

RubiconEP

REDEFINE ADVENTURE



 **CORRAL**™



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Disclaimer and Warning

Congratulations on purchasing your new RubiconEP product. The information in this document affects your safety and your legal rights and responsibilities. Read this entire document carefully to ensure proper configuration before use. Failure to read and follow instructions and warnings in this document may result in serious injury to yourself or others, damage to your Corral Bike Rack™, or damage to other objects in the vicinity. This document and all other collateral documents are subject to change at the sole discretion of RubiconEP. For up-to-date product information, visit <https://rubiconep.com/corral>. Do not use Corral Bike Rack™ with other or incompatible components or otherwise alter this product in any way outside this or other documentation provided by RubiconEP.

By using this product, you hereby signify that you have read this disclaimer and warning carefully and that you understand and agree to abide by the terms and conditions herein. You agree that you are solely responsible for your own conduct while using this product, and for any consequences thereof. You agree to use this product only for purposes that are detailed in this document and in accordance with all applicable laws, rules, and regulations, and all terms, precautions, practices, and guidelines RubiconEP has made and may make available.

Corral Bike Rack™ Assembly Instructions:

Included in your new RubiconEP Corral Bike Rack™ is everything required for assembly and installation. The quantity of certain parts will depend on the size of the bike rack ordered. For example, if you ordered a 4-bike Corral Bike Rack™, you should have received 4 Wheel Baskets with Basket Clamps, and so on. If you ordered a 5-bike rack, your quantities would be 5. Please verify that all parts are present:



- A) 1 Center Column with linkages
- B) 1 Hitch Mechanism with Silent Hitch Pin
- C) 1 Upper Cross Bar
- D) 2 Center Brackets for a 2-bike rack and 3 for a 4 or 5-bike rack
- E) 1 Lower Cross Bar
- F) 2, 4 or 5 Wheel Baskets with Basket Clamps
- G) 2, 4 or 5 Riser Brackets
- H) 2, 4 or 5 Upper Lassos
- I) 2, 4 or 5 Lower Lassos
- J) 2, 4, or 5 Velcro Straps
- K) 1 Parts Kit*: 1/8" Hex Allen wrench , 1/4" Hex Allen wrench, 5/32" Hex Allen wrench, and one bottle of Medium Strength (blue) Loctite. *not pictured

Note: Before you begin, grab a tape measure, 2 crescent wrenches, and a Philips head screwdriver.

Section 1 – Hitch Mechanism Installation

Part One: Hitch Mechanism Installation

1) Let's start by installing your new Hitch Mechanism (B) on your vehicle. We find that this helps make the assembly of your Corral Bike Rack so much easier.



2) Find that Hitch Mechanism and the included Let's Go Aero Silent Hitch Pin. This pin allows the Hitch Mechanism to be installed so that it will not move around in the receiver. And that my friends, is important!

3) 5/8" Silent Hitch Pin® Installation

(((**STOP THE NOISE!**)))™

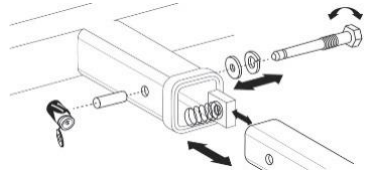
Anti-Rattle Pin For Hollow 2" Hitch Accessories

STEP 1: Insert the Spring Nut into the hitch accessory shank tube. Align the Spring Nut's coil with the hitch receiver pin hole.

STEP 2: With the Spring Nut compressed within the accessory shank, slide the shank into the vehicle's hitch receiver and align the hitch pin holes.

STEP 3: Insert the Silent Hitch Pin with the Split Washer into the hitch pin hole and thread the pin through the *threaded block side* of the Spring Nut as shown.

STEP 4: Slide the sleeve into the hitch pin hole so that it slides over the hitch pin. Using a 7/8" wrench, fully tighten the Pin so it is snug and tight; secure with clip. You are now ready for Safe and Silent Towing.



