Centurion™ Rack Repair Kits – Installation Guide

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 Drill
- ☐ Socket Set (¾” deep well or longer)
- ☐ 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”

Centurion™ Low Guard – Installation Guide

Component List

A ½”-13 x 4” Carriage Bolt *x6*

B ½”-13 Flanged Serrated Hex Nut *x6*

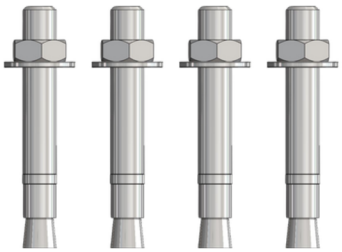
C ⅜”-16 x 3” Carriage Bolt *x2*

D ⅜”-16 Barrel Nut *x2*

E 5/16”-18 x 2-½” Hex Bolt *x1*

F 5/16”-18 x ¾” Flanged Serrated Hex Nut *x2*

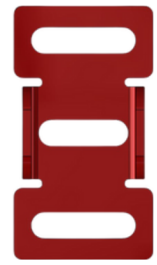
G Nylon Spacer *x1*



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

J ½”-13 x 1-¼” Carriage Bolt *x4*

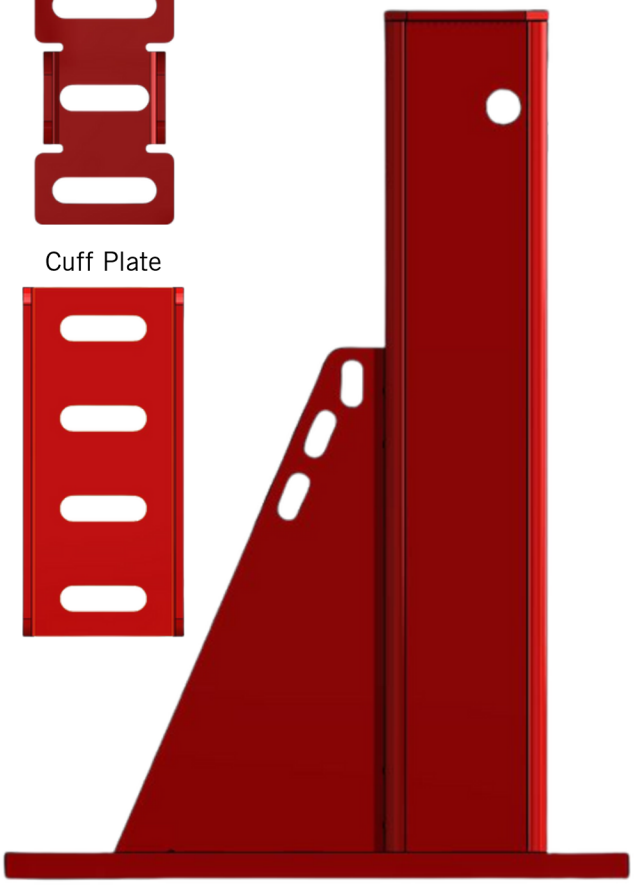
K 5/16”-18 x 3” Hex Bolt *x1*



Pivot Bracket

Cuff

Cuff Plate



Adjustable Bracing Set

L Adjustable Brace – Female Section *x1*

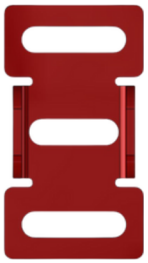
M Adjustable Brace – Male Section *x1*

