DAVID KOPF INSTRUMENTS
Precision Designs for Research

STEREOTAXIC INSTRUMENTS ▪ ANIMAL ADAPTORS ▪ DRILLS

SPINAL UNITS ▪ MICROPPOSITIONERS ▪ PIPETTE PULLERS

www.kopfinstruments.com
Ordering Information

Please contact KOPF for all of your laboratory research requirements. Our primary goal is to provide our customers with uncompromised quality, continuous technical support, as well as dependable customer service.

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David Kopf Instruments has compiled an easy to read condensed catalog to provide our customers with an outline of the various products we manufacture.

We encourage customers to contact our customer service for assistance in assembling a stereotaxic instrumentation package. Our knowledgeable staff will work with you to identify which stereotaxic frame set-up, animal adaptor(s) and surgical tools are needed to fulfill your research requirements.

For complete product information and specifications please visit www.kopfinstruments.com

How To Order – All orders should be addressed to our Tujung office. Orders may be placed by telephone, fax or email. Formal purchase order and/or credit card is required to process order. Products for sale, delivery or use outside the United States must be purchased through an authorized David Kopf Instruments representative or direct through our Tujunga office.

Pricing – Prices are per the current price list and are subject to change without notice. Special items and low volume items will be quoted upon request.

Minimum Order – $50 (Domestic) $75 (Foreign)

Terms of Sale – F.O.B. Tujunga, California USA

Terms of Payment – Net to established institutions. We reserve the right to hold orders pending payment of overdue accounts or to require payment in advance.

Form of Payment – U.S. currency only. Check, Wire Transfer, Visa, MasterCard and American Express accepted.

Taxes – Quotations and invoices do not include local taxes or tariffs. David Kopf Instruments will not be responsible for their collection of payment except for non-exempt California sales.

Service – Complete service facilities are located at our factory in Tujunga, California. Repairs and modifications are available. Some items could be rendered obsolete by design changes. In this instance, replacement items can generally be substituted. All returned items must include proper documentation, including name, telephone number and address.
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For complete Kopf product line including equipment specifications please refer to www.kopfinstruments.com
Complete line of Kopf instrumentation is listed below. Product details and specifications are available at www.kopfinstruments.com.

**Stereotaxic Alignment System**
- Model 1900 Stereotaxic Alignment Instrument
- Model 1901 Adjustable Stage Platform
- Model 1905 Alignment Indicator
- Model 1910 Dial Test Indicator
- Model 1911 Stereotaxic Drilling Unit
- Model 1915 Centering Scope
- Model 1923-B Mouse Gas Anesthesia Head Holder
- Model 1924-B Neonatal Rat Gas Anesthesia Head Holder
- Model 1925 15 Degree Angle Adapter
- Model 1929-B Rat Gas Anesthesia Head Holder
- Model 1940 Micro Manipulator Digital Display
- Model 1950 Universal Off-Plane Adapter
- Model 1966 Cannula Holder
- Model 1970 Electrode Holder
- Model 1971 Syringe Pump Adapter
- Model 1972 Syringe Holder
- Model 1973 Dual / Model 1974 Single Cannula Insertion Tool
- Model 1975 Glass Pipette Holder

**Small Animal Stereotaxic Instruments**
- Model 900 Small Animal Stereotaxic
- Model 900LS Lazy Susan Small Animal Stereotaxic
- Model 900SD Motorized Small Animal Stereotaxic
- Model 902 Dual Small Animal Stereotaxic
- Model 930 Small Animal Stereotaxic Frame Assembly
- Model 932 Dual Small Animal Stereotaxic Frame Assembly
- Model 940 Digital Small Animal Stereotaxic
- Model 942 Dual Digital Small Animal Stereotaxic
- Model 962 Dual Ultra Precise Small Animal Stereotaxic
- Model 963 Ultra Precise Small Animal Stereotaxic
- Model 963SD Motorized Ultra Precise Small Animal Stereotaxic

**Large Animal Stereotaxic Instruments**
- Model 1404 Heavy-Duty Research Model Stereotaxic
- Model 1430 Stereotaxic Frame Assembly
- Model 1504 Heavy-Duty Research Model Stereotaxic
- Model 1530 Stereotaxic Frame Assembly
- Model 1730 Intracellular Frame Assembly