LET'S GO AERO

Let's Go Aero Patent Nos. 6,409,203; 6,809,725; 6,945,549; 8,079,613

4) Now, the LGA pin comes pre-installed in the most extended position. However, if you would like to adjust it so that your rack sits closer to the vehicle, simply remove the Hitch Mechanism, move the spring nut to a different hole, and reinstall. Done and done!



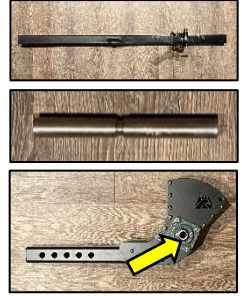
5) The image on the far right shows a Hitch Mechanism properly installed.



Section 2 – Corral Bike Rack™ Assembly & Installation

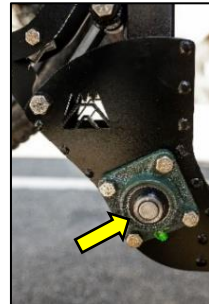
Part One: Center Column Assembly

- 1) Now for the fun part!
- 2) Locate Center Column (A). The Hitch Mechanism should already be installed on your rig.
- 3) First, we need to check that the bearings did not become mis-aligned during shipping. To do this, insert the $\frac{3}{4}$ " axle through the opening indicated in the picture to the right. If it slides all the way through, you are set. If it does not, then they are not aligned, and you can simply use the axle as a lever to re-align them.



- 4) Next, hold the Center Column with the linkages at the bottom, closest to the ground, and the handle facing you.
- 5) Insert the Center Column into the receiver tube of the Hitch Mechanism, aligning the bottom hole with the bearing openings on each side.

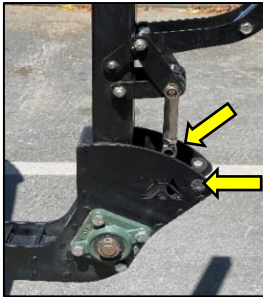
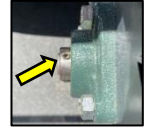
- 6) Slide the $\frac{3}{4}$ " axle from the outside of the Hitch Mechanism in, through the welded internal sleeve in the bottom of the Center Column. This part can be a little tricky as you need both holes in the bottom of the Center Column to align with each of the holes on the sides of the Hitch Mechanism. Don't be shy! Ask a friend for help!



7) Once the 3/4" axle rod is fully inserted, use a Philips head screwdriver to tighten the screw on the bottom of the Center Column, securing it in place.



8) Finally, using the 1/8" Allen wrench, tighten the two small, black set-pins on the left and right sides of the 3/4" axle. *Note: This means you should have tightened 4 in total. #Math.*



9) Next, we will insert the Yellow-Zinc plated bolt through the openings on each side of the Hitch Mechanism, and the rod end in the center.

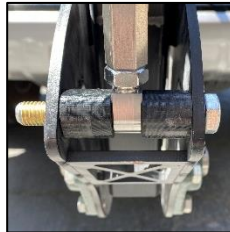
10) Slide the bolt from the right to the left, through the first hole in the Hitch Mechanism.

11) Once it passes through that first hole, add a bushing to it.

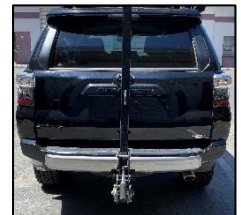
12) Next, slide it through the rod end, and add your second bushing.

13) Finally, slide the bolt through the hole on the opposite side of the Hitch Mechanism.

14) Add the nut to the end of the bolt and use a 3/4" socket or box end wrench and crescent wrench to tighten. - Included?



15) The picture to the right shows the Center Column and Hitch Mechanism correctly installed on the vehicle.



Part Two: Upper Cross Bar Assembly

- 1) Locate the Upper Cross Bar (C) and your Center Brackets (D).
- 2) Pull up on the safety trigger of the Hitch Mechanism and lower the Center Column into the lean-to-load position.
- 3) Pull down firmly on the top of the Center Column until you feel it lock into the lowered position.
- 4) Hold the Upper Cross Bar out in front of you with the longest section on top, and the smaller section below.



- 5) Place the Upper Cross Bar ***behind*** the Center Column and position it so that is about 0.5" (1.3 cm) from the top.
- 6) Now, let's set your spacing.

