



SCIENTIFIC

**OPERATION**

# MANUAL

## Rat Restraint

RR-300

This page was intentionally left blank

# Important Safety Information!

- Please read this manual carefully before operating your new IBI Rat Restraint.
- This manual contains important operating and safety information.
- To best use this product, please read the entire manual carefully prior to use.
- To avoid possible injury, this product should only be used for its intended purpose.

## Package Contents | Unpacking

Upon receiving this product, please verify all of the noted parts and accessories are contained in this package. Awareness of the stated cautions and warnings contained within this manual, compliance with recommended operating parameters, and maintenance requirements are important for safe and satisfactory operation.

- 3" I.D. Acrylic Tube w/Machined channel for slide/stop
- 3" Slide/Stop w/Knob
- (2) Nylon Wing Nuts
- Acrylic Base w/tube holder
- (5) Neck Restraint Plates: X-Small, Small, Medium, Large, X-Large
- Operation Manual

Save all packing material, and these instructions, if the rat restraint is received damaged. This rat restraint was carefully packaged and thoroughly inspected before leaving the factory. Responsibility for its safe delivery was assumed by the carrier upon acceptance of the shipment; therefore, claims for loss or damage sustained in transit must be made with the carrier.

**Note:** Carefully inspect all items in the package to insure no items are broken or missing. If there are items broken, please inspect the package carefully for signs of shipping damage. If there is ANY sign of shipping damage, please contact the carrier and file a claim with them immediately. Contact the distributor from which you purchased the item or IBI Scientific directly for assistance at (800) 253-4942 or (563) 690-0484.

## Product Specifications

3" I.D. Cast Acrylic Body Tube: 9"(l) x 3.75"(w) x 3.75"(h)

3" Slide/Stop: 2.88" Dia. x .50"(w) (also contains adjustment knob)

1/2" Cast Acrylic Base: 8.75" (l) x 8.75" (w) x 3.75" (h)

(5) Neck Restraint Plates: 3.75" (l) x 3.75" (w) x .13" (h)

Neck Restraint Openings:

X-Small - .825" (w) x 2.29" (d)

Small - .865" (w) x 2.31" (d)

Medium - .900" (w) x 2.33" (d)

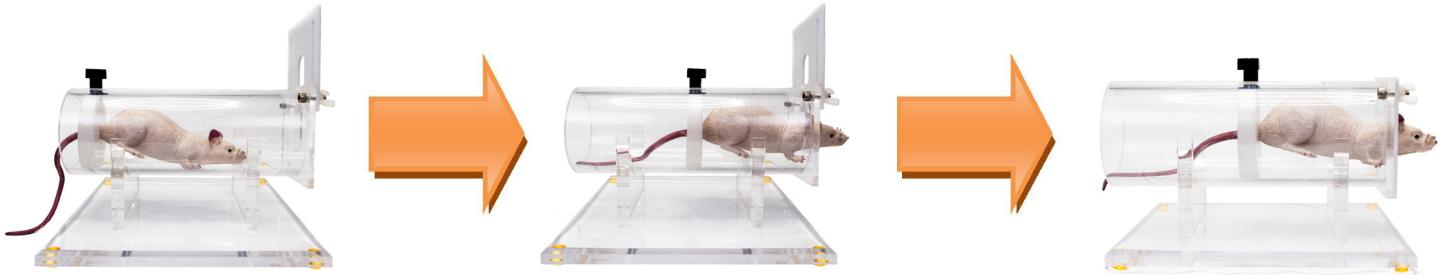
Large - .940" (w) x 2.35" (d)

X-Large - .975" (w) x 2.37" (d)



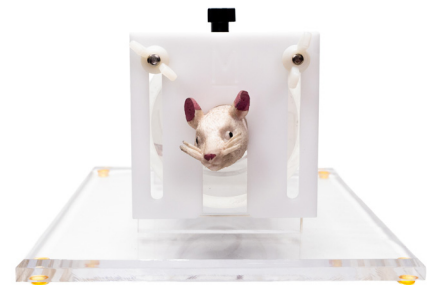
# Operation

The device was designed to safely and securely restrain a rat while restricting movement of the head. This allows for research on the animal's eyes, face, or entire head. Prior to loading the animal into the rat restraint, it is important to note that the animal should be fully conscious - not anesthetized. This device also comes with (5) different sized plates that mount to the front of the acrylic tube, using plastic wing nuts. These (5) plates each have a unique opening size to accommodate rats of various neck sizes. This device also comes with a white slide/stop and adjustment knob for positioning the rat in the correct location. This slide/stop also has a hole in the center of it to allow the tail of the animal to pass through. The slide/stop is inserted behind the animal as it enters into the 3" tube, and the tail is passed through the hole in the center of the slide/stop. The animal will typically enter the tube willingly and slowly make its way to the front. Moving the slide/stop forward with the animal ensures it can not back up or exit once inside the tube. The front of the acrylic tube should have the proper sized neck restraint attached and raised up awaiting the arrival of the animal. When the animal sticks its head out through the hole in the front opening, simply slide the neck restraint down over the animals neck, just behind the ears. This will prevent the animal from backing up or going forward.