**MRI Stereotaxic Instruments for Small & Large Animals**
- Model 324 Rat and Model 325 Mouse MRI Head Holder
- Model 900M Small Animal MRI Stereotaxic
- Model 923M Mouse Gas Anesthesia Head Holder
- Model 1430M Large Animal MRI Stereotaxic
- Model 1530M Large Animal MRI Stereotaxic
- Model 1630M Large Animal MRI Stereotaxic
Animal Adaptors
   Bird
   Cat
   Dog
   Ferret, Mink
   Guinea Pig
   Monkey
   Mouse
   Prairie Vole
   Rabbit
   Rat
   Siberian Hamster
   Squirrel Monkey
   Ear Bars
   Optical and Semi Chronic Head Holding Devices
   35 mm Offset Adaptors & Raised Eye Bars, Inverted Palate Clamp
   Special Order Animal Adaptors

Stereotaxic Accessories
   Adjustable Stage Platform
   Alignment Tools
   Anesthesia Masks
   A/P Slide Attachment
   Base Plates
   Drills, Drill Press
   Ear Bar Adaptor
   Electrode Angle Calibrator, Calibrated A/P Zeroing Bar & Carrier Stand
   Electrode Holders & Clamping Devices
   Electrode & Micro Manipulators
   Microinjection Unit
   Removable Zero Point
   Temperature Control System
   45 Degree Adaptor Slide

Spinal Units
   Model 980 Small Animal Spinal Unit
   Model 1780 Large Animal Spinal Unit

Pipette Pullers
   Model 720 Needle Pipette Puller
   Model 730 Needle Pipette Puller
   Model 750 Programmable Needle Pipette Puller

Micropositioners
   Model 608 X/Y Chronic Adapter
   Model 640 Manual Hydraulic Micropositioner
   Model 2650 Hydraulic Micropositioner
   Model 2660 Direct Drive High Speed Micropositioner
   Model 2662 Direct Drive High Speed Micropositioner
   Model 2670 Hydraulic Micropositioner
Model 1900 Stereotaxic Alignment System provides the ability to manipulate and refine the position of the head in 3 dimensional space, prior to exploring inside the head and brain.

The stereotaxic alignment system was originally designed and developed by Joseph Saracione, Cartesian Research Inc. Our patented design offers the maximum stereotaxic adjustment available for positioning the animal’s head; dorsal/ventral, dorsal tilt, coronal tilt, anterior/posterior and midline alignment (nose left/nose right) adjustments. This complete unit is mounted to 18” x 18” x 1” precision ground aluminum base plate. The overall mass and rigidity of this instrument provides ultimate stability.

The instrument is fitted with two large dovetail rails for mounting manipulators and additional accessories. The sagittal alignment plate is designed for use with and includes a centering height gauge. This gauge represents the position of the bregma landmark on the top of the skull of the research subject when mounted to the sagittal alignment plate.

Model 1923-B Gas Anesthesia Head Holder and Model 1922 Non-Rupture 60° Tip Mouse Ear Bars for mice are included. Custom palate bar design will insure absolute stability of the head. We have incorporated a custom nose clamping device that can be utilized for delivering gas anesthesia via connection to the inlet/outlet port located on the anesthesia mask.

Patent number 6,258,103
Patent number 6,716,220

Model 1940 Micro Manipulator provides 1 micron resolution linear glass scales with digital display readout, proving this instrument to be the most advanced manual manipulator available today. Our quick change tool holder allows you to attach any stereotaxic alignment tool and maintain an exact common vertical centerline position tool-to-tool. This valuable feature will assist in reducing surgical time, increase hit rates and greatly reduce potential time consuming errors, which provides a repeatable platform for your research.

Model 1900 Standard Accessories (supplied with Model 1900)

Model 1900-B Head Holder Assembly
Model 1900-C Base Plate and Slide Assembly
Model 1923-B Mouse Gas Anesthesia Head Holder
Model 1922 Non-Rupture 60° Tip Mouse Ear Bars
Model 1900-51 Centering Height Gauge

Recommended Accessories

Model 1905 Alignment Indicator provides dimensional feedback required for leveling the head.
Model 1910 Dial Test Indicator is necessary for calibrating the stereotaxic manipulator. Indicator will provide dimensional feedback required to verify manipulator alignment is perpendicular and square relative to the precision ground stereotaxic base plate.
Model 1911 Stereotaxic Drilling Unit
Model 1915 Centering Scope 40X magnification is used to assist with positioning the manipulator accurately over the centering height gauge (zero point of reference). This zero point is used to zero out the manipulator readout display and for setting the tool height for all tools to be used in the surgical procedure.
Model 1940 Micro Manipulator with Digital Display 1 micron resolution, 3-axis