- 7) Spacing will vary, depending on whether you have a 2, 4, or 5-bike rack. Additionally, placement of the Upper and Lower Cross Bars will intentionally stagger them. This is essential to the proper functionality of your Corral Bike Rack™.
- 8) Using the chart below, determine the correct placement of your Upper Cross Bar. *Note: "centerline" denotes the very center of the Center Column horizontally, from left to right.*

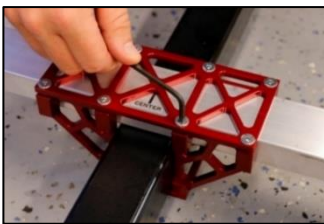
Placement	5-Bike Rack	4-Bike Rack	2-Bike Rack
Upper Cross Bar	27.5" (70 cm) from left end of cross bar to centerline	27.5" (70 cm) from left end of cross bar to centerline	11" (28 cm) from left end of cross bar to centerline

- 9) Slide that Upper Cross Bar until it is correctly positioned.
- 10) Then, ask a friend to help hold it in place while you work on the bottom Center Bracket. #worksmafternotharder
- 11) Using the 5/32" Allen wrench, remove the hardware from the largest plate of each of the Center Brackets. This is the top plate.



- 12) Hold one Center Bracket so that the longest section is horizontal, and the open section is facing away from you, towards the vehicle.
- 13) Place it over the Center Column and bottom section of the Upper Cross Bar.

- 14) Ensure the 4 bolts on the bottom (small) plate of the Center Bracket are secure.
- 15) Then, reattach the larger, top plate and **LOOSELY ASSEMBLE THE HARDWARE**, adding a small amount of medium strength Loctite (blue) to each of the 8 bolts as you go. Just a tad. Don't get too excited. And don't stress. We already did the other side.

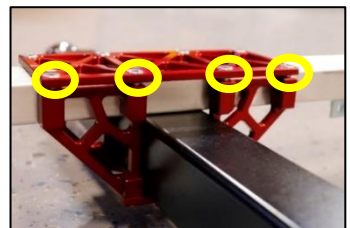


- 16) Then, using a crisscross pattern, **lightly** tighten each of the bolts on the top of the Center Bracket using the 5/32" Allen wrench.

DO NOT overtighten one side of the bracket as it can DAMAGE it!!!

A GAP BETWEEN THE TOP PLATE & PARTS BELOW WILL REMAIN.

We are serious. These are the facts.



- 17) Check that a 0.125" (3.175 mm) gap between the top plate and the parts below is present around the entire bracket. ***This gap must remain for proper functionality of the Corral Bike Rack™. In other words, if it is not present you could break it, which would be bad.***
- 18) Once you've verified that gap, using a crisscross pattern, tighten each of the bolts snugly. ***This should be no more than ½ a turn of the wrench, so don't go all Hulk on it!***
- 19) Repeat Steps 11 through 18 for the next Center Bracket, placing it over the Center Column and on the top section of the Upper Cross Bar. Nailed it!



Part Three: Lower Cross Bar Assembly

- 1) Locate that Lower Cross Bar (E). It should be the only one left. If you find you have an extra, pause, cry a little, and figure out where the heck you went wrong. #coolcoolcool
- 2) We will be securing it near the Hitch Mechanism end of the Center Column, below the D ring.
- 3) Grab that last Center Bracket. You should have already removed the top plate.
- 4) Hold the Center Bracket so that the longest section is horizontal and the opening faces towards you, away from the vehicle.
- 5) Place it ***behind*** and over the Center Column.
- 6) Insert the Lower Cross Bar.
- 7) Let's set your spacing! Just as you did in the previous section, use the chart below to determine the placement of the Lower Cross Bar for your rack.