N ⅜”-16 x 2-½” Hex Bolt *x2*

P ⅜" Flat Washer *x2*

O ⅜”-16 Flanged Serrated Hex Nut *x2*

Pivot Bracket Set



Pivot Bracket *x1*

A ½”-13 x 4” Carriage Bolt *x2*

B ½”-13 Flanged Serrated Hex Nut *x2*

K 5/16”-18 x 3” Hex Bolt *x1*

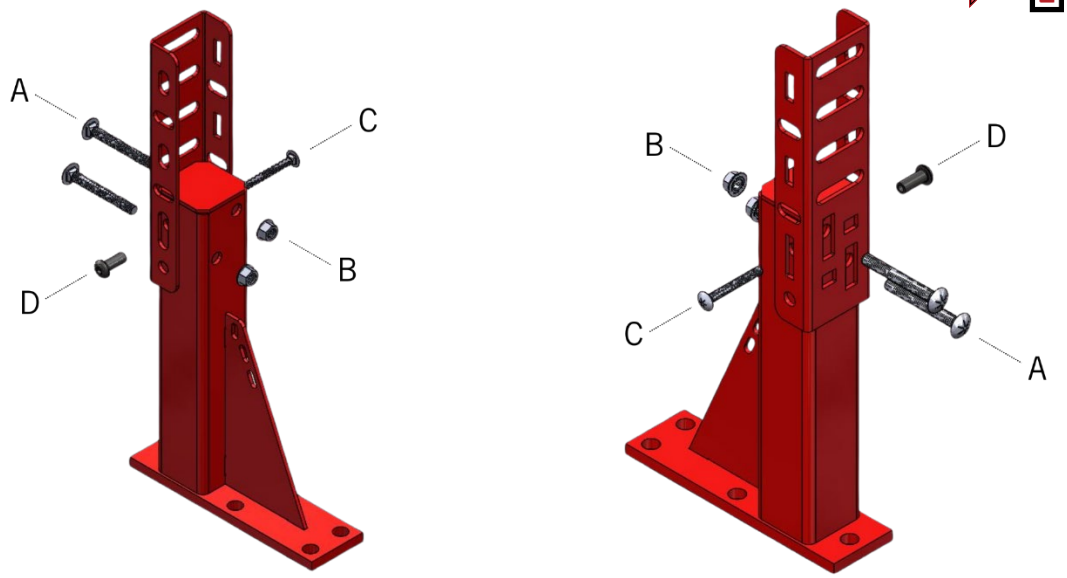
F 5/16”-18 x ¾” Flanged Serrated Hex Nut *x1*

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

Centurion™ Low Guard Installation Guide

Scan to follow along with the installation guide video!

1. Attach Cuff to Kit



1.1. Insert *[2]* carriage bolts **(A)** through the front of the cuff and into the repair kit. Secure them with *[2]* hex nuts **(B)** and hand-tighten.

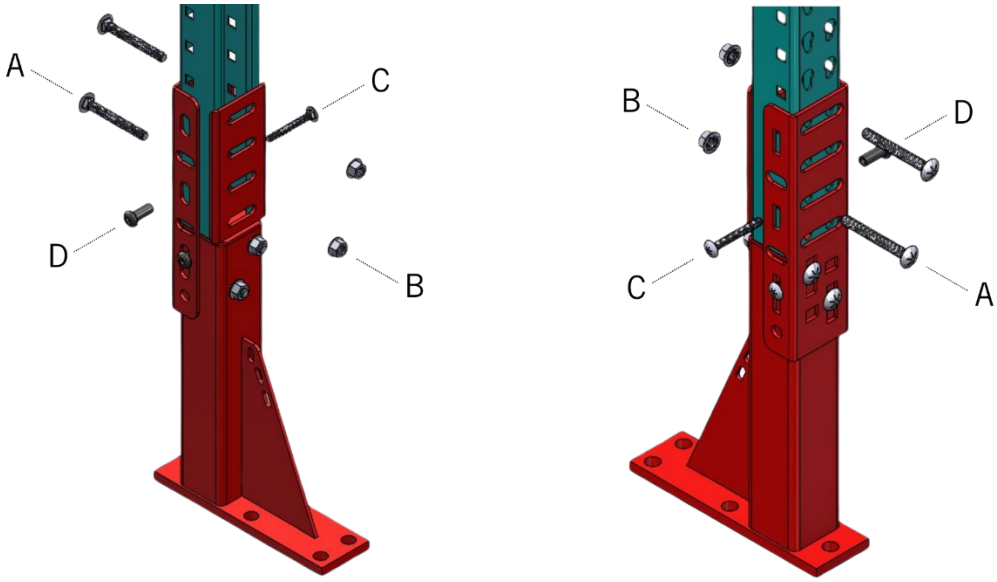
1.2. Insert *[1]* carriage bolt **(C)** through the hole on the side of the cuff passing it through the repair kit to exit through the hole on the opposite side of the cuff. Secure it with *[1]* barrel nut **(D)** and hand-tighten.

