Installation Guide | Centurion™ VanGuard

Before You Begin

Before you start, review the checklist to make sure you have all the right components and tools ready to go. Work smart and stay safe by following proper safety procedures and wearing the appropriate personal protective equipment.

For questions about these installation instructions, please contact us at sales@spaceguardproducts.com or **(812) 523-3044**, or reach out to your SpaceGuard Products sales representative.

For more details on the Centurion™ product line, visit: www.spaceguardproducts.com/brands/centurion

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Rev. 1.1 – August 2025

Installation Guide | Centurion™ Rack Repair Kits

Tools & Safety Checklist

Required Tools

Basic Tools

- ☐ Tape Measure
- ☐ Sharpie/Chalk Sticks
- ☐ Speed Square
- ☐ Magnetized Level
- ☐ Step Ladder
- ☐ Extension Cords
- ☐ Large Drift Punch Set
- ☐ Hammer
- ☐ Dead Blow Hammer
- ☐ Shop Vac
- ☐ Crowbar
- ☐ Caution Tape

Cutting Tools

- ☐ Sawzall with “FINE” tooth metal blades
- ☐ Portable Band Saw with “FINE” tooth metal blades
- ☐ Grinder with cutoff wheel and grinding flap discs

Drilling Tools

- ☐ Hammer Drill with 5/8”–¾” concrete drill bits and a 5/8” rebar cutting bit
- ☐ Cordless Drill with step bit and drill bits up to 9/16”
- ☐ Reaming Tool (up to 9/16”)

Fastening Tools

- ☐ Impact Driver
- ☐ Impact Drill
- ☐ SAE Socket Set (¾” deep well or longer)
- ☐ SAE Ratchet Wrench Set
- ☐ Impact Swivel Socket Set
- ☐ Standard Allen Wrench Set
- ☐ Torque Wrench (up to 110 ft-lb)

Pre-Install Safety Checklist

- ☐ **Steel Toe Boots:** Required; composite toes recommended for refrigerated environments.
- ☐ **Caution Tape:** Required to block off aisles; safety cones may be used in conjunction.
- ☐ **Eye and Face Protection:** As required by customer or per tools in use.
- ☐ **Arm Coverings and Gloves:** As required by customer or for specific tasks.
- ☐ **Hard Hats:** Always recommended.
- ☐ **Safety Vest:** Always recommended.

Torque Value Chart

Hardware	Torque Value	Minimum Concrete Embedment
5/16”	17 ft-lbs.	-
⅜”	30 ft-lbs.	-
½”	75 ft-lbs.	-
⅜” Grade 5 Barrel Bolt	23 ft-lbs.	-
⅝” Concrete Anchor	90 ft-lbs.	2-¾”

Installation Guide | Centurion™ Mid Guard – Teardrop

Component List

MID GUARD HARDWARE *
CENT3MGTHDW

A		½”-13 x 4” Carriage Bolt *x6*
B		½”-13 Flanged Serrated Hex Nut *x6*
C		⅜”-16 x 3” Carriage Bolt *x2*
D		⅜”-16 Barrel Nut *x2*

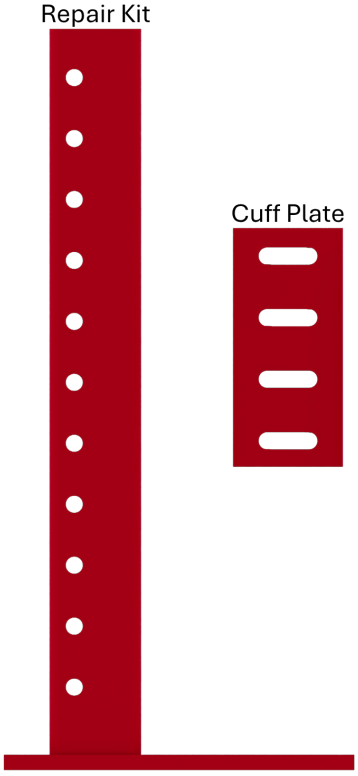
CONCRETE ANCHORS
20440005

H		⅝” x 4-½” Concrete Wedge Anchor *x4*

ADJUSTABLE BRACING †‡
20630121 | 20648007 | 20595014

L		Adjustable Brace – Female Section *x1*
M		Adjustable Brace – Male Section *x1*
N		⅜”-16 x 2-½” Hex Bolt *x2*
P	—	⅜" Flat Washer *x2*
O		⅜”-16 Flanged Serrated Hex Nut *x2*

