mini Shelf			
Kit Length	# of Boards	Kit Length	# of Boards	Kit Length	# of Boards	Kit Length	# of Boards
4'	3 or 5	24'	15	4'	2 or 3	24'	9
8'	5	28'	18	8'	3	28'	11
12'	8	32'	20	12'	5	32'	12
16'	10	36'	23	16'	6	36'	14
20'	13	40'	25	20'	8	40'	15

You will need at least the number of boards indicated. If your actual stud spacing consistently exceeds 16" (or 24") on center, you will require extra boards due to having too many sections that exceed 48".

B1



*NOTE: IDEALLY EACH 96" 2X4 COULD BE CUT IN HALF AT 48", AVOIDING WASTED LUMBER. HOWEVER, IT IS NECESSARY TO MEASURE THE DISTANCE BETWEEN EACH ASSEMBLY BECAUSE ASSEMBLIES MAY NOT BE SPACED PERFECTLY AT 48". THIS IS BECAUSE OF INCONSISTENT STUD PLACEMENT.

CUT AND INSTALL 2X4 BOARDS

B1. MEASURE DISTANCES BETWEEN ASSEMBLIES. Beginning at the back of each of the shelf sections, measure the distance between assemblies. (IMPORTANT to always measure next to wall for each section.) Write down the measurements of each section. (Measure twice, cut once!) Repeat until each distance between assemblies has been measured and written down.

B2. CUT BOARDS TO PRE-MEASURED LENGTHS. Mark exact measurements on 2x4x96" boards. Cut five boards per section for the full-size Rhino Shelf and three boards per section for the Rhino Mini Shelf and set aside, ensuring each section's boards are kept together and separate from the boards of other sections.

Note: Steps B3 and B4 are designed to ensure that the front boards in all shelf sections are straight and look nice - you may be able to just "eyeball" the front boards to make sure they line up. Either way, line up all front boards before screwing in place.

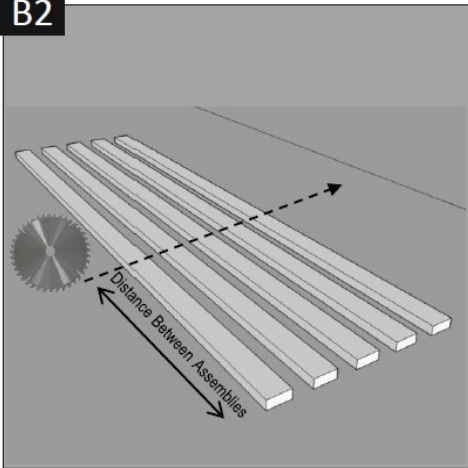
B3. PULL A LINE TO CHECK FOR SQUARE. Using construction line or string, pull a line taut from one "end" assembly to the other "end" assembly and check for square.

B4. EXAMPLE OF AN OUT OF SQUARE ASSEMBLY. To make adjustments, place 2 x 4 cross member on assembly, slide board forward until it just touches the string. Repeat for all front boards before screwing in place, making sure you have a straight line across all shelf sections.

B5. ATTACH BOARDS TO ASSEMBLIES. Starting at the front of the first assembly you installed, use a 1/4" socket or driver to attach #8 screws through the holes on the bottom of the assembly into the bottom of the board. Continue attaching screws through each hole until the front board is secure. Repeat until each front board is secure along the front of the shelf. You may remove the construction line/string now if using. Use the included 'spacer guide' to position next row of boards. Continue adding boards until all sections are filled.

This completes your installation.

RHINO SHELF® (Full Size)



RHINO MINI SHELF®