1.3. Lower the rack column onto the repair kit. Column must rest on the repair kit.

2. Attach Kit to Column

For Roll Formed Uprights

*You will have [2] unused carriage bolts **(A)** and [4] unused carriage bolts **(J)**.*



2.1.1. Insert *[2]* carriage bolts **(A)** into the top of the cuff and through the rack column.

2.1.2. Attach the cuff plate to the back of the rack column and secure with *[2]* hex nuts **(B)**.

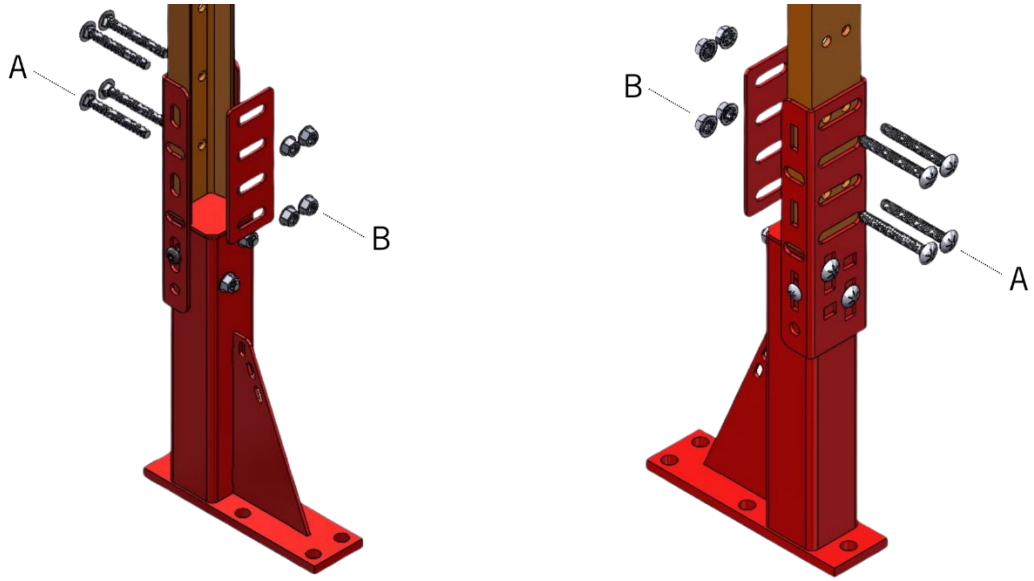
2.1.3. Insert *[1]* carriage bolt **(C)** through the hole on the side of the cuff passing it through the rack column and exiting through the hole on the opposite side of the cuff. Secure it with *[1]* barrel nut **(D)** and hand-tighten.

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

2. Attach Kit to Column *(cont.)*

For Structural Uprights (or others without a side hole)