***Additional tools may be necessary based on surgical requirements. Custom tools available and quoted upon request.
Stereotaxic Alignment Tools

Model 1905 Alignment Tool
Model 1910 Dial Test Indicator
Model 1911 Drilling Unit
Model 1915 Centering Scope 40x
Model 1975 Pipette Holder (1 mm, 1.5 mm or 2 mm)

Model 1973 Dual Cannula Holder (26 gauge)
Model 1974 Cannula Holder (26 gauge)
Model 1966 Cannula Holder Alzet/Plastic One
Model 1972 Syringe Holder
Model 1970 Electrode Holder
Small Animal Stereotaxic Instruments

Model 900 Single Manipulator 100 micron

Model 900LS Single Manipulator 100 micron

Model 963 Single Manipulator 10 micron

Model 940 Single Manipulator 10 micron
Kopf Small Animal Stereotaxic Instrument originally designed by David Kopf Instruments in 1963, is a versatile, easy-to-use instrument that facilitates proper alignment of small animals for the stereotaxic placement of electrodes, micropipettes, cannula and other devices.

The precise manner in which the instrument is built and assembled assures that the researcher will be able to make accurate and repeatable placements. Precise alignment of the slides assures smooth movements resulting in correct use of the atlases.

**Kopf Small Animal Stereotaxic Frames**

These instruments consist of a rugged “U” frame assembly to which is affixed a specified Kopf three-dimensional manipulator.

**Manipulator X,Y,Z adjustment** – Metric scale

80mm travel, 100 micron, 10 micron and 10 micron digital display, single or dual options available.

**Angle adjustment** – Fully universal joint calibrated on two planes for access from any angle. Vertical alignment pin can be removed for angled settings from 0°– 90° either side of vertical, 2° increments. New design includes a precision t-bolt locking mechanism to insure angles are held firm and rigid in place to provide positive angle presentations. (Photos do not display t-bolt design)

**Rotation adjustment** – Manipulator swivel base can be rotated up to 360°. Manipulator X/Z axis can be repositioned at 90° increments.

The stereotaxic frame is mounted to a 17”L x 10”W base plate and is elevated to bring ear bar height to 53 mm. Ear bar slots on the “U” frame have 0.1 mm verniers for ease in centering an animal. Ear bar zero to posterior end of base plate is 8.763”.

**Model 1770** Electrode Holder with corner clamp and **Model 920** Rat Adaptor are standard accessories included. Standard accessories that are not required can be omitted.

**Rat Adaptor features:**

**Dorsal/Ventral adjustment dial** – Calibrated in 100 micron increments, 1 mm per revolution

**Dorsal/Ventral adjustment** – 30 mm

**Dorsal** – 10 mm above ear bar zero

**Ventral** – 20 mm below ear bar zero

**Adaptor Plate A/P adjustment** – 44 mm

**Ear Bars** – Model 957 18° Tip Rat Ear Bars (6.3 mm square with 35 mm of calibration)
Small Animal Stereotaxic Instruments

Model 902 Dual Manipulator 100 micron

Model 962 Dual Manipulator 10 micron

Model 942 Dual Manipulator 10 micron

Model 930 Frame with Model 1460 Electrode Manipulator
Kopf provides a variety of frame upgrades options

Upgrading an existing Small Animal Stereotaxic Instrument is an affordable way to increase the accuracy of your stereotaxic set-up. Adding a second manipulator enables the use of additional tools during a surgical procedure.

Add a second manipulator

100 micron resolution

Model 960-RIGHT Electrode Manipulator – Metric scale 80 mm travel, calibrated 0.1 mm vernier scale (3.00 mm advance per revolution)

10 micron resolution

Model 961-RIGHT Micro Manipulator – Metric scale 80 mm travel, calibrated dial – 0.01 mm resolution (1.0 mm advance per revolution)

Add digital display

10 micron resolution digital display

Model 940-B Digital Display upgrade – Linear scales 10 micron resolution encoders with digital display console.

Model 940-B Digital Display upgrade is designed for use on Model 900 Small Animal Stereotaxic frame.

Model 942-B Digital Display upgrade is designed for use on Model 902 Dual Small Animal Frame. The linear scales/encoders along with the easy-to-read digital display readout console will upgrade a 100 micron resolution set-up to an improved 10 micron resolution. The digital display control features allow “zero” reset at any position.