Repair Kit



Cuff Plate

Cuff

PIVOT BRACKET †
CENT3SDL4THDW

Pivot Bracket *x1*

A		½”-13 x 4” Carriage Bolt *x2*
B		½”-13 Flanged Serrated Hex Nut *x2*
S		⅜”-16 x 3” Hex Bolt *x1*
O		⅜”-16 Flanged Serrated Hex Nut *x1*

* *Hardware sizes shown are for 3" teardrop kits (Hardware Kit CENT3MGTHDW). For 4" kits (CENT4MGTHDW), all bolt lengths increase by 1". For 5" kits (CENT5MGTHDW), all bolt lengths increase by 2". All other hardware remains the same.*

† *Hardware listed per Pivot Bracket or Bracing Set—quantities vary by order.*

‡ *Adjustable bracing is included only if specifically ordered; it is not part of every kit.*

Installation Guide | Centurion™ Mid Guard – Structural

Component List

MID GUARD HARDWARE *
CENT3MGSHDW

A		½”-13 x 4” Carriage Bolt *x2*
B		½”-13 Flanged Serrated Hex Nut *x6*
C		⅜”-16 x 3” Carriage Bolt *x1*
D		⅜”-16 Barrel Nut *x1*
Q		½”-13 x 3” Carriage Bolt *x4*

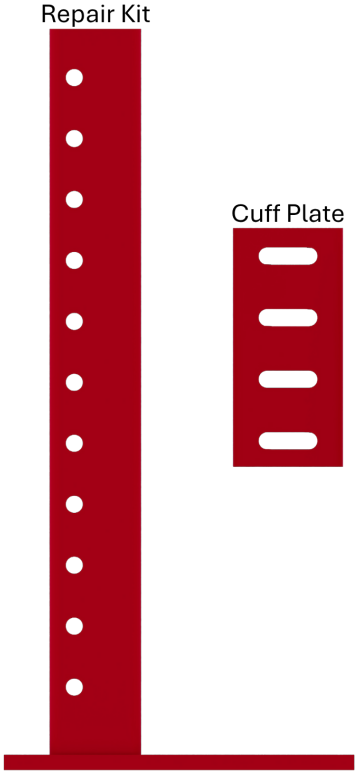
CONCRETE ANCHORS
20440005

H		⅝” x 4-½” Concrete Wedge Anchor *x4*

ADJUSTABLE BRACING †‡
20630121 | 20648007 | 20595014

L		Adjustable Brace – Female Section *x1*
M		Adjustable Brace – Male Section *x1*
N		⅜”-16 x 2-½” Hex Bolt *x2*
P	—	⅜" Flat Washer *x2*
O		⅜”-16 Flanged Serrated Hex Nut *x2*

Repair Kit



Cuff Plate

Cuff

PIVOT BRACKET †
CENT3SDL4THDW

Pivot Bracket *x1*

A		½”-13 x 4” Carriage Bolt *x2*
B		½”-13 Flanged Serrated Hex Nut *x2*
S		⅜”-16 x 3” Hex Bolt *x1*
O		⅜”-16 Flanged Serrated Hex Nut *x1*

* *Hardware sizes shown are for 3" structural kits (Hardware Kit CENT3MGSHDW). For 4" kits (CENT4MGSHDW), all bolt lengths increase by 1". For 5" kits (CENT5MGSHDW), all bolt lengths increase by 2". All other hardware remains the same.*

† *Hardware listed per Pivot Bracket or Bracing Set—quantities vary by order.*

‡ *Adjustable bracing is included only if specifically ordered; it is not part of every kit.*

Installation Guide | Centurion™ VanGuard

Component List

VAN GUARD HARDWARE *

A		½”-13 x 4” Carriage Bolt
B		½”-13 Flanged Serrated Hex Nut
J		½”-13 x 1-¼” Carriage Bolt