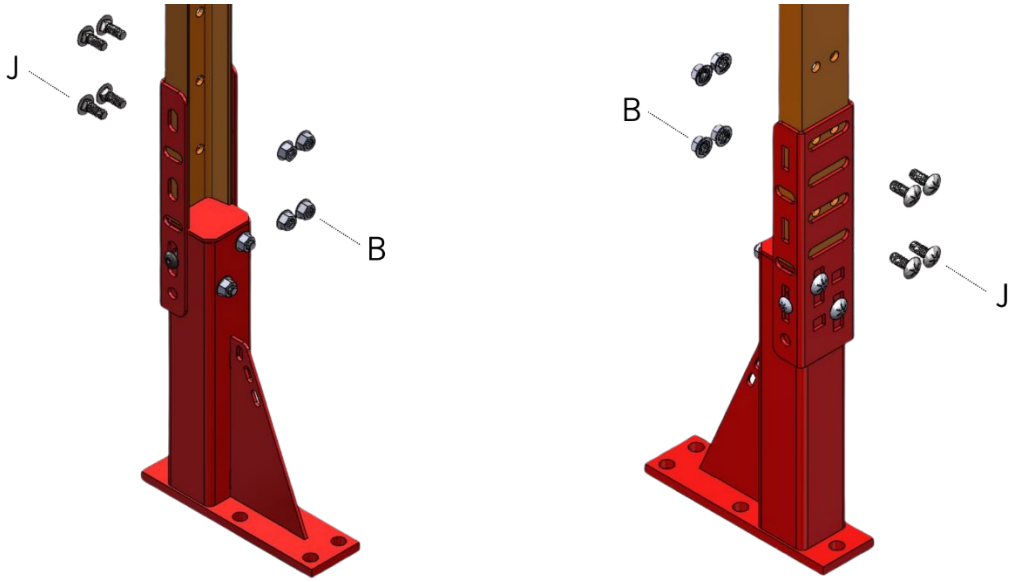
*You will have [1] unused carriage bolt **(C)**, [1] unused barrel nut **(D)**, and [4] unused carriage bolts **(J)**.*



2.2.1. Insert *[4]* carriage bolts **(A)** into the top of the cuff and through the rack column.
2.2.2. Attach the cuff plate to the back of the rack column and secure with *[4]* hex nuts **(B)**.
2.2.3. Tighten all nuts to torque spec *(reference Torque Value chart)*.

For Single Structural Uprights (or others without a side hole)

*You will have [1] unused carriage bolt **(C)**, [1] unused barrel nut **(D)**, and [4] unused carriage bolts **(A)**.*

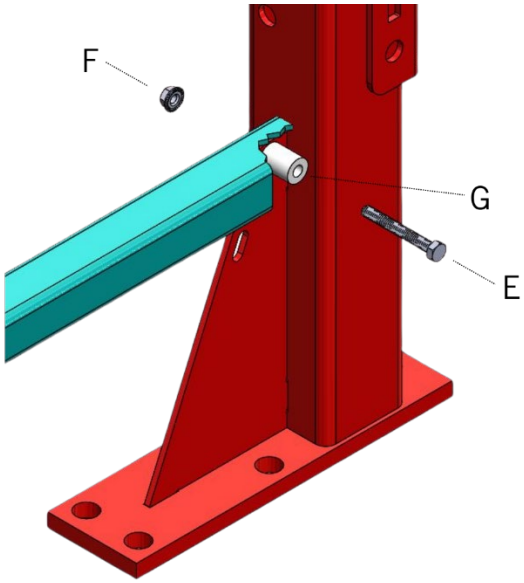


2.3.1. Insert *[4]* carriage bolts **(J)** through the cuff and directly into the column, tightening the nuts directly against the inside of the column with *[4]* hex nuts **(B)**.
2.3.2. Tighten all nuts to torque spec *(reference Torque Value chart)*.

3. Attach Bracing to Kit

If Using Existing Horizontal Brace

If horizontal brace aligns with gusset, follow instructions in Step 3.1. If not, follow steps in 3.3.