Kopf provides repair and calibration services

Due to extensive usage or in some cases negligent care Kopf offers repairs/reconditioning/calibration services. This service will insure that alignment and calibration of instruments are within our quality specifications. Any mechanical instrument regardless of how well it is made will require calibration and or repair. This service is critical to insuring the continued accuracy of the equipment and will prolong the life of your Kopf instrumentation for decades.

Model 900 Single Manipulator 100 micron

Model 940-B upgrade mounted to Model 900 = Model 940 Digital Small Animal Stereotaxic

*All frame upgrades require factory installation and calibration.
David Kopf Instruments is pleased to introduce our collaboration with Neurostar, Germany, the inventor of the Motorized Stereotaxic (www.neurostar.de). We now offer Kopf stereotaxic instruments and manipulators with robotic features including state-of-art software.

Kopf's area of expertise will continue to focus on the design, accuracy and mechanical functioning of the stereotaxic frame, mechanical manipulator and head holding devices. Kopf frames will be the mechanical foundation for the Neurostar Motorized Stereotaxic. Robotic features and software are integrated by Neurostar. The finished product will be supported by Neurostar.

Using the Motorized Stereotaxic you can focus on the experiment without having to manipulate the stereotaxic by hand. Neurostar’s software allows you to control the motorized positioning of the probe in all three orthogonal axes by using the keyboard arrow keys, by clicking on the screen with the mouse or by using a joystick.

Neurostar’s Atlas Integration and Intuitive Movement Control enable ultra precise and reproducible stereotaxic microinjections, probe positioning and highly accurate automated drilling, craniotomy and brain windowing. Automated atlas adjustment by smart software algorithms compensates for human errors, interindividual variations and alignment inaccuracies.

Neurostar’s software facilitates experiment planning by atlas browsing, target definition, storage and retrieval. The optional usage of Robot Add-Ons such as Robot Drill, Robot Microinjection and Smart Bregma Finder saves time, increases experiment accuracy and reproducibility, enabling high-throughput stereotaxic procedures.

**Features**

- Computer Control
- Atlas Integration
- Head Tilt Correction
- Avoids Human Errors
- Experiment Planning
- Define/Store Targets
- Intuitive Navigation
- Angle Adjustments
- Bregma Setting
- Ultra Precise
- Time Saving
- High Throughput

**Stereotaxic Frame Includes:**

Stereotaxic “U” Frame Assembly

**Model 1770** Electrode Holder with corner clamp

**Model 920** Rat Adaptor including one set of

**Model 957** 18° Tip Rat Ear Bars

**Model 900-C** Base Plate (17”L x 10”W)

Any standard accessories that are not required can be omitted and the appropriate accessories quoted.

Kopf offers a wide range of animal adaptor, ear bars and stereotaxic holders.

Existing Kopf frames can be upgraded to incorporate any of these motorized options.
Large Animal Stereotaxic Instruments

Model 1404 Frame with Model 1460 Manipulators

Model 1504 Frame with Model 1460 Manipulators

Model 1730 Intracellular Frame
Model 1404 Stereotaxic Instrument consists of Model 1430 Frame Assembly with four Model 1460 Electrode Manipulators. Manipulator resolution is 100 microns (0.1 mm) all axis. Frame is equipped for use with cat or monkey but can be easily adapted for other animals. Frame and manipulators can be quoted separately.

A/P Bar(s) – 18.70 mm square
A/P Bar length – 30.50 cm
A/P Bar calibration – 100 mm each side of zero (ear bar centerline)
Frame Bar centerline distance – 17.78 cm
A/P zero to posterior end of bar – 12.08 cm
Ear Bar Locator position – A/P zero

Model 1504 Stereotaxic Instrument consists of Model 1530 Frame Assembly with four Model 1460 Electrode Manipulators. Manipulator resolution is 100 microns (0.1 mm) all axis. Frame is equipped for use with dog or large monkey. Frame and manipulators can be quoted separately.

A/P Bar(s) – 18.70 mm square
A/P Bar length – 37.47 cm
A/P Bar calibration – 100 mm each side of zero (ear bar centerline)
Frame Bar centerline distance – 17.78 cm
A/P zero to posterior end of bar – 12.08 cm
Ear Bar Locator position – A/P zero and 5 cm anterior

Model 1730 Intracellular Frame Assembly is designed primarily for intracellular recording and stimulation where high inertia, precision and clear access to the head during surgery are paramount. Frame is equipped for use with cat or monkey but can be easily adapted for other animals. Designed for use with 1760 and 1460-LB series manipulators (shown on page 12).