DOUBLE-REINFORCED COLUMN †

R		½”-13 x 7” Carriage Bolt *x2*

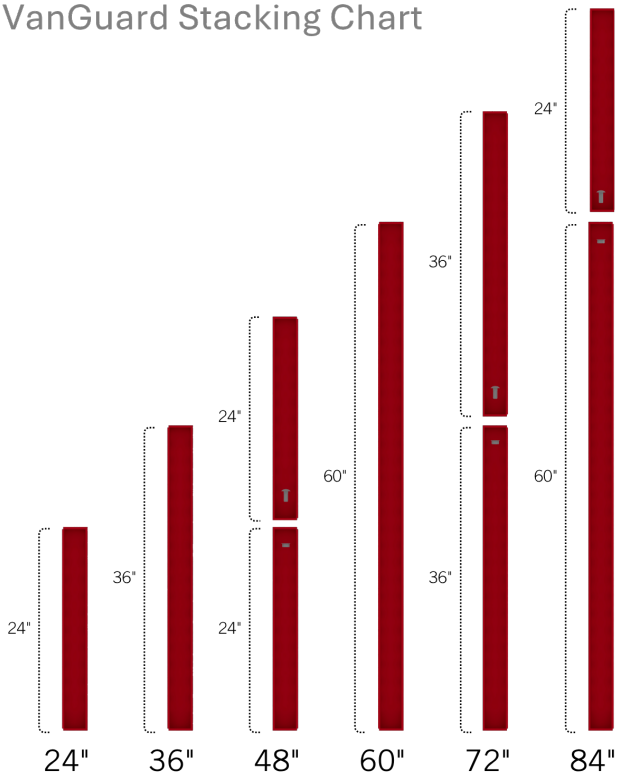
PIVOT BRACKET ‡

CENT3SDL1.25THDW

		Pivot Bracket *x1*
J		½”-13 x 1-¼” Carriage Bolt *x2*
B		½”-13 Flanged Serrated Hex Nut *x2*
S		⅜”-16 x 3” Hex Bolt *x1*
O		⅜”-16 Flanged Serrated Hex Nut *x1*

VanGuard

VanGuard Stacking Chart



Hardware Quantities

Part	Part Description	Repair Kit Height					
		24"	36"	48"	60"	72"	84"
A	½”-13 x 4” Carriage Bolt	6	6	12	8	12	14
B	½”-13 Flanged Serrated Hex Nut	8	8	14	10	14	16
J	½”-13 x 1-¼” Carriage Bolt	2	2	2	2	2	2

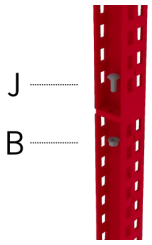
** Refer to the Hardware Quantities chart for quantities of each hardware piece based on your total repair height.*

† Hardware for double-reinforced columns is included only if specifically ordered; it is not part of every kit.

‡ Hardware quantities are listed per Pivot Bracket and may vary by order. Hardware lengths may also vary depending on the installation.

