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Instructions

T-Rex/Raptor front rest by Rodzilla Shooting Products

Introduction

First, let me say, thank you for purchasing my front rest. This rest was designed and developed over several years of testing at F-Class matches around the country. As a long-range competitor, I have used most front rests available over the years and they all have features I like, but also have deficiencies and lack features I have wanted in a front rest. I started by making a list of features I would love to see in one rest. The original T Rex met every one of these goals and I even discovered a few unique features along the way. When it comes to my personal shooting, I have never been one to choose economy over quality and generally feel that "good is not cheap and cheap is not good" For the front rest I put my name on I did not start with a price point in mind, but instead just started with a blank page and set out to build the very best front rest I could. This T Rex/Raptor is the BEST I can build.

Dimensions:

Footprint of the original solid base T-Rex base is 12.5" wide and 10" front to back. The folding Raptor is 19.5" wide and 9.5" front to back.

Vertical adjustment of the bridge is 5.125" for both models. Weight of the T-Rex is 17lb, with the Raptor being 15Lbs.

Protective finishes

- The Raptor folding base, the new T-Rex base plate, and the bridge assembly is all machined from solid 6061-T6 aluminum. Hard anodizing in matt black is applied to the aluminum parts for long-term durability and good looks.

Features and Adjustments:

The Rodzilla 5-Axis Top

- Both models utilize a very innovative 5-Axis top that features a rotating top plate. This feature means you no longer need to have the rest set squarely to the target to get a consistent set up from one relay to the next. The top plate rotates on Teflon bearing plates which corrects any misalignment issues therefore avoiding binding during tracking under recoil for less vertical shot disbursement. This feature also maintains a consistent amount of breakaway or drag when you move your rear bag left to right to align with your target. Tracking under recoil is also consistent from one set up to another throughout an entire match for improved scores. Because there is zero play in the Teflon bearing plates there is no

need to lock the top plate in position once you are aligned on your target. Just line up with your target and start shooting.

- The Rodzilla 5-Axis tops feature a choice of several ways to guide your rifles forearm.

The two styles of adjustable width blocks are explained below. For both styles we use a pair of very small (one inch long) sand bag assemblies mounted on either side. This design provides several advantages over the more traditional top bag arrangements. First, the sand bags toggle fore and aft. This feature means you no longer need to level the front leg of the rest since the sand bags self-level every time for a consistent contact patch. Secondly, the amount of sand compression is limited and controlled so settling unevenly is not possible which keeps the firearm level, left to right, from the first shot to the last shot of a string unlike other rests. Also, this unique sand rail configuration creates a very low contact patch with very little drag and offers a high level of consistency in tracking from relay to relay.

Note: the mounting bolts for the sand bag rails have two threaded holes in each top block for tuning your rifle for best performance. This design feature allows you to move the sand rails closer to the stop or closer to the shooter. The high-quality bubble level on the 5-Axis top is unlike other rests that place the level under the rifle where you cannot see your level with your rifle in place. We place our level out on the outer edges so you will always have your level in view. Set it up on the left or right depending on what works best for you. There are three sets of mounting holes for the adjustable width top blocks (explained below) allowing for a gap of 1-3/4" for the narrowest gap to just over 5" for the widest gap.

- The dual forearm stops pivot radially with the top plate as well as independently and is adjustable for length on a slotted front post. The idea here is to allow the rifles forearm to bump up against two nylon bumpers so the force on both sides of your forearm is always equal. The two nylon bump stops are also adjustable for height by placing them in a series of vertical holes to best fit your rifles forearm. Note: For sporter rifles and AR style forearms we offer a set of 45-degree guide rails with felt tops for the forearm to ride on. We also offer a single forearm stop which is adjustable for height. These items are available on the home page as accessories.

Adjustable width options:

Roller/Felt Combination Top Blocks

- The combination top blocks have Delrin guide rollers on one side or flip them 180 degrees to use the felt contact surfaces on the other side. The rollers have the benefit of low friction and the felt variation allows for a bit of preload without excessive drag which also helps to dampen the harmonics of the stock. Your stock might show a strong preference for one or the other options.

Felt lined blocks (F-Class Legal)

The felt blocks feature a 1/8" thick felt contact patch for the forearm to slide on. They tend to run best with a bit of compression and provide low drag and offer great control against rifle torque. Felt will also dampen vibrations in the stock better than the roller blocks. These blocks are light weight and adjust from 1-3/4" wide to over 5" wide depending on which of three sets of threaded holes you use to attach them to the top plate.

Fixed width option:

IBS top (benchrest legal)

The IBS legal top features the same rotating top plate but uses an aluminum block to hold a one pc sand bag instead of the adjustable width top blocks/sand rail design described above. The IBS top has adjustable ends with thumb screws to tension the sides of the sand bag for a perfect fit against the forearm. We stock the new style Farley size Edgewood bags which come in 3" or 4" widths. Also, since the IBS top raises your rifle 1/2" above the Felt or Combo blocks, we use a 1/2" longer mounting bolt and spacer to raise the stop for proper fit. Again, the IBS top will only accept the new style Farley size one pc bags.