A/P Bar(s) – 21.65 mm square
A/P Bar length – 30.50 cm
A/P Bar calibration – 100 mm each side of zero (ear bar centerline)
Frame Bar centerline distance – 17.78 cm
A/P zero to posterior end of bar – 12.08 cm
Ear Bar Locator position – A/P zero
Manipulators for Large Animal Frames

Kopf Electrode Manipulators
100 micron resolution
Model 1460, 1460-61, 1460-LB, 1460-61-LB

Manipulator X, Z adjustment –
Metric scale 80 mm travel, calibrated 0.1 mm vernier scale (3.00 mm advance per revolution)

Manipulator Y adjustment –
Model 1460 – Manual adjustment 100 mm each side of zero (A/P bar) 0.1 mm vernier scale

Manipulator Y adjustment –
Model 1460-61 – Metric scale 25 mm travel, calibrated dial – 0.01 mm resolution (1.0 mm advance per revolution)

Angle adjustment – Fully universal joint calibrated on two planes for access from any angle. Vertical alignment pin can be removed for angled settings from 0° – 90° either side of vertical, 2° increments. Manipulator swivel design includes a precision t-bolt locking mechanism to insure angles are held firm and rigid in place to provide positive angle presentations. (Photos do not display t-bolt design)

Rotation adjustment – Manipulator swivel base can be rotated up to 360°. Manipulator X/Z axis can be repositioned at 90° increments.

Kopf Micro Manipulators
10 micron resolution
Model 1760, 1760-61, 1760-SB, 1760-61-SB

Manipulator X, Z adjustment –
Metric scale 80 mm travel, calibrated dial – 0.01 mm resolution (1.0 mm of travel per revolution)

Manipulator Y adjustment –
Model 1760 – Manual adjustment 100 mm each side of zero (A/P bar) 0.1 mm vernier scale

Manipulator Y adjustment –
Model 1760-61 – Metric scale 25 mm travel, calibrated dial – 0.01 mm resolution (1.0 mm advance per revolution)

Angle and Rotation adjustment –
Same specifications as noted for 1400 series manipulators above.

Models 1460, 1460-61, 1760-SB, 1760-61-SB compatible for use with 18.70 mm AP bar.

Models 1760, 1760-61, 1460-LB, 1460-61-LB compatible for use with 21.65 mm AP bar.
Model 900M Small Animal MRI Stereotaxic Instrument is designed to successfully stabilize small animals for stereotaxic surgery. Model 900M-B MRI Head Holder Assembly with Model 920M Rat Adaptor with ear bars provides easy access and removal from the stereotaxic base for insertion into MRI device. The removable MRI head holder is designed to fit into a MRI device 12 cm diameter (or larger).

- **A/P Bar** – 18.70 mm square
- **A/P Bar length** – 25.40 cm
- **A/P Bar calibration** – 100 mm each side of zero (ear bar centerline)
- **A/P zero to posterior end of bar** – 12.70 cm
- **Ear Bar Locator position** – A/P zero

Model 900M-B MRI Head Holder Assembly

**Dimensions:**
- 16” (40.64 cm) length
- 3.964” (10.07 cm) width
- 3.430” (8.71 cm) height

**Material:**
- ULTEM-1000, Nylon 6-6, Delrin

Model 1430M MRI Stereotaxic Instrument is designed to successfully stabilize a cat or monkey for stereotaxic surgery. Unit can be repositioned into a MRI device without generating electromagnetic interference. Model 1245M Cat / Monkey Adaptor with ear bars are included.

- **A/P Bar(s)** – 18.70 mm square
- **A/P Bar length** – 30.50 cm
- **A/P Bar calibration** – 100 mm each side of zero (ear bar centerline)
- **Frame Bar centerline distance** – 17.78 cm
- **A/P zero to posterior end of bar** – 12.08 cm
- **Ear Bar Locator position** – A/P zero

**Dimensions:**
- 16.500” (42 cm) length
- 7.937” (20.16 cm) width
- 8.857” (22.5 cm) height

**Material:**
- ULTEM-1000, Nylon 6-6, Delrin

**Weight:** 7lbs. 12 oz

Model 1530M MRI for Dog / Large Monkey

- **Frame A/P Bar Length** – 37.46 cm
- **Frame Bar centerline distance** – 17.78 cm

Model 1630M MRI Special (larger frame width)