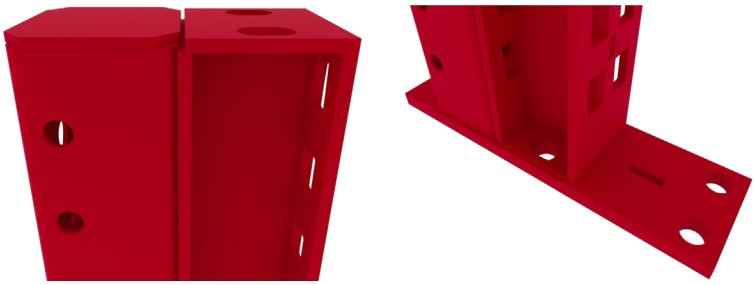
1. Install Cuff and Optional Add-Ons

1.1. Attach Cuff and VanGuard



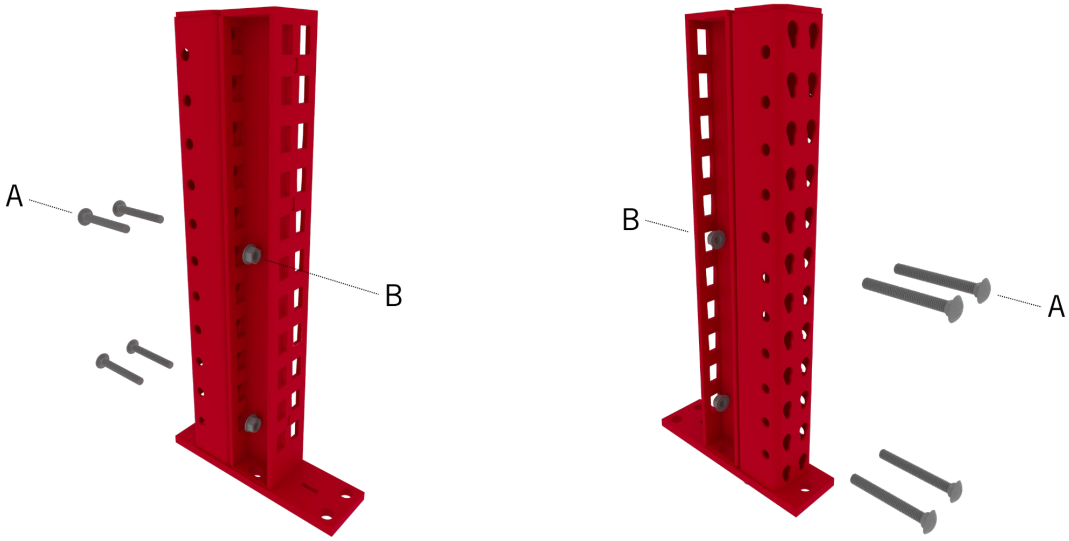
1.1.1. If installing a 48", 72", or 84" VanGuard, stack and bolt the two VanGuard sections together by aligning the holes at the top and base of each section. Secure with *[2]* bolts **(J)** and *[2]* nuts **(B)**, one set on each side.

For 48", stack [2] 24" VanGuard; for 72", stack [1] 36" and [1] 24" VanGuard; for 84", stack [1] 60" and [1] 24" VanGuard. Refer to the stacking chart on the Components page for further clarification on your configuration.



1.1.2. Place the VanGuard onto the front of the Mid Guard repair kit. Ensure the end with the offset plates is positioned over the base plate weld so it fits tightly against the kit. Align the holes in the VanGuard end plates with the holes in the base plate to allow for anchor installation in a later step.

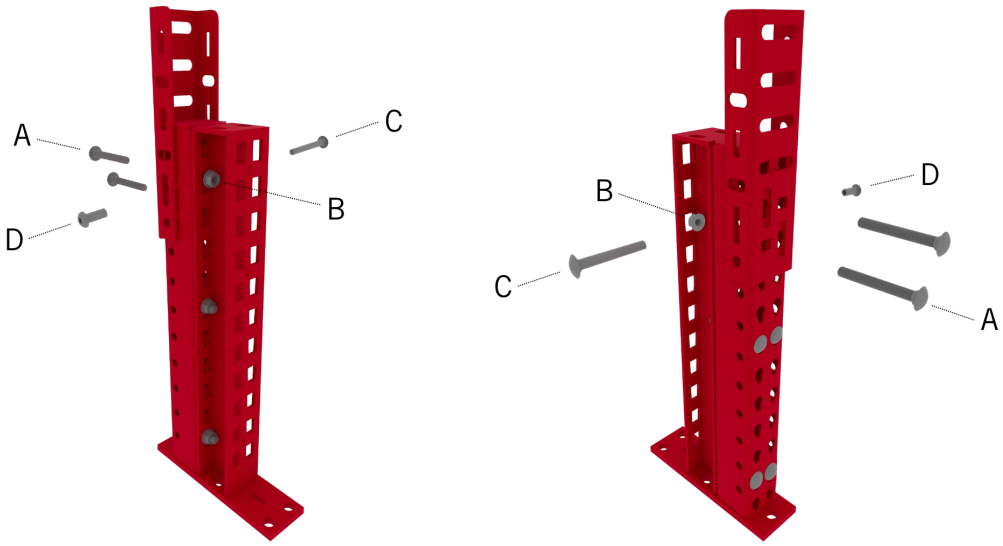
The holes will only align with in-line base plates, not seismic base plates.



