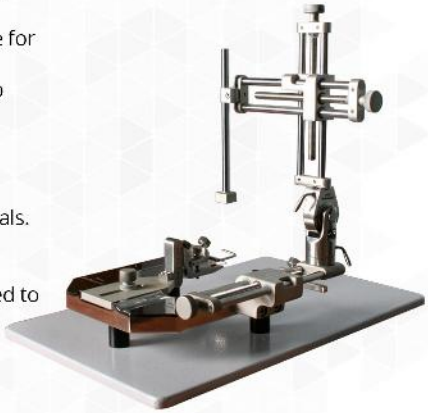
TOOS BIO RESEARCH

Advanced Neuroscience Lab Equipment

Specifications:

- Adaptors available for rat, mouse, bird, cat, dog, monkey, rabbit, gecko, guinea pig, etc.
- Working distance in each dimension is 80 mm with precise alignment to 0.1mm resolution.
- Vertical direction: 180° rotation and lock at any angles.
- Horizontal direction: 360° rotation and lock at any angles.

- Accuracy and flexibility can be maintained at variable temperatures.
- Extended base plate (400mm x 250mm) is applicable for a variety of animal sizes.
- Unique anti-clockwise UP mark engraved in the knob prevents incorrect operation.
- Vertical lock and fixing knob are separated to ensure accurate function at any angle.
- Laser engraved scales enable comfortable reading.
- Curved nose clamp design secures the head of animals.
- Ear bar locked plate pressing instead of clamping ensures more stability.
- Syringe pump, micro camera and drill can be attached to instruments.



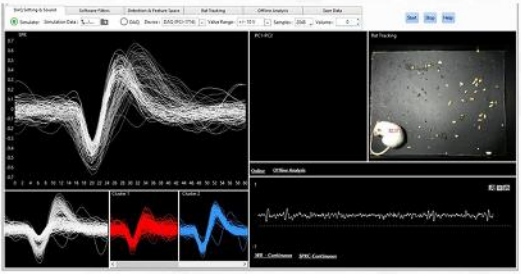
EYE TRACKING SYSTEM

BINA 941 (HEAD FIX)

Camera (Number)	1
Camera Model	Color
Light Sources	1 NIR
Average Accuracy	40 px (1degree in 60 Cm Distance)
Frame Rate	200
Eye Tracking Principle	Dark Pupil – Corneal Reflection
Pupil Detection Models	Ellipse Fitting
Gaze Tracking Range	40 Horizontal, 23 Vertical
Optimal Camera Distance	50 cm
Optimal Screen Distance	60 cm
Glasses Compatibility	Good
(CSV File)Output	• Eye Position • Glint Position • Gaze Position • Pupil Size • Mean Error (for evaluation)

Specifications:

Features	Specifications and Options
Subsystems	Neural DAQ hardware Neural DAQ software Electrode Camera Adaptor
Channels	Up to 12 neural input channels
A/D input conversion	40kHz per neural channels and auxiliary non-neural channels at 16-bit resolution
Timestamping	25usec
Gain	100,500,1000,2000,5000,10000
Hardware filter	2 pole Butterworth Highpass : 10,50,100,400Hz Lowpass : 0.5,1,5,10,25kHz
Software filter	6 pole Butterworth Highpass : 1 - 700Hz Lowpass : 0.8 - 20kHz
Auxiliary non-neural analog inputs	4 channels
Auxiliary digital input	8 channels
Spike detection	Display signal before and after the software filtering Reading 1024,2048,4096 samples Ability to listen to the voice of spikes Ability to change gain and hardware filters in software Simulation and online spike detection and spike sorting Up to 500 spikes overlay Feature space includes PC1-PC2,PC1-PC3,PC2-PC3,Valley-Peak Offline analysis for up to 500 recent spikes includes display offline feature space, clustering (up to 4 clusters) and DCI (Desired Characteristics Identification) Ability to save optimal spikes separately
Camera resolution and frames per second	640 x 480 resolution, 60fps OR 640 x 480 resolution, 120fps
Rat tracking	Simulation and online tracking Offline DCI analysis
Neural and non-neural files save to	.tdms file Record up to 10GB per file
Video file save to	Standard .AVI file in MPEG format
Controller platform	Windows 7,8.1,10
Chassis dimensions	20 x 28 x 8 cm
Suggested application	Neural recording with analog headstages along with Behavioral Research