- **Frame A/P Bar Length** – 37.46 cm
- **Frame Bar centerline distance** – 22.86 cm
Animal Adaptors

Mouse

Model 921-E Low Profile

Rat

Model 920-E Low Profile

Mouse

Model 926 Traditional

Rat

Model 920 Traditional

Mouse

Model 923-B Gas Anesthesia

Rat

Model 929-B Gas Anesthesia

Neonatal Mouse

Model 933-B Gas Anesthesia

Neonatal Rat

Model 973-B Gas Anesthesia
Animal Adaptors

Neonatal Rat

Guinea Pig

Model 970

Model 916

Small Bird

Bird

Model 914

Model 1215

Pigeon

Squirrel Monkey

Model 1218

Model 1248

Cat / Monkey

Dog / Monkey

Model 1245

Model 1535
Animal Adaptors

Model 927
Ferrett

Model 1240
Rabbit

Model 924
Rotational Rat

Model 1541
Piglet

Model 1247
Neonatal Lamb

Model 931
Prairie Vole

Model 865
35mm Offset Ear Bars & Riser Block

Model 866
35mm Offset Ear Bars & Riser Block

Model 931
Cat / Monkey

Model 931
Cat / Monkey
# Ear Bars

<table>
<thead>
<tr>
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<th>Model #</th>
<th>Name</th>
<th>Description</th>
<th>Tip Shape Shown</th>
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<td>821</td>
<td>Non-Rupture</td>
<td>Zygoma ear cups (serrated and soft tissue)</td>
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<tr>
<td></td>
<td>921</td>
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<td></td>
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<td>822</td>
<td>Non-Rupture</td>
<td>60° Non-Rupture tip</td>
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<td>Non-Rupture</td>
<td>20° tapered tip to a 4.8 mm shoulder with a 3 mm dia. by 2 mm long protrusion</td>
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<tr>
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<td>1752</td>
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<td></td>
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<tr>
<td>5</td>
<td>853</td>
<td>Hollow</td>
<td>4 mm hole through for auditory stimulation</td>
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<td>953</td>
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<td>1753</td>
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<td>855</td>
<td>Non-Rupture</td>
<td>45° Non-Rupture tip with a 0.8 mm radius</td>
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<td>955</td>
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<td>(Pigeon)</td>
<td>3 mm dia. by 6 mm long tip with a full radius on end</td>
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<td>8</td>
<td>857</td>
<td>(Rat)</td>
<td>18° tip with 0.8 mm radius</td>
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<tr>
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<td>1757</td>
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</table>

800 series ear bars have 50 mm calibration markings, 6.3 mm square for use on 1430 / 1530 frames.
900 series ear bars have 35 mm calibration markings, 6.3 mm square for use on 900 series frames.
1700 series ear bars have 50 mm calibration markings, 9.4 mm square for use on 1730 frame.

## Anesthesia Mask

**Model 906 Rat Anesthesia Mask** compatible with Model 920, 1220, 1520 & 1720 Rat Adaptors. Design includes a dorsal adjustment screw which can be used to apply pressure down onto the nose for securing upper jaw onto adaptor tooth bar. A rubber seal insert lines the internal cavity of the rat anesthesia mask. Inlet and outlet ports are 5/16” outside diameter.

**Model 907 Mouse Anesthesia Mask** compatible with Model 921-E, 926, 1226, 1526 & 1726 Mouse Adaptors. Inlet and outlet ports are 5/16” outside diameter.
**Stereotaxic Holders**

**Electrode, Glass Pipette, Hypodermic Tubing**

Model 1769 holds electrodes from 0.4 mm to 1.3 mm diameter.

Model 1770 with Corner Clamp holds electrodes from 0.4 mm to 1.3 mm diameter.

Model 1771 with Straight Clamp holds electrodes from 0.4 mm to 3.8 mm diameter.

Model 1771-A-Mod includes a clamp pad adhered to the inside of clamp for holding glass pipettes .092 mm to 2.325 mm.

Model 1773 with Removable Open Side Clamp holds electrodes from 0.4 mm to 3.6 mm diameter.

Model 1774 Wedge Holder with Removable Flag has a tapered profile for positioning numerous electrodes close together.

**Cannula, Syringe**

Model 1766-AP holds Alzet and Plastic One cannula 3.4 mm to 3.5 mm diameter pedestal.

Model 1772 Universal holds diameters from 2.8 mm to 11 mm diameter. **Model 1772-F** includes needle support foot designed to hold Hamilton syringes.