Placement	5-Bike Rack	4-Bike Rack	2-Bike Rack
Lower Cross Bar	27.5" (70 cm) from right end of cross bar to centerline	27.5" (70 cm) from right end of cross bar to centerline	11" (28 cm) from right end of cross bar to centerline

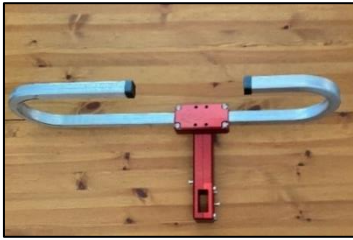
- 8) First, slide the Lower Cross Bar horizontally so that it measures the correct distance from the left end of the cross bar to the centerline of the Center Column. (*See table above*)
- 9) Next, move it vertically so that the Lower Cross Bar with Center Bracket is positioned approximately 1" (2.5 cm) away from the top of the Hitch Mechanism handle linkage.
- 10) This space should be just large enough to clear the linkage when you lift and lower the Corral Bike Rack™.
- 11) Double check that the Lower Cross Bar is still in the correct position.
- 12) Make sure that the smaller, bottom plate is fully secure. No pressure!
- 13) **LOOSELY** ASSEMBLE THE TOP HARDWARE. Don't forget that Loctite!
- 14) Repeat Steps 15 through 18 of Section 2, Part 2 right above to assemble the Lower Cross Bar Center Bracket. Mind that gap!



Part Four: Wheel Basket Assembly

- 1) Locate the Wheel Baskets with Basket Clamps (D) and Riser Brackets (E). If you selected a 2-bike rack, you should have 2 of each. If you selected a 4-bike rack, you should have 4 of each, and so on. You see what we did there.
- 2) Using the ¼" Allen wrench remove each of the four ¼" socket head screws from the very top of the Riser Bracket.
- 3) Position the Riser Bracket so that the space where the socket head screws attach is on top and facing upwards.
- 4) Now, hold the Wheel Basket with Basket Clamp so that the longest section is on the left, and the shortest section on the right.





- 5) Align the outside of the Basket Clamp to the inside of the Riser Bracket.

- 6) Insert the socket head screws through the openings in the Basket Clamp and into the holes provided, at the top of the Riser Bracket.
- 7) Then, reassemble the hardware, tightening each of the 4 screws little by little, using an alternating pattern. Don't forget to add a little Loctite (blue)!
- 8) Repeat for all Wheel Basket and Riser Brackets.

Part Five: Wheel Basket Installation

- 1) Now it's time to set your spacing and attach your Wheel Basket Assemblies to the Upper Cross Bar. The spacings below are recommendations and can be adjusted as desired.
- 2) Looking at your Wheel Basket Assemblies, locate the ¼" socket head cap screws on the base of the Riser Brackets.
- 3) Using your ¼" Allen wrench, remove each of the four screws, allowing you to fully separate the front-bottom of the Riser Bracket.
- 4) Hold the Riser Bracket so that it is angled left at approximately a 20° angle, with the open section facing towards you.
- 5) Then, using the table below, place each of the Riser Brackets with Wheel Basket Assemblies on the back of Upper Cross Bar in the correct locations.



Riser Placement	5-Bike Rack	4-Bike Rack	2-Bike Rack
Rightmost Riser	Right side, very end of crossbar	Right side, very end of crossbar	Right side, very end of crossbar
Leftmost Riser	Right side of riser should be 6.5" (16.5 cm) from left end of crossbar	Right side of riser should be 6.5" (16.5 cm) from left end of crossbar	Right side of riser should be 6.5" (16.5 cm) from left end of crossbar
Riser Spacing*	13.75" (35 cm) from same point on riser, to same point on next riser	17" (43 cm) from same point on <u>end</u> riser, to same point on next, inner riser	Not applicable

* When measuring spacing between riser brackets, make sure to measure from one spot on one bracket to the exact same spot on the next bracket.



6) Once you have the Riser Bracket placed correctly, replace the Riser Bracket front-bottom and insert the four ¼" socket head bolts, adding a little Loctite (blue) as you go.



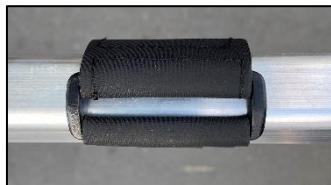
7) Finally, use the ¼" Allen wrench to tighten the bolts in an alternating pattern.

8) Repeat for all Wheel Basket Assemblies, setting each Riser Bracket in the correct location.