SYRINGE PUMP

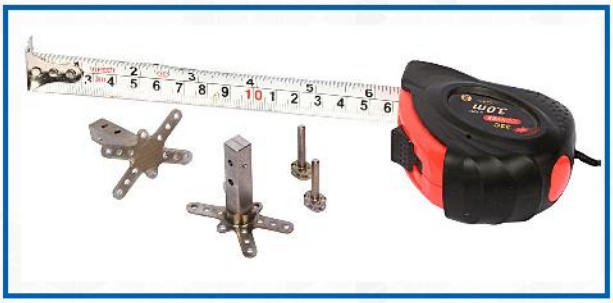
Specification:

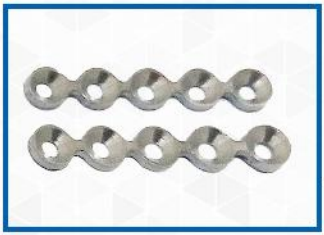
- Holds 2 Syringes, with recommended or user specified sizes
- Minimum Syringe Size: 1 mL
- Maximum Syringe Size: 60 mL
- Programmable Infusion rates from 0.3 µL/min (1 mL Syringe) to 1799.1674 mL/h (60 mL Syringe)
- Easy-to-use Keypad interface with 16x2 Character LCD
- Power supply: 24 V/ 3 A
- Motor type: Step motor, 24 Volts, 1.8° per step
- Motor steps per revolution: 200
- Advance per step: 156 nm to 5 µm depending on stepping speed
- Fully programmable; Automation capable
- operates in stand-alone mode or from a computer
- Non-volatile memory to store user-applied settings (Restorable to default settings)
- Manual infusion or withdraw using on-device keys
- Trigger Mode:
  - o Triggered infusion with external square wave (standard 5 Volts) trigger
  - o User programmable syringe type and infusion rate
- Simulation Mode:
  - o 8 programmable phases with separate rates for each phase
  - o Infusion or withdraw mode for each phase
  - o Each phase can be constrained by time or dispensed volume
  - o Simulation procedure can be paused or stopped at any time
- 3 year warranty

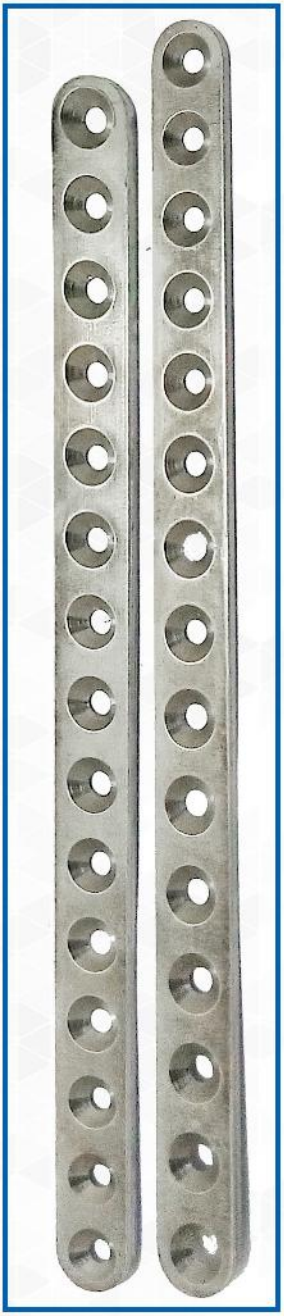
Syringe Type	Dimension Limits (inner diameter)			Infusion Limits			
	Min (mm)	Recommended (mm)	Max (mm)	mL/min		mL/h	
				Minimum	Maximum	Minimum	Maximum
1 mL	4.606	4.699	9.538	0.0003	0.9365	0.0162	56.1883
3 mL	8.585	8.585	9.65	0.0009	3.1258	0.0542	187.5493
5 mL	10.3	11.99	13	0.0018	6.0971	0.1057	365.8249
10 mL	14.43	14.43	15.9	0.0026	8.8311	0.1531	529.8678
20 mL	19.05	19.05	23.03	0.0044	15.3912	0.2668	923.4744
30 mL	21.59	21.59	23.52	0.0057	19.7692	0.3427	1186.1515
60 mL	26.59	26.59	29.7	0.0087	29.9861	0.5198	1799.1674

RECORDING CHAMBER, HEAD POST, BONE PLATE

Primate brain surgery is followed by implantation of devices on animal head for accessibility to brain in further experiments. We supply such devices including recording chamber, head posts and bone plates from biocompatible titanium alloys in various sizes and shapes.