Remote vertical adjustment of the crosshairs

- The coarse vertical bridge adjustment can be accomplished while in position behind the rifle and looking through the scope. Place your hand on the ground and hold the tip of the joystick in a comfortable controlled manner. Now with the long drive rod (which is provided) engage the drive lug which rotates the pinion to raise and lower bridge. clockwise to lift the bridge on the geared rack and counterclockwise lowers the bridge on the geared rack. Locking the bridge is not necessary when the clutch is adjusted properly (see instructions below). Once the bridge is adjusted just pull back on the rod to disengage the drive rod and set it aside. You can reattach the drive rod anytime during a relay without getting out of position. The bridge travels up and down on double sealed ball bushings running on hardened steel vertical 1" posts. This design allows for very low friction and no play or movement of the bridge assembly except in the vertical plane. Note: there is also a knurled hand operated drive wheel in addition to the drive rod. This feature allows for adjusting the bridge by hand if your drive tool is not with you.

The Vertical clutch adjustment

- There is set screw on the front side (or target side) of the bridge directly in line with the geared rack and low on the bridge assembly. This set screw loads a friction clutch spring and clutch disk against the front side of the geared rack creating friction. This arrangement allows you add just enough friction to hold the weight of your rifle. For these clutch adjustments use the 3/16" Allen wrench provided and start with about 1/8 turn or 45 degrees after the set screw contacts the friction disk. It does not take a

lot of rotation on the set screw to apply a lot of friction. Just go a little at a time or it will require more force than necessary to lower and raise your bridge. The idea is to adjust the set screw/disk just enough to hold the weight of the rifle. When properly adjusted the drive rod will move the bridge up and down smoothly with low to moderate effort while looking through the scope and it will not move with the weight of the rifle, or under recoil. NOTE: We set the friction clutch to hold 15Lb which is approximately the weight of the forearm on a 22Lb rifle.

The X-Y assembly

- Unlike all other rests the T-Rex features double sealed ball bushings for vertical and horizontal movement. This design allows for very low friction of the X-Y movement. There are 4 of these ball bushings for horizontal and two more for vertical. These ball bushings are sealed and run on very hard, polished guide rods. There is no maintenance required. There are two ¼-28 thumb screws (black knobs) on the target side of the bridge on either side of the front joystick bearing housing. These two thumb screws bear against Teflon wear pads on the front of the X-Y mechanism. Adjust these two thumb screws inward (about ¼ turn after touching the Teflon wear pads) just enough to remove the small amount of play front-to back of the top and then lock them in position with the locking collars. Tightening these thumb screws will also add just a bit of resistance to the joy stick movement. We recommend making this adjustment after setting the counter balance as described below. **Note: there are 2 set screws below the two black thumb screws on the target side of the bridge assembly. Do not adjust these set screws as they are set and locked at the factory to remove the small amount of primary play in the X-Y assembly.**

Caution:

- do not over tighten these black thumb screws or you could damage the ball bushings or rods in the X-Y assembly. Only add this friction after adjusting the counter balance so your balance is not disguised by any excess friction from the Teflon wear pads. NOTE: Remember, the benefit of low friction is precision of crosshair placement.

Adjusting tension on the joy stick (vertical and rotational)

- First run the bridge up to the highest position on the vertical posts. • There is an access hole in the bottom of the bridge (on the target side) centrally located just below the round bearing retainer. You will go up through an access hole with your 1/8" Allen wrench to reach this hidden set screw. There is a second Allen set screw in the center of the bare aluminum X-Y block. Use the 1/8" Allen wrench supplied to engage these two-set screws. It can be a bit hard to get the Allen wrench to engage the forward most set screw. Back this set screw off a ½ turn to remove all resistance to the X-Y mechanism before making counter balance adjustments. After the counter balance procedure is completed, you will retighten this forward set screw to add resistance to the joy stick rotation. This adjustment is also how you add tension to hold the joy stick in the full up or down position.

Setting the counter balance for your rifle weight

- To counter balance the weight of your rifle, merely place your rifle in the rest and be sure to attach the joystick as the joystick will affect your counter balance. Now loosen the two black thumb screws on the target side of the bridge that add friction. (See the above instruction regarding X-Y friction) Also with

the 1/8' Allen wrench, back off the forward bearing set screw and the one in the X-Y block as described above to allow the joystick to freely move up and down without any added friction. • There are three counter balance set screws that preload springs in the X-Y mechanism to make the rifle float or balance. The two set screws in the center are set nearly flush with the bottom of the bridge and have the springs almost compressed to the maximum. (Just short of coil bind) there is also another long set screw sticking down from the bottom on the right side of the bridge with about ½" exposed. This screw can be turned by finger pressure. Turn this single set screw in until the weight of your rifle is neutralized or balanced. If your rifle is too light for proper adjustment back out the two center screws several turns each to remove counter balance and then readjust the longer screw up or down to fine tune the balance. With proper adjustment your joystick will bounce up from the bottom and fall from the top approximately the same amount when released. The joy stick should go equally toward the center when the counter balance springs are set perfectly. Again, by backing out the counter balance set screws the weight of your rifle will cause the joy stick to drop lower and inward with the set screws will cause the joystick to go above center. As the T-Rex has very little internal X-Y friction you will be able to achieve a perfect counter balance quickly, precisely and without the compromise between counter balance and friction we have all experienced with other front rests. NOTE: Turning in the two central counter balance set screws too far can cause the springs to coil bind and the joystick will stop short of the lowest position in the window.