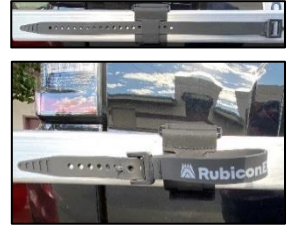
9) We believe in you. You can do this!

Part Six: Upper Lasso, Lower Lasso, & Velcro Strap Assembly

- 1) Locate the provided Upper Lassos (H), Lower Lassos (I), and Velcro straps (J).
- 2) We will first install the Upper Lassos to the Riser Brackets on the Upper Cross Bar.
- 3) Stretch the square end of the Upper Lasso over the middle bolt on the front of the Riser Bracket.
- 4) Then, secure the other end to the back of the Riser Bracket.
- 5) Repeat for each Wheel Basket Assembly.
- 6) Next, grab a Velcro strap and hold it so that the tab is on top and facing away from you.
- 7) Slide it over the left end of the Lower Cross Bar, with the tab pointing back, towards the vehicle.
- 8) Repeat Step 7 for all remaining Velcro straps, according to your Corral Bike Rack™:
 - a. 2-rack: 1 on the left, 1 on the right
 - b. 4-rack: 2 on the left, 2 on the right
 - c. 5-rack: 2 on the left, 3 on the right
- 9) Next, align each Velcro strap so that it is roughly below the open side of its corresponding Wheel Basket above. This may need to be adjusted depending on the geometry of your bike, and the bikes next to it.
- 10) Position the strap so that the plastic buckle is on the top edge of the Lower Cross Bar, tighten, and adhere the Velcro. This will keep it held securely.
- 11) Repeat steps 9 and 10 for all remaining Velcro straps.



- 12) Finally, find that Lower Lasso and run it through the fabric loop with the tail end pointing ***towards*** the Center Column. The tab end should be facing back, towards the lower cross bar.



- 13) Secure it.

Section 3 – Corral Bike Rack™ Use, Tips, & Tricks

If you get stuck or have questions, feel free to contact us at 916-891-5922. We are happy to help!

Part One: Raising and Lowering your Corral Bike Rack™

ATTENTION:

Depending on the size, type, and number of bikes, there may be a substantial amount of weight (150+ lbs/70+ kg) to lift.

Practice proper lifting technique to avoid injury.

If you do not feel confident lifting alone, ask a friend for help!

- 1) To lower your Corral Bike Rack™ into the lean-to-load position, disengage the safety trigger and pull the handle up.
- 2) Using your other hand, or a friend, ***slowly*** lower the Corral Bike Rack™.



- 3) When finished, gently raise the Corral Bike Rack™ and push handle down with your hand or foot until you hear the satisfying “kachunk.” This sound indicates that your Corral Bike Rack™ is secured and that safety is re-engaged.

Note: To keep things running smoothly, make sure to clean and lube up all moving parts between trips with a little WD-40!

- 4) A simple shake test is a good way to ensure everything is tight. Just push a few times on the side of the rack to check the stiffness of the system. If anything is moving more than expected, check the trouble shooting section at the end of the Corral Bike Rack™ Manual.
- 5) Finally, a friendly reminder. While out adventuring, make sure to check all Corral Bike Rack™ main attachment points each day to ensure the safety of you and others.
 - a. Corral Bike Rack™ Safety Latch Cam-Over Tension
 - b. Upper and Lower Lassos
 - c. Velcro Straps
 - d. Let's Go Aero Silent Hitch Pin
 - e. And, if using items such as an extension, Swing-Away, or anti-rattle mechanism, double check those too!

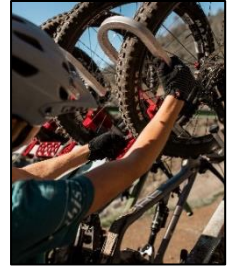
Note: Cam-Over tension of the main safety latch mechanism is set from the factory and should be ideal out of the box. After some use it may be necessary to adjust this. Instructions are in Section 3, Part 4, below.