MONKEY CHAIR / RECORDING FRAME

Specifications:

Length: 45 cm
Width: 45 cm
Height: 85 cm
Material: aluminum, stainless steel, Plexiglas

Specifications:

Length: 70 cm
Width: 80 cm
Height: 125 cm
Material: aluminum, stainless steel

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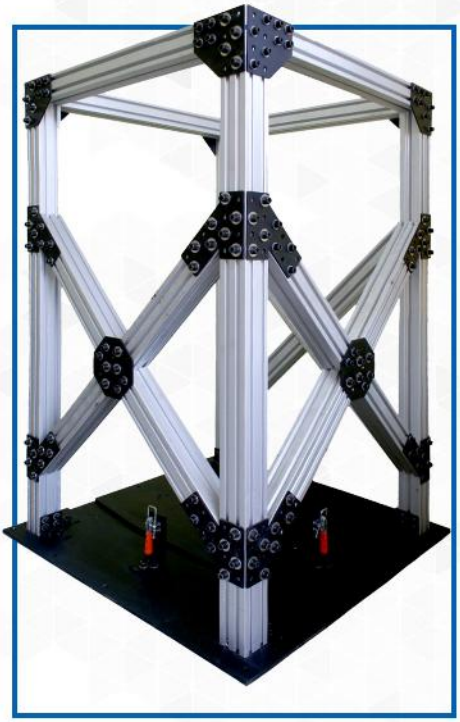
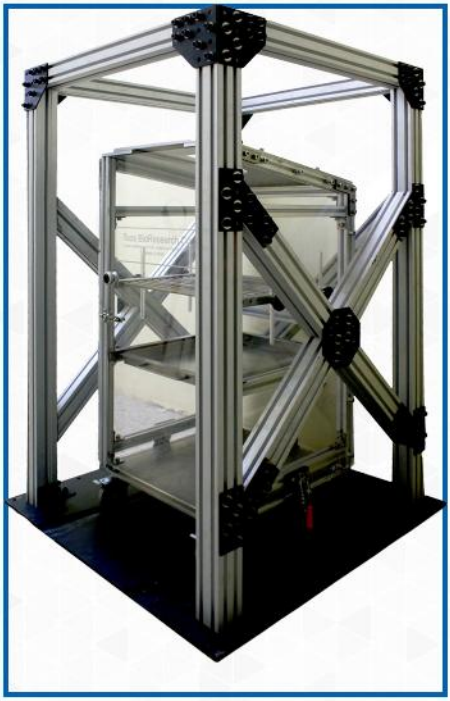
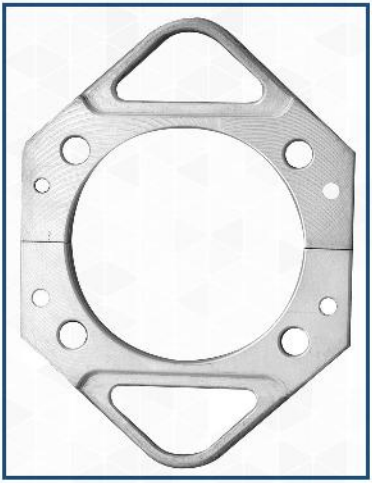




BLOOD SAMPLING GUILLOTINE/ MONKEY COLLAR AND POLE

Specifications:

Basement dimensions: 150 × 250 mm
Opening: 35 mm in side
Installable on the table
Changeable blades
Stainless steel material
Weight: 4 kg



Specifications:

Material : Aluminum
Internal diameter: 90 cm
Width: 130 mm
Length: 170 mm
Thickness: 9 mm
Weight: 170 gram
*This product is supplied in various sizes

Specifications:

Specifications:
Length: 125 cm
Diameter: 20 mm
Weight: 1 kg
Material: stainless metal

MONKEY CAGE / SHIELDING ROOM

Specifications:

- Length: 90 cm
- Width: 80 cm
- Height: 185 cm
- Weight: 190 kg
- 25×25 mm stainless steel net
- Material: Stainless steel, Plexiglas

Specifications:

Dimensions: 2*2*2 m standard version (various dimensions could be manufactured)
External layer: 2 mm Iron sheet
Middle layer: Acoustic and Thermal
Internal layer: 1.5 mm in diameter gridded Iron layer
Weight: 670 km for standard version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In Toos BioResearch Co. we have gathered a team of genius and innovative scientists and engineers which are dedicated to designing and manufacturing of high quality neuroscience lab equipment including electrophysiological recording devices, eye tracking systems, stereotaxic instruments and primate room equipment. Our prophecy is providing neuroscientists with high quality instrumentations for brain exploration.

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