1.1.3. Attach the VanGuard to the Mid Guard using *[4]* carriage bolts **(A)**, starting at the second hole from the bottom. Place the second set of bolts 12" above the first. Secure with *[4]* hex nuts **(B)** and hand-tighten.

1. Install Cuff and Optional Add-Ons *(cont.)*

1.1. Attach Cuff and VanGuard *(cont.)*



1.1.4. Insert *[2]* carriage bolts **(A)** in a diagonal pattern through the front of the cuff, passing through the repair kit and the VanGuard. Secure with *[2]* hex nuts **(B)** and hand-tighten.

1.1.5. Insert *[1]* carriage bolt **(C)** through the rectangular hole on the right side of the cuff (when facing the front), passing it through the repair kit and exiting through the opposite oval hole on the left side of the cuff. Secure the bolt with *[1]* barrel nut **(D)** inserted into the oval hole, and hand-tighten.

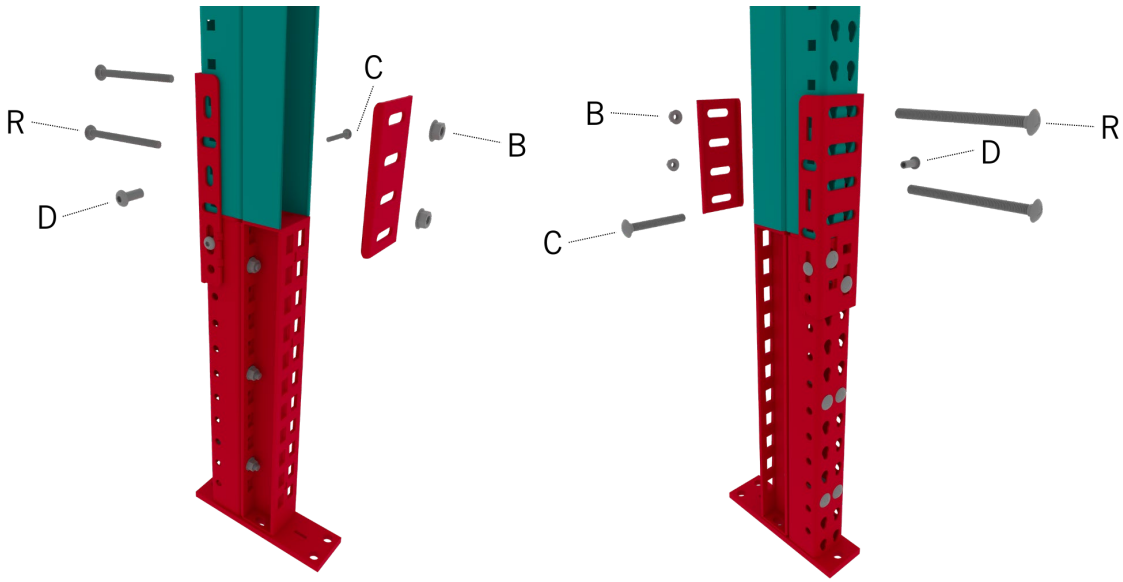
If you are attaching a High Guard, proceed to step 1.3.

1.1.6. Lower the rack column onto the repair kit, ensuring it rests flush and square.

2. Attach Kit to Column

If the kit needs to be shortened, see the Drop Cap section in the Optional Field Modifications guide.

2.1. Double-Reinforced Teardrop Columns using VanGuard



2.1.1. Insert *[2]* carriage bolts **(R)** in a diagonal pattern into the top of the cuff, passing through rack column and the cuff plate. Secure the cuff plate to the back of the rack column with *[2]* hex nuts **(B)** and hand-tighten.

