



TA Targets Gen 3 Phoenix Plate Rack Instructions



The Gen 3 Phoenix Plate Rack is a highly refined and capable plate rack system. It is designed for a long service life with very little maintenance required. We offer the Phoenix in TWO Variations:

- Gen 3 Phoenix with 3/8" AR550 8" Round Paddles: PHX-38-G3
- Gen 3 Phoenix with 1/2" AR550 8" Round Paddles: PHX-12-G3
- Additionally, each Phoenix CAN be purchased with an OPTIONAL spring kit.

Please note: Both the 3/8" and 1/2" Paddles share the same distance ratings. The 1/2" Simply offer a slight upgrade in overall strength and lifespan. See our distance ratings section of this manual.

A few important safety notes:

- ALWAYS follow our safe shooting guidelines
- ALWAYS be sure to operate on a safe and approved range.
- ALWAYS be sure you are using your targets and firearms properly.
- ALWAYS wear required personal protective equipment (eye protection, ear protection, proper clothing, etc.)
- ALWAYS be sure that your targets are stable and set up in the proper manner.
- ALWAYS BE CERTAIN WHAT IS BEYOND YOUR TARGET. Missed rounds that are not FULLY captured by a backstop can cause serious property and personal injury including death. It is YOUR responsibility to ensure safe shooting conditions.
- Under NO circumstances should you misuse your steel targets or shoot on a range lacking proper backstops.
- Prior to using this product, you MUST read our safe shooting guidelines. YOU are responsible to ensure you use this product properly and in a safe manner.
- Always assume metal and wood target components are sharp. Handle with working or leather gloves only

- Always assume lead is present. Wear protective gear and ALWAYS wash hands after handling any target component.
- This is NOT a full safety disclosure statement. read our safe shooting and target wear and tear manuals PRIOR TO ENGAGING IN STEEL TARGET SHOOTING ACTIVITIES.
- The Phoenix Plate Rack is EXTREMELY heavy. It is NOT designed to be setup with one person alone. We recommend at MINIMUM 3 people to assist in setup. Improper setup can result in bodily harm, injury, or death.

What is included with each Phoenix Plate Rack:

- (one) Fully Assembled Phoenix Gen 3 Shield
 - o This shield has the baskets, reset mechanisms, and all other components already bolted and installed onto the shield.
- (Six) Paddles Per Your Order
 - o 3/8" Paddles – Or –
 - o 1/2" Paddles
 - o Note: You CAN order paddles separately during checkout or at a later date if desired.
- (Two) Complete Breakdown Target Bases (Including Two Paper Holders for cardboard target mounting)
- (Two) Breakdown Base Extension
- (Two) Adjustable Armored Posts
- All Hardware Necessary for Assembly
 - o See Breakdown Base instruction manual for specific hardware included with each breakdown base: <https://tatargets.wpenginepowered.com/wp-content/uploads/2023/04/TA-TARGETS-SINGLE-BREAKDOWN-BASE-MANUAL.pdf>
 - o See Breakdown Base Extension instruction manual for specific hardware included with each extension: <https://tatargets.wpenginepowered.com/wp-content/uploads/2023/09/BDB-30-R1-BASE-INSTRUCTIONS.pdf>
- Optional Spring Kit: We offer a spring kit that is OPTIONAL. IF purchased, you will also receive the spring kit. One spring kit will service ONE Phoenix.

A Few General Points to Remember:

- *The Gen 3 Phoenix Plate Rack is a VERY heavy system. Three people MINIMUM should be present for setup to avoid injury or dropping of product.
- **Distance Ratings remain the same regardless of the thickness of the material regarding this system.
- ***Paddles can create a pinch hazard. Keep children away from this system during setup and use. Always be sure fingers and body parts are CLEAR of the paddles and gussets when installing.
- ****Used Phoenix Plate Racks and components can have sharp edges from fragmentation and bullet impacts. Always handle with gloves with EXTREME care. Always assume you will experience sharp edges.