Model 1776 Custom drilled to hold specific diameter. Hole sizes available from 1.5 mm to 6 mm. *(Special Order)*

Model 1776-P2 Dual Adjustable Cannula holds (2) Alzet and Plastic One cannula 3.4 mm to 3.5 mm diameter pedestal.

Model 1776-P1 holds Alzet and Plastic One cannula 3.4 mm to 3.5 mm diameter pedestal.

Model 1779 Cannula holds a variety of guide cannula manufactured by CMA Microdialysis.
Stereotaxic Drills

**Model 1474 High Speed Stereotaxic Drill** can be run at a variable speed with dial or foot pedal control. Control speed range is 0–45,000 rpm. Both the micro motor and foot pedal control have forward and reverse operation. Steady constant speed can be achieved with proper flip of the switch from foot to manual control.

Additional design features includes a quick change rotary chuck handpiece with DC motor housed within. This handpiece is distinguished from flexible shaft machines by higher speed performance and added flexibility. Standard collet 1/8”. The handpiece is vibration-free, quiet running and lightweight.

**Model 1474 Handpiece**
- Collet 1/8”
- Size: 6” overall length
- 5/8” grip diameter
- 1” motor diameter
- 1.75 amps (110V)
- .75 amps (220V)
- Weight: 7.5 ounces

**Model 1470 and 1471 Stereotaxic Drills** include the Foredom hanging motor with foot pedal. Speed control range from 0–14,000 rpm, 110–130 volts AC/DC.

**Model 1470 Handpiece**
- Collet 3/32”
- Size: 3/4” diameter
- Length: 10¾”
- Weight: 5 ounces (handpiece only)

**Model 1471 Handpiece**
- Collet Jacobs chuck 0 to 3.9 mm diameter
- Size: 1” diameter
- Length: 5¼”
- Weight: 6 ounces (handpiece only)

**Models 1464 and 1466 Handpiece Holder included.** *(Drill bits sold separately)*
Model 5000 Microinjection Unit

Model 5000 Microinjection Unit provides a simple and reliable method of standardizing the use of µL syringes for accurate, repeatable delivery of minute amounts of fluid. It consists of an inter-changeable syringe holder plunger drive mechanism, delivery control knob and adjustable foot support to stabilize the needle tip.

The syringe holder firmly holds the syringe in position while the plunger remains stationary until it is moved by the control knob. The finely calibrated control knob permits smooth, precise dispensing of increments smaller than .001 µL of fluid. The quick-release syringe holder allows syringes to be refilled and repositioned rapidly and accurately.

Model 5000 Standard Accessories (supplied with Model 5000)

- **Model 5001** Syringe Holder
  Hamilton syringes .305 barrel diameter (25 gauge)

- **Model 1770-C** Upper Bracket Assembly
  for attachment to Kopf manipulator.

Optional Accessories

- **Model 5002** Syringe Holder
  Hamilton syringes .260 barrel diameter (26 gauge)

- **Model 5003** Micro Pipette Holder

- **Model 5004** Syringe Holder
  Hamilton syringes .305 barrel diameter (22 gauge)

- **Model 5000-G** Coarse Adjustment Handle is used to rotate control knob at a rapid pace.

Model TCAT-2LV

Temperature Controller

Model TCAT-2LV Temperature Controller combined with **Model HP-1M** Heating Plate and appropriate animal rectal probe, Model RET-2-ISO (rat) or Model RET-3-ISO (mouse) is designed to monitor and maintain a specified body temperature of anesthetized animal during stereotaxic surgical procedures. (rectal probes not shown)
Model 980 Small Animal Spinal Unit is ideal for a variety of spinal procedures. A combination of spinal clamps are included, making this unit extremely versatile for research with various small animals. It is easily the most flexible spinal unit available to researchers today.

Model 912 Spinal Base Plate is precision machined and has two full length tee slots for rapid mounting and removal of components. The top is left natural to assure precise location of the various spinal accessories. Base plate design incorporates mounting holes for attaching a Kopf small animal stereotaxic frame if required.

Attached to the plate by way of tee slots are seven base mounts with vertical posts and clamps. The mounts are secured to the base plate by thumb screws and tee nuts for fast, rigid clamping. No wrenches are needed.

The posts have 3/8” shaft and have 4.5” of vertical adjustment. The upright assembly clamps are designed with thumb screws for fast and easy height adjustment. The design of the 980 assures ample lateral, A/P and vertical travel of all components.

