The SEB NEO Rest

 (September 2015)

Thank you for purchasing the NEO Rest!

Your NEO rest is the best engineered and smoothest joystick-controlled front rest in the world.

The NEO rest design is based on experience gained over the last few years, with the help of some of the best shooters on earth.

Your NEO rest can be used with any type of benchrest shooting, for centerfire benchrest, for rimfire and air rifle benchrest, for F-Class Open, and varmint shooting.

NEO rests are used by serious shooters of various disciplines around the world, we have shipped the rests to 30+ countries. Built to last for years, with no comparison in quality and workmanship, including our distinguished after sales support and highest re-sell value ever.

Some features of the NEO rest;

1. Ambidextrous - Only rest on the market to serve both right and left handed shooters without any modifications.

2. Dual support columns with rack & pinion system, with a huge and rapid adjustment range.

3. Spring loaded top mechanism to help hold up the weight of the rifle. Optional; static counter-weights available (dependent on rifle weight).

4. Lightest and smoothest joystick movement available. This is accomplished by the counter force loading, either by the standard spring loading or the optional static counter-weight. The rest design enables the tensioners to be adjusted for the desired feel by the user. Other coaxial rests require enough clamping force to hold the weight of the rifle, without that clamping force, the rest top and rifle will move down by themselves.

5. NEO rest has more joystick travel than any other joystick/coaxial rest on the market. About 43 MOA in the vertical and 48 MOA in the horizontal with the joystick movement alone.

6. Ability to adjust the force required to rotate the center shaft. The bent joystick and ability to rotate will aid in keeping the palm of hand firmly grounded to the bench at all times while holding or operating the joystick.

7. Reversible base configuration. The base can be setup with the long leg in the rear, or can be set up with the long leg in the front.

8. New adjustable rest-top design with 3 independent bags, for rifle widths of ‘zero’ up to 4 inches. Optional – one piece bag available in 2.5”, 3”, and 4” wide.

9. The top has independent-moveable side plates, with fine tension adjustment. Bubble level is standard with every rest.

10. Collet type joystick head attachment.

11. Fore-end stop is foldable and adjustable. Standard/regular rest with O-rings, Ratigan option comes with a smooth delrin cover.

12. Designed to minimize the number of tools required to use the rest, the goal was zero.

13. Only production rest that can be used in reverse acting mode. Up for up, or up for down.

14. The NEO rest can be rapidly assembled & disassembled. Rest packs up very compactly, easily dismantled for transport, a big “plus” when traveling.

**SEB BALANCE WEIGHT SYSTEM (OPTIONAL STATIC COUNTERWEIGHT):**

Your NEO rest can be equipped with optional counter-weight to accept various gun weights. With counter weight tuned to your gun weight your NEO rest will act as a balance beam scale. It’s the first and only one, the others are copy.

Various counterweights are available, to hold gun weight from about 10 lbs up to 90 lbs or more.

The counterweight will be attached in the front (the opposite side where you attach the joystick) in “up for up” mode. In “up for down” mode (reverse motion), the counterweight needs to be at shooter’s side (on the joystick).

*Competitors take note; With the Seb NEO, equipped with the optional static counter weight, and a little knowledge the shooter can calibrate the counterweight to the rifle weight. The counterweight is used to hold up the rifle. Clamping pressure of the sliding plates inside is NOT used to hold up the rifle like other coaxial rests on the market today. This feature differentiates this rest from the others. Other coaxial rests apply enough clamping force to the rest top mechanism sliding plates to resist the downward movement of the top when the rifle weight sets on the rest.*

*This one feature of the Seb NEO almost completely eliminates bullets falling out of the bottom of your groups because the rest moved (or falls) down when you fired the rifle. Sorry for being windy here, but this function is very important.* ***(*Mike Ratigan)*.***

**REST PREPARATION:**

When you receive your rest, it is assembled in “transportation mode”.

The rest comes with a front bag (depending on the option of your rest; 3 pc bags or 1 pc bag) and some hex wrenches. Also included is an Exploded Drawing and Parts List.

**First remove the leg sections from top of the columns using the supplied allen wrench.** They are bolted on with two large screws #7. The same screws are used to secure leg #5 with carrying handle in place. The long leg will be secured by a center screw #6.

Remove the two thumb-screws #3 out from the main “H” base holes and put them on the top of the rack gear posts #2. These will protect the top of the posts from damage and restrict you from raising the main body too high.

Your NEO rest can be assembled in 4 different configurations.

A. Choice of joystick action;

1. Up on joystick, rifle goes up. (up for up)

2. Up on joystick, rifle goes down. (up for down)

B. Choice of leg configuration (where to put the long leg);

1. Long leg toward the shooter.

2. Long leg away from the shooter.

An extra short leveling screw (#10) is provided in the standard/regular rest to be used when the long leg is set toward the shooter (i.e. to not interfere with the joystick operation). The long leg also has an extra threaded hole (closer to the main base #1) to be used on a short/narrow bench top.

Preassembly note: When using the static counterweight (Ratigan optioned rest) the long leg must be toward the shooter.

**FRONT BAGS:**

The bags are half round shaped and conform to WBSF / NBRSA / IBS rules.

All bags are shipped empty and need to be filled with sand.

To fill the bag(s), first raise the coaxial unit (#11) all the way up by loosening the locking bolts (#12) and turning either hand-wheel.

Prepare some sand (of your preference, or any type of sand you feel will work) and a small funnel.