**Note:** The slot in the tube that allows for the adjustment of the tail slide should always be at the top. This insures that the animal is standing on the solid portion of the tube, which prevents the animal from stepping through the slot and becoming injured. The inside of the tube is also slick, which helps inhibit the animal's ability to struggle.

Once the animal is restrained you can place a towel over the entire tube and animal which will aid in calming the animal for movement to the platform. Place the tube, containing the animal, in the cradle of the base platform. The tube can easily be adjusted forward and backward, as well as rotated into the desired position. Whatever your application work is required can now easily be performed.



## Applications and Usage


Yorek M.S., Davidson E.P., Poolman P., Coppey L.J., Obrosova A., Holmes A., Kardon R.H., Yorek M.A.

Corneal sensitivity to hyperosmolar eye drops: a novel behavioral assay to assess diabetic peripheral neuropathy. *Invest Ophthalmol Vis Sci* 2016, 57 (6): 2412-2419. doi: 10.1167/iops.16-19435.

We use this rat restraint for the functional test of corneal sensitivity. Diabetes may cause a small fiber neuropathy, damage to small nerve fibers in skin and cornea, with symptoms of pain, abnormal sensation or loss of sensation. Typically, damaged small nerves in cornea lose sensation, and our test is designed to detect this loss in diabetic rats. We apply the eye drops that irritate cornea and normally provoke blinking and squinting in a non-diabetic rat, but this response is diminished in a diabetic animal. During our test we record the rat's reaction to eye drop application for several minutes, and then we use the collected series of images to analyze the visible eye surface area and compare the area values between different experimental groups. With a decrease in sensitivity that rat will squint less and the measured eye surface area will be a larger value.

# Maintenance Of Unit

- Care must be observed in the handling of this unit.
- Do **NOT** expose the unit to temperatures above 60°C
- Do **NOT** expose the unit to organic solvents
- Do **NOT** clean the unit with abrasive cleaners or cleaning aids.
- Do **NOT** submerge in water.
- Use mild cleaning solution (dish soap recommended) for routine cleaning. For heavier dirt, hand wash with soft cloth. In most cases, a rinse in deionized water is sufficient to clean the unit.
- If you wish to place the unit inside an incubator, you may wipe the unit down with 70%(max.) alcohol to disinfect prior to installation.

 **Note:** The degradation of acrylic by solvents may result in substantial discoloration, cracking, warpage or etching of the electrophoresis unit. DO NOT apply any of the following solvents to the unit: benzene, xylene, toluene, chloroform, carbon tetrachloride, alcohol, phenol, ketones, or esters.

## Limited Warranty

Our limited warranty for all life science equipment is one (1) year to the original buyer only (nontransferable) from the original date of purchase.

Our limited warranty as noted above extends to the direct end user of IBI Scientific products only. This warranty is in lieu of all other warranties whether expressed or implied, including warranties of merchantability or fitness for a particular purpose. In no situation shall IBI Scientific be liable for any incidental or consequential damages of any kind, even though IBI Scientific has been advised of the possibility of such damages arising out of, or resulting from, the products or the use or modification thereof or due to the breach of this warranty or any other obligation of IBI Scientific to the customer, whether based on contract, tort, or any other legal theory. In no such event shall IBI Scientific be liable for damages which exceed the purchase price of any products.

For further assistance contact IBI Scientific Technical Service at [\(800\) 253-4942](tel:8002534942), [\(563\) 690-0484](tel:5636900484) or visit us on the web at [ibisci.com](http://ibisci.com)

## Accessories | Replacement Parts

### *Rat Restraint Replacement Parts*

<b>Catalog #</b>	<b>Description</b>
RR-10	Replacement 3" I.D. Acrylic Tube
RR-20	Replacement Base Assembly
MH-30	3" Slide/Stop w/Adjustment Knob
RR-30	X-Small Neck Restraint Plate
RR-31	Small Neck Restraint Plate
RR-32	Medium Neck Restraint Plate
RR-33	Large Neck Restraint Plate
RR-34	X-Large Neck Restraint Plate



SCIENTIFIC

7445 Chavenelle Road • Dubuque, IA 52002  
800-253-4942 • (563) 690-0484 • info@ibisci.com • [IBISCI.com](http://IBISCI.com)



Rev. 1