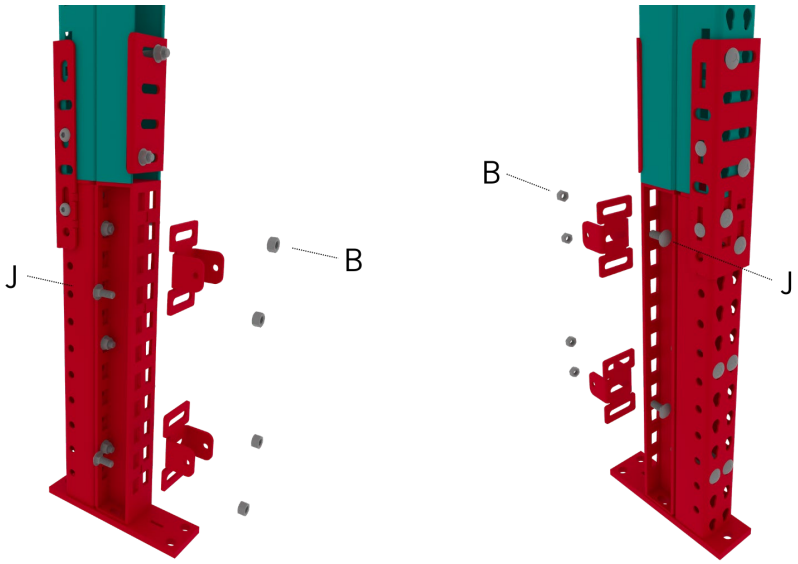
If the upright is less than 6" deep, the VanGuard will extend beyond the cuff plate, creating a small overhang, as shown above.

2.1.2. Insert *[1]* carriage bolt **(C)** through the rectangular hole on the right side of the cuff (when facing the front), passing it through the rack column and exiting through the opposite oval hole on the left side of the cuff. Secure the bolt with *[1]* barrel nut **(D)** inserted into the oval hole, and hand-tighten.

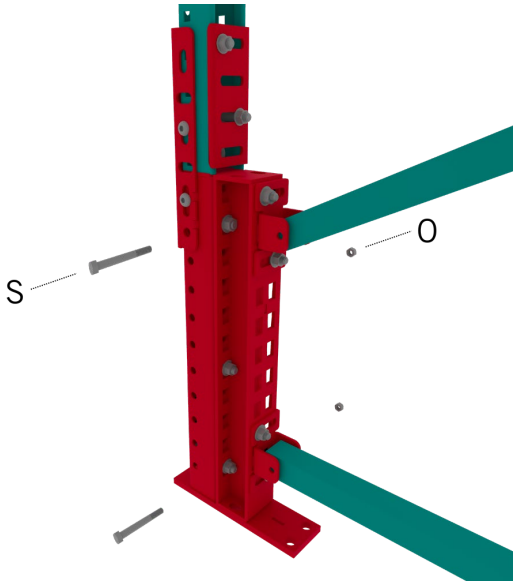
2.1.3. Tighten all nuts to torque spec *(reference Torque Value chart)*.

3. Attach Bracing to Kit

3.1. If Using Existing Horizontal and/or Diagonal Brace



3.1.1. Attach the horizontal and/or diagonal pivot brackets to the repair kit at the locations of the previously removed bracing. Insert *[2]* carriage bolts **(J)** in a diagonal pattern through each bracket and the repair kit, then secure with *[2]* hex nuts **(B)** and hand-tighten.