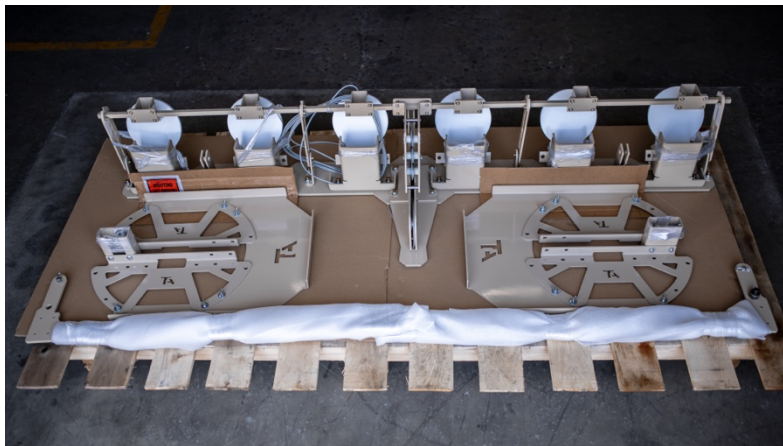
How We ship the Phoenix Plate Rack

In almost all scenarios we will ship the Gen 3 Phoenix on a 48"X96" +/- skid. We fully assemble the shield, paddles, reset mechanism, and cable. You will also find your bases and armored posts fully assembled. We do this to ensure all components are accounted for and in their places for transit.

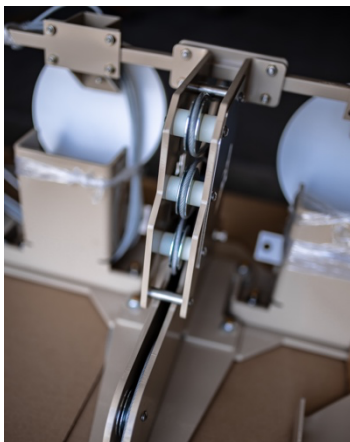
Please Note: Immediately upon receiving your shipment, visually inspect ALL components for damage. If damage is found, REFUSE delivery of the rack. It will be returned to us, and this will greatly expedite the process for us to correct the situation. It is NORMAL to see the cable somewhat out of place around the pulleys. This is NOT damage, and it is very easy to correct. Simply make sure the cable is routed properly over all the pulleys.

Depending on products ordered and your destination, we may SOMETIMES ship multiple skids. Sometimes we may need to even ship some products via ground shipping.

Your skid will look similar to the photos below:



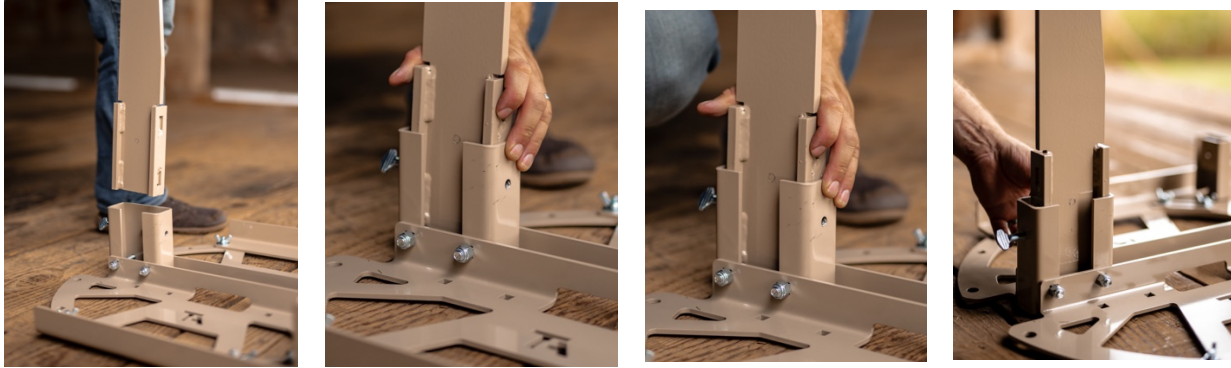
Before moving onto the next steps of installation, verify the cable routing is proper as discussed previously. See the picture below and notice how the cable is properly housed around each pulley. If the cable has "jumped the pulley", now is a good time to correct it. It can also be corrected after setup. Just BE SURE to fix it PRIOR to using the reset mechanism.