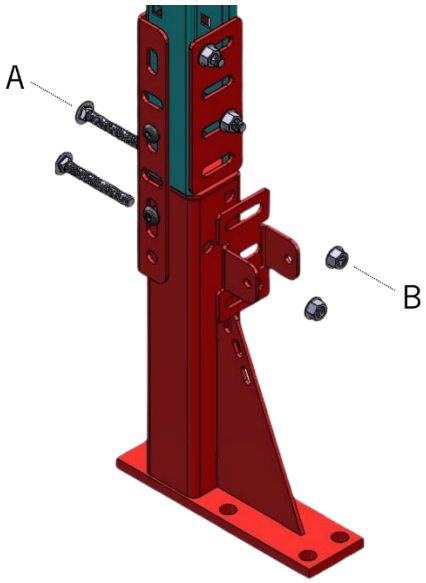


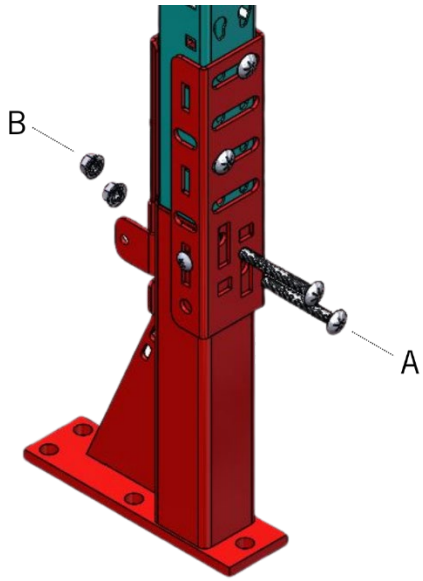
3.1.1. Lower the existing horizontal brace onto the gusset of the repair kit. Position *[1]* nylon spacer **(G)** inside the brace, then insert *[1]* hex bolt **(E)** through the brace, passing through the gusset and the spacer. Secure with *[1]* hex nut **(F)**.

Note:

- If reattaching to an angle, note that the brace will be offset to one side.
- If reattaching to a tube, notch the bottom of the tube and drill a hole to accommodate the bolt.

If Using Existing Diagonal Brace

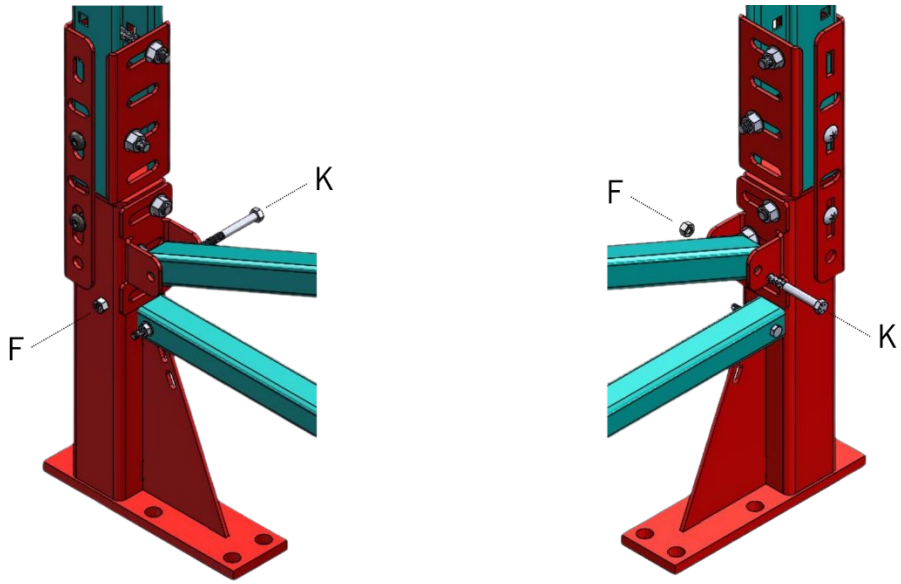




3.2.1. Align the pivot bracket flush with the top of the repair kit. Attach it using the *[2]* carriage bolts **(A)** previously installed in Step 1.1 for the cuff, and secure with *[2]* hex nuts **(B)**.