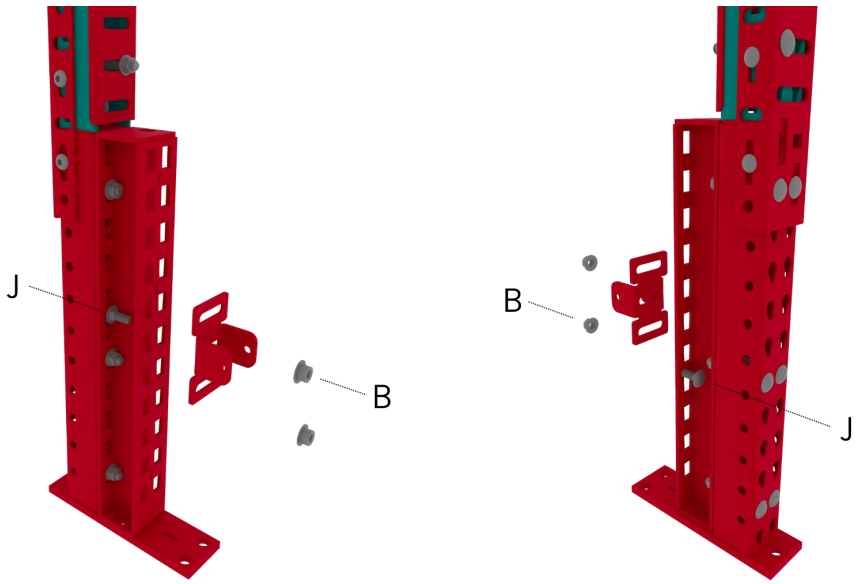


3.1.2. Align existing horizontal and/or diagonal brace to pivot bracket and drill hole. Insert *[1]* hex bolt **(S)** through the side holes of the bracket and brace. Secure with *[1]* hex nut **(O)**.

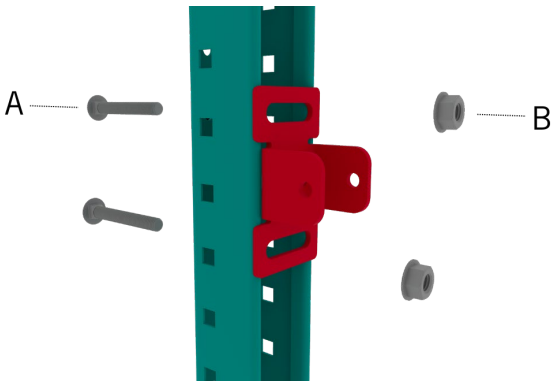
3. Attach Bracing to Kit *(cont.)*

3.2. If Using Optional Centurion™ Bracing Kit

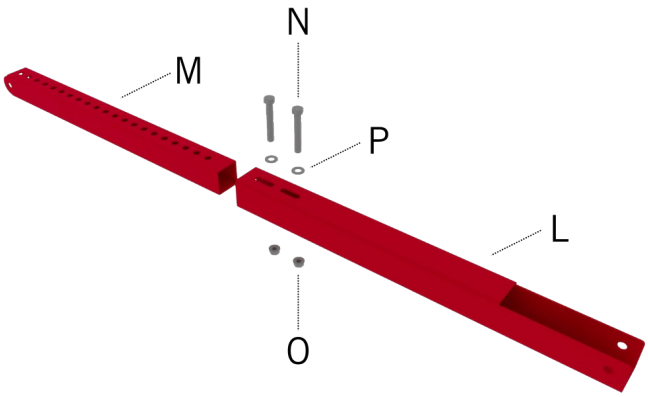
When attaching the horizontal and diagonal pivot brackets, keep both braces within a maximum of 8" of each other. Place the Centurion™ bracing as closely as possible to the original bracing locations.



3.2.1. Align the pivot bracket at the location of the original bracing that was removed. Insert *[2]* carriage bolts **(J)** in a diagonal pattern through the bracket and repair kit, then secure with *[2]* hex nuts **(B)** and hand-tighten.



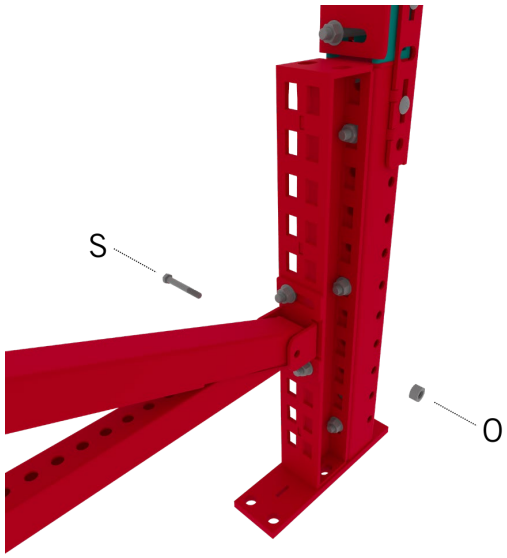
3.2.2. Attach *[1]* pivot bracket to the existing column directly across from the bracket on the repair kit, and *[1]* pivot bracket to the location where the diagonal brace was cut out. For each bracket, insert *[2]* carriage bolts **(A)** in a diagonal pattern and secure with *[2]* hex nuts **(B)**, then hand-tighten.