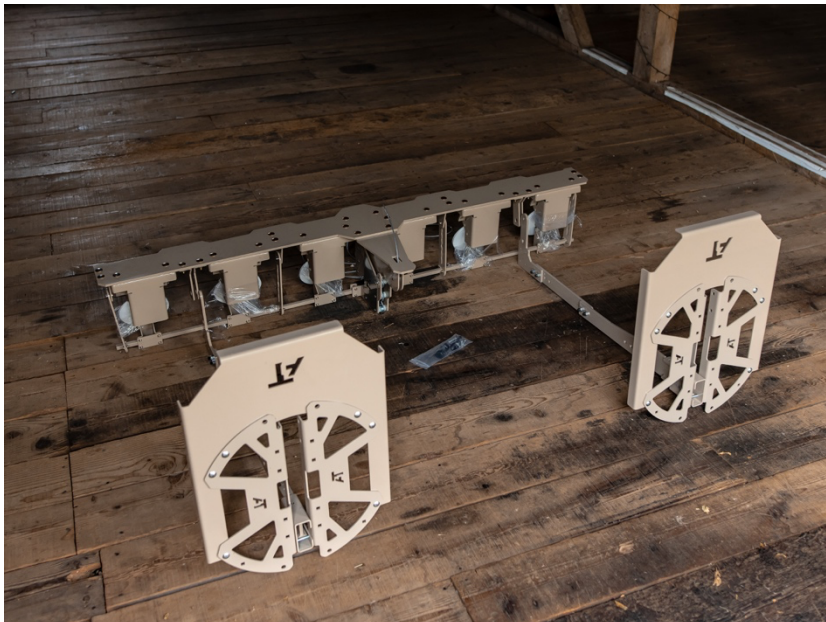
Assembly of your Phoenix Plate Rack:

- 1.) Take full inventory of your order. Be sure everything is accounted for. If anything is missing, email us at info@tatargets.com PRIOR to continuing with the setup process.
- 2.) Cut/Remove any shrink wrap or banding from the skid. Keep your feet and hands back in case anything shifts on the skid. **KEEP THE PADDLES WRAPPED UP UNTIL SETUP IS COMPLETE.**
- 3.) Remove the Breakdown Bases with installed Extensions and set the bases in the general area where you will be setting up your Phoenix Plate Rack
- 4.) Unpack the Armored posts. Keep them close and ready to install into the base and the shield assembly.

- 5.) Install the armored posts into the Breakdown Bases as shown below. Be sure to FULLY tighten the thumb screws at this time. Attempting a Phoenix setup with loose posts or thumbscrews is very dangerous. The posts MUST be fully tightened so they do not have excess fore and aft movement.



- 6.) At this point it is time to remove the Phoenix Shield from the skid and place it generally where you would like the shield to be set up.
- a. THREE people minimum should be used for this step.
 - b. The shield assembly is VERY heavy and weighs around 375 pounds. HANDLE CAREFULLY.
 - c. ALWAYS keep hands, feet, and other body parts out from under the shield when moving to avoid a crush situation.
- 7.) Lay The Phoenix shield so that the shield itself is facing the sky. See below image:
We lay the shield down in this manner as it will allow the installation of the adjustable armored posts (as shown left).



You will want to take the bases with the posts installed and lay them in the orientation you see in the photo. This will properly align the posts with the holes in the brackets in the phoenix shield.

Having other people around to help is very important and makes the setup process so much easier.

8.) Align the post tops with the angles on the back of the Phoenix as shown in the photos below:



There are two pieces of hardware required for each post to be installed. There is (one) clevis pin and clip that goes into the hole closest to the shield. Then there is a $\frac{3}{4}$ " structural bolt that goes into the larger hole. We ship the bolts and pins along with the skid. Install the clevis pin, then install the $\frac{3}{4}$ " Bolt. Make sure the clevis pin clip is in place and then tighten the $\frac{3}{4}$ " nut onto the bolt to approximately 20 ft/lbs. It just needs to be snug. There is no need to over torque it.