Part Two: Placing and securing bikes on your Corral Bike Rack™

- 1) Pull the safety trigger to activate the lean-to-load position.
- 2) Using your second hand, gently guide the rack into the lowered position.
- 3) When loading bikes, make sure to load from right to left, with your largest bike on the right-hand side, down to your smallest on the left.
- 4) To do this, stand directly behind your bike and pull it up vertically, into a wheelie position.
- 5) With your hand on the handlebars, push your knee or thigh against the seat, helping you gently lift the bike as you guide it into the Wheel Basket.
- 6) As you do so, allow the wheel to turn to the left for proper placement.



- 7) Pull down on the front tire to ensure it is fully seated in the Wheel Basket.
- 8) Next, run the Upper Lasso along the front of the rack, under the tire, and up and through the wheel to the attachment point on the vehicle side of the Riser Bracket.



- 9) Secure it tightly to the bolt on the back side of the Riser Bracket.
- 10) Wrap the Lower Lasso around bottom wheel of bike and secure tightly.

- 11) Carefully lift the rack and re-secure the safety latch.



Part Three: Removing bikes from your Corral Bike Rack™

- 1) Pull the safety trigger to activate the lean-to-load position.
- 2) Gently lower the rack. Remember to use your second hand to help lower the rack slowly, and safely.
- 3) Unsecure the Lower Lasso on the lower wheel of each bike.
- 4) Unsecure the Upper Lassos on the upper wheel of each bike.
- 5) Carefully lift the bike out of the Wheel Basket and lower to the ground.



- 6) Once all bikes have been removed, carefully lift the rack.
- 7) Re-secure the safety latch.
- 8) Put on that helmet and ride into the sunset doing a wheelie!
Seriously, wear a helmet. #WeCare.

Part Four: Adjusting Safety Latch Tension

Note: This should be checked before EVERY use, with the Corral Bike Rack™ in the upright position. If the closure mechanism feels loose, adjust it! #SafetyFirst

- 1) Pull the safety trigger to activate lean-to-load position.
- 2) Gently lower the rack.
- 3) Attach one crescent wrench to the lower nut, at the base of the rod.
- 4) Attach a second crescent wrench to the rod above.
- 5) While holding the lower wrench, rotate the upper wrench counterclockwise to loosen.
- 6) Then, continue to rotate the rod counterclockwise, lengthening the mechanism, and increasing the tension.
- 7) Once you have lengthened it the desired amount, hold the upper wrench securely in place and tighten the lower nut using the lower wrench. This will secure everything in place.
- 8) Finally, secure the safety latch. If you find it now has too much tension, repeat Steps 1 through 7 until the desired tension is achieved.
 - a. Counterclockwise - Lengthens and increases tension.
 - b. Clockwise - Shortens and decreases tension.



Section 4 – Troubleshooting

Part One: Troubleshooting Solutions Table

<u>Problem</u>	<u>Try This:</u>
Hitch Mechanism is moving inside the receiver	<ul style="list-style-type: none"> • Ensure LGA Silent Hitch Pin is installed correctly (page 2) and torqued to recommended spec. • If using an extension, Swing-Away, or other hitch-based add-on, ensure the movement is not originating there.
Corral Bike Rack™ is moving inside Hitch Mechanism	<ul style="list-style-type: none"> • Verify that the Philips head screw at the base of the Center Column is fully tightened. • Verify that the 4 small set pins on the sides of the Hitch Mechanism are fully secure as well.
Hitch Mechanism safety trigger does not stay latched or is very easy/hard to latch	<ul style="list-style-type: none"> • First, remove any dirt or grime present. • Next, grab some WD-40 and lube it up! • If that WD-40 didn't do the trick, follow the instructions on page 16 to adjust main latch tension. After some use, it is common for it to need a slight adjustment.
Lower Cross Bar does not clear the Hitch Mechanism when lowering or lifting.	<ul style="list-style-type: none"> • Loosen the 4 bottom bolts the Lower Cross Bar Center Bracket using the 5/32" Allen wrench. • Slide that Lower Cross Bar up the Center Column slightly to provide additional clearance. • Add a little Loctite (blue) to each bolt and tighten, using a crisscross pattern.

Corral Bike Rack™ Manual