3.2.3. Assemble the horizontal brace by inserting the male **(M)** section into the female **(L)** section. Insert *[2]* hex bolts **(N)** through the holes that set the appropriate depth for your rack upright and secure with *[2]* washers **(P)** and *[2]* hex nuts **(O)**. Repeat this step to assemble the diagonal brace.

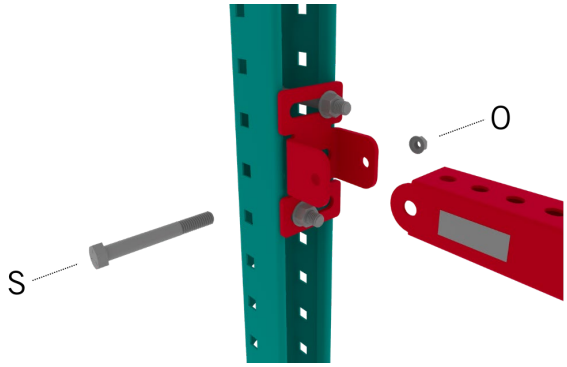
3. Attach Bracing to Kit *(cont.)*

3.2. If Using Optional Centurion™ Bracing Kit *(cont.)*



3.2.4. Align the female side of the diagonal brace with the male side of the horizontal brace, positioning both with the pivot bracket on the repair kit. Secure together by passing *[1]* hex bolt **(S)** through the side holes and tightening with *[1]* hex nut **(O)**.

Use one bracket if the horizontal and diagonal braces connect at the same point. Use two brackets if they connect at different points.



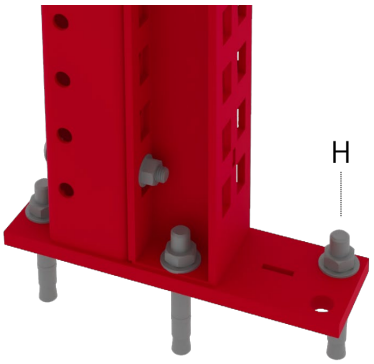
3.2.5. Secure the opposite side of the horizontal brace to the pivot bracket on the existing column by inserting *[1]* hex bolt **(S)** and tightening with *[1]* hex nut **(O)**. Repeat this step to attach the opposite side of the diagonal brace.

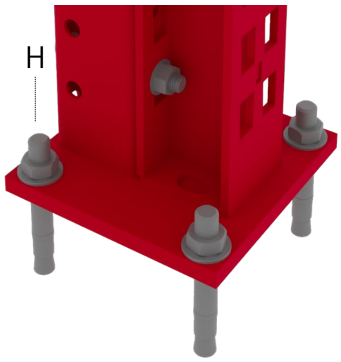
4. Check Plumbness

4.1. Ensure the repair kit is vertically aligned and square with the back leg of the upright.

5. Anchor Kit to Ground

5.1. Drill holes through the base plate and as deep as possible into the concrete, ensuring a minimum embedment of 2-¾" for the concrete anchors. It is preferred to drill through the concrete pad to accomplish full-depth anchoring.





For in-line base plates: Drill *[3]* holes: *[1]* in the front and *[2]* in the back, positioned diagonally. The base holes on the VanGuard will align with those in the Mid Guard base plate, and anchors should pass through both components.

For seismic base plates: Drill through all *[4]* holes. The base holes on the VanGuard will not align with the seismic base plate, so anchors do not need to pass through the VanGuard.

5.2. Vacuum all debris from the drilled holes.

5.3. Hammer concrete anchors **(H)** into the drilled holes and tighten to spec *(refer to Torque Value Chart)*.

6. Final Check

6.1. Torque all fasteners to recommended torque values *(refer to Torque Value Chart)*.

6.2. Apply the Centurion™ sticker to the front of the fully installed repair kit.