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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 T-Rex base is 12.5" wide and 10" front to back. The Raptor is 19.5" wide and 9.5" front to back.

Vertical adjustment of the bridge is 5.125" the weight of the T-Rex is 23lb, and the Raptor is 15Lbs.

### **Features and Adjustments:**

#### **The Rotating 5-Axis Top**

- The T-Rex front rest has a very innovative 5-Axis top that features a swiveling top plate. You no longer need to have the feet of this rest set squarely to the target to get a consistent set up from one relay to the next as the top plate rotates to accommodate misalignment maintaining a consistent amount of breakaway or drag under recoil for improved accuracy.
- The Raptor features reversible top blocks, this means you can switch between the original design with rollers or use the other side for felt contact. By simply lifting the blocks off the mounting stud and rotating 180 degrees you can choose between using rollers with the benefit of low friction or the felt variation that allows for a bit of preload without excessive drag. You might even choose one of each to gain the advantage of both styles. A very small (one inch long) sand bag rail assembly is mounted under the edges of the forearm allowing a pivot point. This feature means you no longer need to level the front leg of the rest front to back. This sand rail configuration delivers, not only a very low contact patch with very little drag but also a high level of consistency during recoil. Note: the mounting bolt has two locations on both the rollers and the felt side allowing you to move the sand rails closer to the stop or closer to the shooter.

## **T-Rex roller blocks**

The roller blocks feature 4 Delrin rollers that contact the vertical flats of a forearm and provides very low friction. The rollers are placed 3" apart front to back. These blocks are not recommended for stocks that do not have forearms with parallel sides or not plumb top to bottom as this creates point contact only with no give in the rollers. The top blocks slide in and out and adjust for stock widths from just under 1-3/4" to just over 5".

## **T-Rex Felt lined blocks**

The felt blocks are the same as the roller block but feature a heavy 1/8" thick felt contact patch instead of rollers. This is a very solid option when the sides of your forearm are not perfectly parallel or plumb top to bottom. They can be run 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.

## **IBS top**

The IBS legal top features the same rotating top plate parts but uses the new style Farley sand bag instead of the rollers and sand rails from the Roller or Felt version. The IBS top has removable, adjustable ends, to tension the sides of the sand bag for a perfect fit against the sides of the forearm. We now stock the Edgewood bags which come in 3" or 4" widths. Also, since the IBS top is 1/2" taller than the F Class version we supply a 1/2" longer bolt and spacer along with the IBS block to raise the dual pivoting forearm stop for proper fit. Again, this top will only accept the new style Farley bags. You have two options for position of the level. Unlike other rests that place the level under the rifle we place ours 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.

## **Forearm Stop**

- The dual forearm stop pivots radially with the top plate as well as independently and is adjustable for length on a slotted front post. The rifles forearm bumps up against two nylon bumpers so the force on both sides of your forearm is always equal. The bump stops are adjustable for height by placing them in a series of holes in the vertical plane.

## **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 it 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: The Raptor features a knurled hand operated drive wheel in addition to the extension tool. This feature allows for adjusting the bridge by hand if your extension tool is not with you. Note: The Raptor also has a knurled knob for manually adjusting the bridge

### **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. 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 this 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 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 screws bear against Teflon 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 set screws (4 total) above and 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 thumb screws or you could damage the ball bushings or rods in the X-Y assembly. Only add friction after adjusting the counter balance so your balance is not disguised by any excess friction. **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 screw. 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 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**

- For the T-Rex with steel base plate: The optional (Phoenix type) sand feet come with threaded studs locked into them. You will not experience these threads coming undone causing the rest to wobble which is common on other setups. To lock the feet after leveling the T-Rex snug down the 2" knurled lock knobs against the cupped spring washers. NOTE: place the cup down against the base. There is no need to overtighten or hard lock these top locking knobs. Make sure the standoff boss on one side of the knurled lock knobs is against the cupped spring washers. For the Raptor: just slide the foot assembly into the slot and let the square nut go up into the cut out on the bottom of the feet and tighten the knurled locking knob to lock the leveling leg into position.

### **Protective finishes**

- The T-Rex base plate is powder coated steel and the aluminum parts are hard anodized for a lifetime of service. The Raptor is all aluminum with a hard anodized finish for durability and low friction.

### **Fitted case**

5 • A custom hard case comes with the T-Rex for storage and transport. 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. The Raptor comes in a similar case but smaller.

### **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. Never close the case on a wet rest as the case is sealed when latched and rust will form on non stainless parts. I recommend a thorough wipe down every month or two with a rust preventive, especially on the vertical rack and guide posts. For the Raptor you will only need to wipe the dust off periodically and any water after shooting in rain but no lube is required or recommended.

### **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 assemble 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: in the widest position you are supplied with two ¼" pins with Red rubber caps for locking the legs should you want to. Just push the pins down through the holes in the base plate and into the mating holes in the primary legs.

**NOTE: There is a set screw in the bottom of each leg that pre-loads a spring for the ball detents. These set screws are set and locktited for a reason. Do not attempt to adjust these as the ball will not be able to fully disengage from the mating detent holes and damage will occur.**

## 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 assemble over or on its side and reinstall the take down bolt 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 for UP and DOWN for DOWN unlike other rests that are reversed when set up this way.

## Modular joystick supplied with the Raptor

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: This adaptor tube is reversable and will place the thumb screws on the right side for right-handed shooters or flipped over which places the thumb screws on the left side. Now just slip in the extension 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 and replace the button. **(NOTE: be sure to only cut the painted end of the extension 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.