***At This point, the shield and posts and bases are all connected to each other. The next step will be lifting the Phoenix into its position. ***

9.) With MINIMUM TWO PEOPLE, rotate the Phoenix Shield from the rear into its standing position. Be VERY careful during this step. While we show two people doing this, we recommend at minimum THREE people to set this system up. Here are some photos of setting it into position:

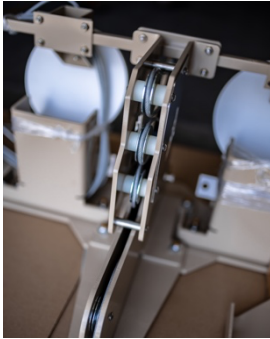


***Safety Considerations:** When lifting, be sure to use proper form to avoid injury. If you are in poor health or are unable to lift heavy objects, DO NOT ATTEMPT INSTALLATION YOURSELF! Serious bodily injury can occur. The Phoenix Plate rack FULLY assembled weighs approximately 400-450 pounds depending on configuration. EXTREME caution MUST be used when setting the shield into position. Prior to lifting into position verify that all bolts on the bases, posts, and post connections are properly tightened. Tighten ANY bolts that appear loose to avoid a dangerous situation during the setup. Keep all body parts and personal items OUT from under the shield and components while assembling.

10.) Final Check of system prior to use:

At this time the shrink wrap around the paddles can be removed. Users should verify smooth paddle operation at each paddle location. Double check that all paddles are centered in their baskets and that there is nothing binding the paddle operation. This is also a good time to become acquainted with the system and how it goes together. Look over all the connections and hardware. Visually inspect for anything that looks loose or out of place.

Prior to pulling the cable, it is vitally important to make sure the cable is routed properly around all the pulleys. If the cable slipped off during transit, be SURE to align it again properly. Pulling the reset cable while misrouted can result in kinking the cable. This ultimately leads to a less smooth reset.



In this photo you can clearly see that the cable is routed properly around each pulley.

11.) Resetting the Phoenix for the First Time:

Now that the setup is complete, we recommend that you reset the system a few times WITHOUT the weight of the paddles. Leave the paddles in the upright position and make sure when pulling the cable, you experience a smooth motion.

A few things to keep in mind:

- a.) The reset mechanism at first MAY experience some hang ups.
- b.) The reset mechanism, over time, may benefit from LIGHT lubrication on the pivot points.
- c.) The Reset mechanism, once break in is complete, should operate smoothly and return to resetting position by gravity alone.
- d.) You should verify all hardware connections prior to shooting every time. Loose or misaligned parts CAN result in inconsistent resetting.
- e.) If the reset feels VERY tight, double check the cable condition and the routing of the cable over the pulleys.

12.) Shooting the Phoenix Plate Rack:

After final visual inspection, it is time to shoot the Phoenix. Prior to doing this, please read the following instruction manuals:

- a.) Safe Shooting: <https://tatargets.wpenginepowered.com/wp-content/uploads/2020/08/SAFE-SHOOTING-UPDATED.pdf>
- b.) Target Wear and Tear: <https://tatargets.wpenginepowered.com/wp-content/uploads/2020/08/TARGET-WEAR-AND-TEAR-DOCUMENT.pdf>

You will need to adjust your paddles on the first range day to properly calibrate for the calibers you are shooting. To do this, simply follow the distance guidelines on the following pages. Engage a single paddle with one round and analyze the reaction. Paddles should be set leaning forward enough that a bullet will knock it over easily, but not react violently.

Each caliber will be slightly different, but you should be able to find a “happy medium” setting that works well for your needs. It is acceptable if the paddles don’t fall as smooth the first few engagements. A small break in period is acceptable due to the powder coat finish.

These images show the adjustment screw behind EACH paddle:

Utilizing a 9/16" open end wrench and a 9/16" socket (or a second wrench), users can adjust the forward lean of the paddles. See photos below of the adjustment bolts. EACH basket has an adjustment bolt just like this for paddle lean adjustment.



When adjusting the paddles, users should consider the following:

- More forward lean towards the shooter means LESS wear and tear on the paddles, especially with rifle calibers.
- Paddles should always be adjusted to the same lean angles for consistency.
- Each caliber will vary. It is normal to have to adjust the bolts the first few times you shoot your new Phoenix Plate Rack.
- Setting the screws too far back MAY result in multiple paddles falling over when a single paddle is struck. There is a balance that needs to be found.
 - o Too steep will result in paddles that don't fall over.
 - o Too shallow can result in more wear and tear on the paddles and can make multiple paddles fall over, even if a SINGLE paddle is hit.
 - o A good setting will be one that gently falls over when struck with your lightest caliber but isn't violent when utilizing your heavier calibers.
- Avoid setting your paddles in a way that results in a violent knock down. This will result in more wear and tear on the system and components and can lead to premature failures.