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

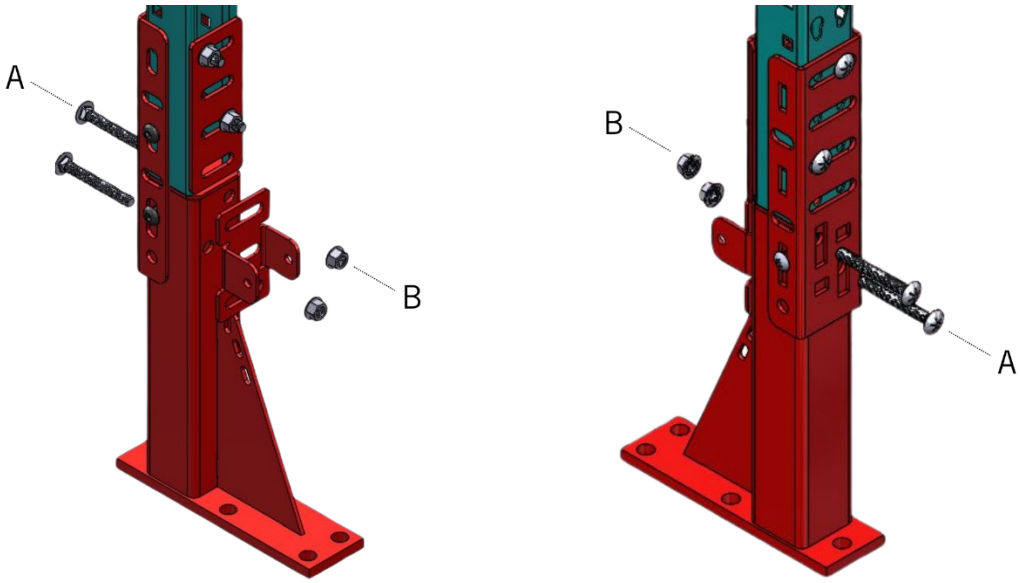
If Using Existing Diagonal Brace



3.2.2. Align existing diagonal brace to pivot bracket and drill hole. Insert *[1]* hex bolt **(K)** through the side holes of the bracket and brace. Secure it with *[1]* hex nut **(F)**.

If Using Optional Centurion™ Bracing Kit

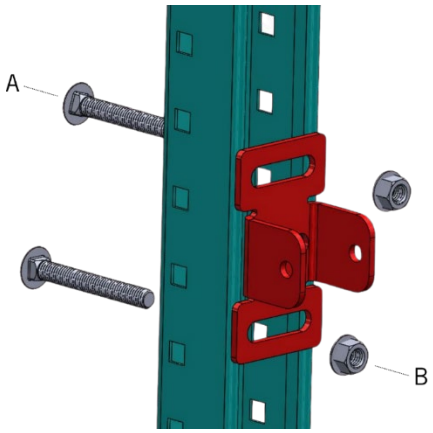
If you are only attaching horizontal bracing, follow the steps below and omit those related to the diagonal brace.



3.3.1. Align the pivot bracket flush with the top of the repair kit. Attach it using the *[2]* carriage bolts **(A)** previously installed in Step 1.1 for the cuff, and secure with *[2]* hex nuts **(B)**.