You will need to disassemble the top as follows;

**Three piece bags;**

1. Remove the adjustable side plates (#40) by loosening adjustable lever screws (#41). Part #40 will slide off each side.
2. Remove the side tension adjustment knobs (#43)
3. Remove (or just loosen) side retainer plates (#42) by removing/loosening 2 small screws on each side, use the 2.5mm (metric) allen wrench provided. (The sand fill hole of the side bag is secured between the back of the side plate #40 and the side retainer plate #42). Pull out the sand fill-hole on the top.
4. Fill side bags with sand through the fill-hole at the top. Use a small funnel.
5. Re-assemble side plate assembly. (do not re-install yet).
6. To remove the bottom bag, remove the fore-end stopper, loosen the screws that hold the front & back top retainer plates (#38) for about 3-5 rotations, this will allow removal of bottom bag. Slide the bottom bag off to either side.
7. Fill the bottom bag (do not over-fill / too hard) and re-install in reverse order.
8. Re-install side plates onto top plate.

**One piece bag**;

1. Remove (or just loosen) side retainer plates #42 and side adjustment knobs #43.
2. Pull out the sand fill-hole of the bag on each side. The sand fill holes of the bag are secured between the back of the side plates #40 and the side retainer plates #42.
3. Remove the adjustable side plates #40 by loosening adjustable lever screws #41. Slide off each side.
4. Remove the fore-end stopper, loosen the front and back retainer plates #38 for about 3-5 rotations, this will allow bag removal.
5. Fill the bag to your personal liking (but don’t be too hard) and reinstall in reverse order, centering the bag onto the top plate before tightening the screws for the front & back top retainer plates. Tighten retainer plate screws.
6. Reinstall side plates onto top plate. Slide the side plates up to each side of the bag.
7. Re-attach sand fill holes and re-tighten the side retainer plates.
8. Re-install the side tension adjustment screws #43.

**JOYSTICK:**

The joystick (#36) is secured with a simple and neat knurled fixture. Tighten with adequate pressure so when you turn the joystick it rotates the center shaft without the collet slipping.

The thread is right hand twist. From shooter’s side, turn the knurled nut counter-clockwise to tighten. Turn clockwise to loosen.

Many shooters prefer ‘up for up’ joystick operation but it can be attached on the opposite side for those who prefer ‘up for down’.

**Center Shaft Rotation**:

This section addresses how to adjust the resistance of the center shaft to rotation.

Some shooters rotate the handle (which turns the center shaft #13) as part of the normal use of the rest.

There are 2 small set screws (#17) that are accessed through the bottom of the rest. These screws apply tension on the bearings (#34 & #35). The center shaft (#13) is epoxy glued into the ‘front’ bearing and designed to slip through the other as the geometry of the mechanism is changed by moving the joystick. Front set screws (#17) can be tightened and loosened slightly to change the rotational force needed to rotate the handle.

*“I try to keep the palm of my hand grounded to the bench at all times. To do this at the closer distances, the handle will be laying flat (bend to the side) while shooting on the bottom of the target. To move to the top up (right handed shooters) I rotate the handle counter clockwise, which will lift the top up while maintaining my palm grounded to the bench.”* Mike Ratigan

**TENSION ADJUSTMENT / SENSITIVITY:**

There are 2 tension adjustment screws (#14) which are locked by counter nut (#15). The screws are knurled, no tools are needed, or should be used, to lock and unlock. The tension screws are fine metric thread M12x1.0.

If you want to change the tension setting, it is recommended to mark or take note of the starting setting of the tension adjustment screws before starting. The newer rests have a dot stamped (at 12 o’clock) onto the face of the tension adjusters.

If you set the tension screws too loose the rest will have some noticeable play. You should NOT be able to move the rest top mechanism front-to-back or side-to-side with your fingers. If your rest top has play, or is loose (flopping), the tensioners are set too loose.

While moving the joystick around in a circle, turn in one of the tensioners until the play is removed, note the position of that tensioner. Back off that tensioner and repeat with the other.

After you find the place where the tensioners start to touch the Teflon sheet (#31), start with both tensioners just at the touch point. Then advance both tensioners a very small amount each until you reach the desired operating friction.

**HAND WHEEL:**

A unique clutch brake system is incorporated into your NEO rest to hold the gun weight until the coaxial unit is locked in place with the locking bolts (#12).

Both clutches are mechanically the same but installed on different sides, they work together to hold the gun weight (up to 50 lbs or more)

**WARRANTY:**

Your rest is covered with 30 Days Money Back Guarantee and one full year warranty against any defect in materials and workmanship from the date of purchase/you received the rest.

Within the thirty days, you can return the rest with the original packaging and must be sent in ‘like new’ condition, with no any damage. Contact your Dealer or Seb if you want to return the rest.

**Do NOT change the factory setting or try to remove the mechanism if you don’t have proper mechanical skills or know how it works. Doing so may void the warranty.**

**MAINTENANCE & STORAGE:**

Your NEO rest is built from the finest material (with good corrosive resistance) and will give a life time of use if properly cared for. No special treatment or maintenance is required, however common sense applies here; keep your rest clean, do not expose to rain and extreme temperatures for a long time, and remove the joystick when not in use. Also apply light lube on the rack gear posts & pinion regularly. (Teflon chain lube/spray is recommended).

**Please feel free to contact us if you have any questions or problems with your NEO rest!**

Good shooting,

Sebastian Lambang.

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