Paddle Maintenance:

Paddles should be inspected EACH and EVERY range day prior to engaging the target system. If cracks are evident, discontinue use of the Phoenix until replacement or remove the damaged paddle to not cause a safety concern. Paddles exhibiting surface blemishes wider than 3/16" diameter and deeper than 1/8" diameter should be replaced. SMALL SURFACE BLEMISHES OR IMPRESSIONS SMALLER THAN THIS ARE NOT A SAFETY CONCERN. More information is provided in the acceptable ammunition section.

Paddles are held to their cross bars with TWO 1/2" Grade 8 carriage bolts. Paddles can be unbolted and flipped throughout their lifespan to extend their service life. We recommend rotating the paddles every 3 months or 5,000 rounds of ammo on the system.

13.) Distance Ratings and acceptable Calibers:

- 3/8" AR550 Paddles: The 3/8" AR550 paddles are designed to function with centerfire pistols and LIGHT rifles. This includes .223/5.56 NATO, 300 BLK, and 7.62X39.
 - o Rimfire Rifles and Pistols: Acceptable for use, however these calibers MAY not knock over paddles, even at maximum adjustment.
 - o Centerfire Pistols: (9mm, .40 S&W, 45ACP, 10mm and similar): 10 yards
 - o Centerfire Magnum Pistols: (357, 44magnum and similar): 25 Yards
 - o Light Rifles: (.223/5.56 NATO, 300 BLK, and similar): 50 yards
 - o Larger Rifles (Limited Use): 308, 6.5CM and similar are acceptable over 200 yards. If the paddle reacts violently, distance MUST be increased and/or the paddles must be angled forward at a steeper angle to reduce reactivity of the paddles.
- 1/2" AR550 Paddles:
 - o Rimfire Rifles and Pistols: Acceptable for use, however these calibers MAY not knock over paddles, even at maximum adjustment.
 - o Centerfire Pistols: (9mm, .40 S&W, 45ACP, 10mm and similar): 10 yards, but users should note that light calibers like 9mm, 38 SPL and 40 S&W may need further adjustments (less steep forward lean) of the paddles to get consistent knock downs.
 - o Centerfire Magnum Pistols: (357, 44magnum and similar): 25 Yards Users should note that down loaded ammo for these calibers may require a LESS steep forward lean of the paddle.
 - o Light Rifles: (.223/5.56 NATO, 300 BLK, and similar): 50 yards
 - o Larger Rifles: 308, 6.5CM and similar calibers are acceptable at 100 yards.
- When using the spring reset kit:
 - o All distance ratings will remain the same, even when using the spring reset kit.
 - o Spring tension is NOT adjustable.
 - o Smaller, lighter calibers MAY NOT fully activate the spring.
 - Over time and as the spring breaks in, more movement will be seen.
 - o The springs for the reset kit are a consumable component that WILL wear out over time with use. Customers can purchase a kit of replacement springs if needed at any time from our customer service team.

Proper Ammunition for the Phoenix Plate Rack:

All distance ratings above are calculated through extensive research and testing. Rifle distances are calculated utilizing ammunition with a muzzle velocity LESS THAN or equal to 3,000 FPS. Utilizing ammunition with faster muzzle velocities will require further distances.

- Jacketed, lead core ammunition is acceptable at rated distances so long as the muzzle velocity is equal to or less than 3,000 FPS. For ammunition FASTER than 3,000 FPS, increase distance by 25% and test ammo on target.
 - o If no blemishes are seen, continue using system at a 25% distance increase.
 - o If marks or craters are seen, increase another 25% distance over the recommended distance and retest.
 - o If no damage is seen, maintain this distance for this rifle and caliber.
- Hollow point/Expanding ammunition is acceptable. During impact the hollow point, with some calibers, CAN super heat and cause a minor pit. This is normal and not unsafe, so long as the pit is less than 3/16" diameter and/or less than 1/8" depth.
- Solid copper ammunition can often be utilized but you must fire a test round on target prior to utilizing the system with solid copper ammo.