Sand feet

- We offer a set of Phoenix style, or bell shaped, sand feet that fit both the Raptor and the new aluminum base T-Rex front rests. They come with a large top knob for adjustment and a locking collar to hold them in position once leveling is accomplished. They are listed on the home page as an accessory item.

Fitted case

- 5 • A custom hard case is an option for the T-Rex front rest assembly. The case is made from tough, light-weight, polypropylene copolymer. It has a rugged O-ring seal that makes it air and water tight up to 3ft deep. our case utilizes an automatic pressure release valve so that it adjusts to its environment. It is also ATA/TSA ready for airline travel. The case is lockable with comfort molded handles and spring-loaded latches and features custom cut convoluted open cell foam glued into the lid plus a 1" thick base pad glued into the bottom to lock the T-Rex from shifting around. There are two 4" thick, lift out pieces custom cut to secure the feet, tools, and base during transport. For the Raptor, we offer a soft case option when ordering or sold on the home page as an accessory item.

Maintenance

- For both the Raptor and the T-Rex There is no maintenance required other than drying the unit thoroughly if shot in the rain like any other piece of shooting equipment. Do not place the rest in a sealed case when wet. I recommend a thorough wipe down every month or two with a rust preventive,

especially on the vertical guide posts. There is no lube required or recommended beyond assembly lube in a few locations for break in purposes.

Lifetime Warranty

- Maybe the best feature of all is it is entirely made in the USA. All Rodzilla shooting products carry a lifetime warranty on workmanship and materials regardless of whether you purchased directly from us or second hand.

Exclusive to the Raptor

Retrofitting a Raptor base onto an existing T-Rex

On both the T-Rex and the Raptor, there is one take down bolt located under the base which screws into the bottom of the geared rack. This take down bolt is all that holds the bridge assembly onto the base/vertical post assembly. Remove this bolt with an Allen wrench and lift the bridge assembly off the steel T-Rex base and set the bridge assembly aside. Now set the Raptor base with the posts pointing up and the legs unfolded the way you want to shoot. Now carefully lower the bridge assembly down over the posts. Try to engaging the seals on the large ball bushings in unison and lower the bridge assembly onto the Raptor Aluminum base. Hold both the bridge and base together while reinstalling the take down bolt you removed. NOTE: you will need to rotate the legs on the Raptor to gain access to the takedown bolt.

The Raptors Folding legs

All three legs fold in and out for storage and have ball detents. The front leg has a heavy detent when fully extended and two more lighter detents when folded either way back under the base. The two primary legs have light detents when folded under the base and two heavy detents when extended, the first position is perpendicular or 90 degrees to the base and the second heavy detent stops at an additional 30 degrees. Note: for both positions (legs folded out) use the ¼" pins with the red rubber caps to lock the legs in either position. Just push the pins down through the base plate holes and into the mating holes in the legs.

NOTE: There is a set screw in the bottom of each leg (three total) that pre-loads a spring for the ball detents. These set screws should be flush with the surface of the legs, or just above flush. Too much compression on the ball and detent springs will coil bind the spring and not allow the ball to disengage the detent hole properly. Do not attempt to adjust these three set screws.

Running the two legs forward and the single leg toward the shooter

Remove the take down bolt under the geared rack and lift the bridge assembly off the posts. Rotate the bridge 180 degrees and reinstall it over the vertical guide rods. Carefully turn the assembly over or on its side and reinstall the take down bolt in the opposite side and snug it down. Now the single leg will be

coming toward the shooter and the joy stick still operates the bridge as before. UP is always UP and DOWN is always DOWN unlike other rests that are reversed when set up this way.

Modular joystick supplied with both the Raptor and T-rex

The Raptor comes with a modular joystick that allows for quickly changing from a long reach version to a shorter version by merely loosening a thumb screw and changing out the lightweight extensions.

Slide the joy stick adaptor tube (the tube with a bend and two thumb screws) over the joystick stub and snug the thumb screw. Note: If you install the adaptor tube too far onto the joystick stub it can hit the inside of the window opening which limits the travel in both the horizontal and vertical planes. Now just slip in the extension tube of choice and tighten the second thumb screw. The Raptor is supplied with one extension of choice. The longest extension is 12" and can easily be trimmed to a shorter length as needed. Just pull off the black plastic button, trim with a hack saw or tubing cutter and replace the black button. **(NOTE: be sure to only cut the painted end of the extension which the black button is attached to)**

Alternatively, you may choose to just purchase a 10" or 8" extension and change them out as needed. The extensions are ultra-light so as not to affect the counterbalance of the rest.

Also, the adaptor has 1" of adjustment and the removable extension has another inch of adjustment so you can get exactly the length you want for any rifle length. This modular joy stick will also work on the T-Rex.