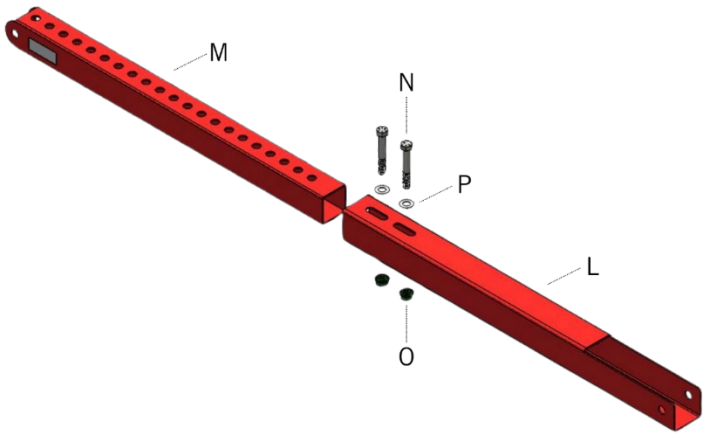
3. Attach Bracing to Kit *(cont.)*

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

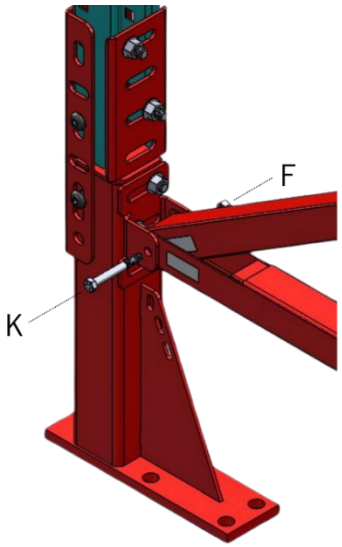


3.3.2. Attach *[1]* pivot bracket to the existing column directly across from the bracket on the repair kit using *[2]* carriage bolts **(A)**. Secure the bolts with *[2]* hex nuts **(B)**.

3.3.3. Attach *[1]* pivot bracket to the existing column in the location where the diagonal brace was cut out using *[2]* carriage bolts **(A)**. Secure the bolts with *[2]* hex nuts **(B)**.



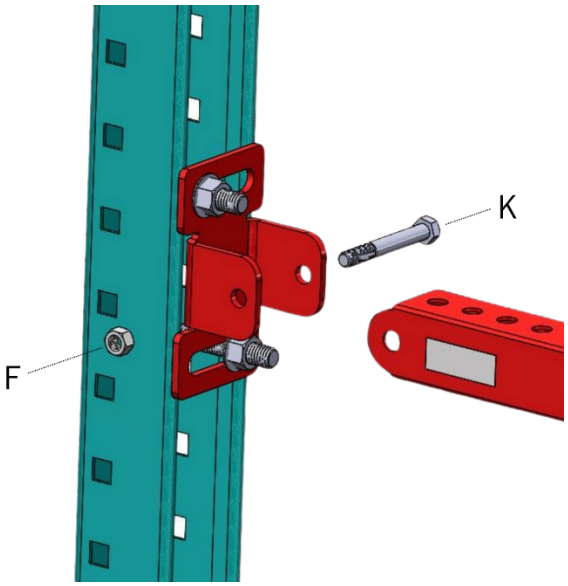
3.3.4. Assemble the horizontal brace by inserting the male **(M)** section into the female **(L)** section. Insert *[2]* hex bolts **(N)** through the holes that set the appropriate depth for your rack upright and secure with *[2]* washers **(P)** and *[2]* hex nuts **(O)**. Repeat this step to assemble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



3.3.5. 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 them together by passing *[1]* hex bolt **(K)** through the side holes and tightening with *[1]* hex nut **(F)**.

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

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



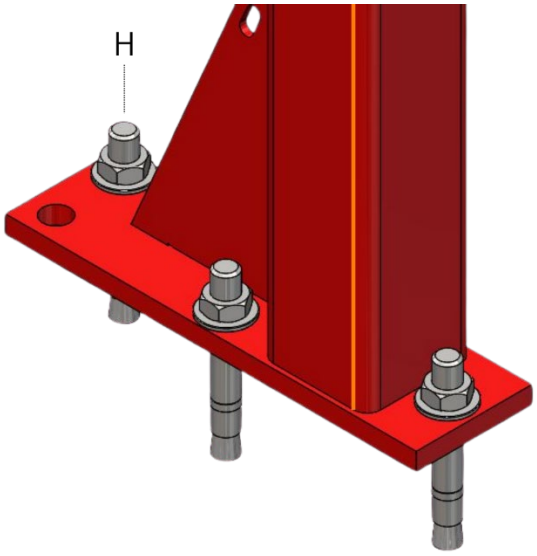
3.3.6. Secure the opposite side of the horizontal brace to the pivot bracket on the existing column by inserting *[1]* hex bolt **(K)** and tightening with *[1]* hex nut **(F)**. Repeat this step to attach the opposite side of the diagonal brace.

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.



5.1.1. **For in-line base plates:** Drill *[3]* holes: *[1]* in the front and *[2]* in the back, positioned diagonally.

5.1.2. **For seismic base plates:** Drill through all *[4]* holes.

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. Check Torque Values

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