- Under NO CIRCUMSTANCES should this system be used with ANY armor piercing, incendiary, tracer, or penetrator ammunition. Examples include M855 & SS109.
- Bi-Metal jackets are acceptable so long as the CORE of the bullet is lead.
- Sparking MAY occur with bi-metal jackets and can be a fire hazard. Do NOT use bi-metal ammunition on ranges with high risk of forest or ground fires starting.
- Shotgun slugs: Shotgun slugs can be used on this system, but users should maintain a 100 yard distance.
- Shotgun Shot: Birdshot and buckshot are acceptable.
 - o Bird Shot: 10 yards
 - o Buck Shot: 25 yards
 - o Under NO circumstances should the Phoenix be used with stainless steel, tungsten, or copper shot. ONLY lead shot is acceptable.

If you have ANY questions about your preferred ammunition, contact us PRIOR to shooting your target system at info@tatargets.com.

Shooting the Phoenix Plate Rack:

Once fully set up and in position, it is time to enjoy the Phoenix.

- Ensure you have a backstop HIGHER than the paddles to catch stray rounds or missed rounds.
- Verify system is in good and proper condition according to the details in this manual.
- Ensure you have approved wrap-around eye protection (not just sunglasses or prescription glasses)
- Be sure to wear approved hearing protection.
- Ensure your ammunition is acceptable and proper construction.
- Ensure you are at the recommended distance for your caliber.
- Wear long pants and close toe shoes.
- Once range is confirmed safe, follow the manufacturer instructions for the firearm you are using.
- Engage the target system STRAIGHT ON (perpendicular to the shield)
- Knock down the paddles.
- Utilize the cable to reset the paddles by pulling the cable away from the system.
 - o The cable takes considerable force the first times using it.
 - o You must pull the cable with enough momentum to reset the paddles. Do not be discouraged if you cannot do this the first few times. It may take some practice.
 - o Always assume the cable will have sharp edges. Wear gloves at all times while resetting the cable.
- Do not intentionally shoot the shield, pulley guard, or components behind the shield.
- Double check hardware the first few times using the Phoenix to ensure no parts are working loose.

Optional Spring Kit Installation and Use:

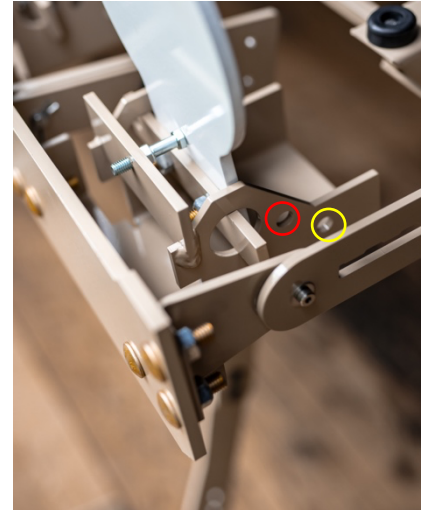
Our customers can separately purchase a spring kit which automatically resets the paddles when struck. This spring kit installs with NO tools and does not affect the reset mechanism whatsoever. In other words, the spring kit adds spring reset capability when you want it without a lengthy installation process.

What is included with the spring reset kit:

- (6) Springs
- (12) Clevis Pins
 - o 6 pins will be used for spring mounting.
 - o 6 pins will be used for spring to rest against
- (12) clips for clevis pins
- Bushings to keep the spring centered.

Installing the spring reset kit:

- Behind the paddle in the sides of each basket are holes that exist to install the spring reset kit. See image to the right:
 - o Red circle is the pin that will house the bushings and spring.
 - o Yellow circle is the spring rest pin.
- Install the first clevis pin WITH NO BUSHINGS into the hole marked YELLOW on the image to the right. This pin receives no bushings or spring.
- Install clevis pin clip onto this pin.
- Partially slide clevis pin through one side of the basket at the hole circled in red.
- Install HALF the bushings, then the spring, then install the remaining HALF of the bushings.
- Continue sliding the pin through the OPPOSITE side of the basket.
- Install the clevis pin clip.



This assembly will effectively make the paddles reset when struck. The bushings will keep the spring mostly centered on the paddle. The second clevis pin is where the pin rests against to create tension. The other leg of the spring will simply rest against the paddle.

Note: Springs CAN be doubled if using larger calibers, but smaller calibers may not move the paddles.

Note: Springs will wear out over time. Purchase replacements on our website.

Assembling Breakdown Base Extensions if you had to disassemble them or we had to ship them loose:

The Breakdown Bases and Extensions in almost all cases ship assembled for Phoenix Orders. If we had to ship yours disassembled, please follow the instructions for assembly at the following user manuals:

- Breakdown Base Assembly: <https://tatargets.wpenginepowered.com/wp-content/uploads/2023/04/TA-TARGETS-SINGLE-BREAKDOWN-BASE-MANUAL.pdf>
- Breakdown Base Extension Assembly: <https://tatargets.wpenginepowered.com/wp-content/uploads/2023/09/BDB-30-R1-BASE-INSTRUCTIONS.pdf>

Assembling the Adjustable Armored Posts:

In almost all scenarios we ship the Armored Posts assembled when we ship a Phoenix Rack. In the event that circumstances demanded that we ship the posts broken down, you will need to assemble. Please follow the instructions in our Armored Post manual.

- Adjustable Armored Post Manual: <https://tatargets.wpenginepowered.com/wp-content/uploads/2023/05/ADJUSTABLE-ARMORED-POST-MANUAL.pdf>



Maintenance and Care:

The Phoenix is designed with the utmost care. When utilized properly, maintenance will be MINIMAL. The front shield and pulley guard are both 3/8" AR550 material, which will deflect low impacting rounds. These shields also protect components behind the shield. All materials and components BEHIND the shield are mild or stainless steel. These hidden components WILL be damaged if struck by incoming rounds. It is vitally important to always engage the target in a way that eliminates the possibility of shooting parts behind the rack.

Even when utilized properly, the Phoenix may need occasional maintenance and care. Here are some tips:

- Always check torque and condition of fasteners prior to use.
- Replace faulty or broken hardware if any exist.
- Lubricate LIGHTLY parts that pivot, especially if the rack is to be kept outside for long periods of time.
- Always inspect the cable prior to use. If the cable shows signs of wear, replace immediately.
- Touch up bare metal areas with cans of our touchup paint (or any type of paint you like)
- Double check posts are tight prior to engaging
- Verify bases are tightened properly
- Replace any components that are broken or worn out early to avoid more serious damage to the system
- If you ever have questions about the condition of your Phoenix Plate Rack, contact us via email at info@tatargets.com.

Paddle Replacement:3/8" Paddle P/N: PHOENIX-38-SINGLEPADDLE1/2" Paddle P/N: PHOENIX-12-SINGLEPADDLE

The most common wear item will be the paddle. The paddles are held into place with TWO grade 8 carriage bolts and TWO locking nuts. The paddle bolts to a crossbar which keeps the paddle locked into the basket. To replace a paddle:

- Lay the paddle flat in the basket to access the nuts.
- Use a 3/4" Deep socket and ratchet to loosen the lock nuts. This may take some torque to remove as they are locking nuts.
- Remove hardware, remove paddle.
- Align new paddle with existing crossbar (NOTE PADDLE AND CROSSBAR ORIENTATION)
- Install NEW 1/2" Grade 8 carriage bolts (must be carriage bolts, do not use hex bolts)
- Install NEW 1/2" Locking nuts. Torque to 20-foot pounds (Or tighten hand tight)

Basket Replacement:P/N: PHX-14-BASKET-R5

If your Phoenix Basket receives damage from someone engaging the system from an angle, you can replace the baskets. Baskets can be individually replaced as needed. You do NOT have to remove ANY of the resetting mechanisms to replace the baskets. Baskets are held to the front shield with TWO 1/2" Grade 8 carriage bolts and lock nuts. Please note: Follow the instructions above to remove the paddle of the affected basket prior to removing the basket.

- Remove paddle per instructions above.
- With a second helper, remove the two bolts holding the basket to the front shield.
- Remove basket from the Phoenix assembly.
- Install TWO new Grade 8 carriage bolts through the front shield.
- With a helper align the new basket into position, paying close attention that it is lined up with the other baskets.
- Tighten the 1/2" locking nuts and torque to 20-foot pounds (Or hand tighten as tight as safely possible if you do not have a torque wrench)

PLEASE NOTE: Further maintenance is covered in an in-depth maintenance manual. The vast majority of customers will never need to do further maintenance to their system. If you find that you do need further instruction or components, contact us for a service manual for the Phoenix Plate Rack.

If you have any other questions, please feel free to email our team and we'll be able to further assist you with setting up your new target system.

Customer Service Email: info@tatargets.com

All other information can be found: <https://tatargets.com/ta-targets-instruction-manuals/>