Model 980 Standard Accessories
(supplied with Model 980)
Model 912 Spinal Base Plate
Dimensions: 22”L x 12”W x 1”H
Weight: 27 lbs.
Model 981C Retractor (pair)
Model 982 Adjustable Base Mounts with Post and Clamp (Qty. 7)
Model 985 Hip Spikes (pair)
Model 986C Vertebrae Clamp
Model 987 “V” Notch Spikes (pair)

Model 1780 Large Animal Spinal Unit
(supplied with Model 1780, product not shown)
Model 1712 Spinal Base Plate
Dimensions: 36”L x 12”W x 2¼”H
Weight: 77 lbs.
Model 1782 Base Mounts with Adjustable Vertical Posts (Qty. 4)
Model 1785 Adjustable Hip Spikes and Mounting Block (pair)
Model 1786 Vertebrae Clamp and Mounting Block (pair)
Needle Pipette Puller

Model 720 Single Stage Needle Pipette Puller is the ideal instrument for the busy laboratory where a number of pipettes are required. This unit is easy-to-use, versatile and a reliable vertical pipette puller with excellent repeatability.

Model 730 Two Stage Needle Pipette Puller has truly advanced features. In addition to controllable parameters in the pulling sequence, this unit has separate heater controls for patch clamp pipettes. By setting or adjusting values for the first and/or second pull, in conjunction with the other various parameters, you can vary the length, taper and tip to achieve an endless variety of shapes and sizes.

This is possible because all Kopf pullers have the ability to control the parameters in the pulling sequence. Parameter controls include two heater control knobs and digital display with 0.1 resolution, DC regulated solenoid control and optical switch with adjustable flags to set the length of gravity fall. These controllable parameters coupled with heater configuration allow a wide variety of pipettes to be pulled.

Small fluctuations in heater temperature can significantly affect the shape of a pipette during pulling sequence. To help prevent this, Kopf pullers are designed to be less susceptible to line voltage changes. Heater voltage is divided into 20 units with a resolution of 0.1 units.

All units pull pipettes vertically to assure straight, concentric shapes. The slide mechanism employs super accurate bearing components. The vertical design is so effective that there is no need for air jet cooling.

Specifications

Size: 9½” W x 14½” H x 11” D  •  Weight: 37 lbs (total shipping)

Power Requirements: 100/120/220/240 VAC, 50-60 Hz via rear panel entry module with appropriate power cord.

Solenoid Current: 0-5 amp DC current regulated with resolution of 0.1 amp. (Model 750) Solenoid Current: 0-5 amp DC regulation.

Delay Time: 0-3 sec. with resolution of 0.001 sec.

Optical Switch: Adjustable micrometer with positive lock calibrated in 0.01 mm increments. (Model 750) Optical Switch: Fixed location with adjustable flags. (Model 720 & 730)

Fuses: 4 amp, 2.5 amp (100/120 VAC); 3.15 amp, 2.5 amp (220/240 VAC)
Direct Drive and Hydraulic Micropositioners

Model 2660 and 2662
Direct Drive Micropositioners are an electronically controlled direct drive micro stepping positioner ideal for high penetration velocity with exact actual movement of the probe.

The probe drive assembly is designed to support linear movement with travel range of 25 mm (Model 2660) or 50 mm (Model 2662). The probe is motor driven and has zero creep and zero backlash. Probe design incorporates a pin for grounding the probe. Probe drive assembly incorporates a 15 foot cable for connecting to the electronic control assembly.

Model 2650 and 2670
Hydraulic Micropositioners are an electronically controlled hydraulic drive micro stepping positioner.

The hydraulic assembly is designed to support linear movement with travel range of 25 mm (Model 2650) or 35 mm (Model 2670).

Electronic control assembly is designed for travel speeds that can be pre-selected up to 10 pre-defined speed settings with ranges from 1 µm/sec. to 4 mm/sec. Direct Drive maximum resolution of 0.1 µm. Rapid single motion (Burst): from 0.1 µm to 99.9 µm. Hydraulic Drive – due to the performance characteristics of a hydraulic system, select speeds and distances of .5 µm or higher are recommended with maximum resolution of 0.5 µm.

Model 2650-Z Hand Control with 10 foot cable provides absolute control of the microdrive. A retract / advance rocker switch is utilized for directional positioning. Burst and run movement are controlled with individual pushbuttons. A reset button (recessed guard protection) is used for resetting the control panel display readout. We also offer Model 2650-Z-T Hand Control with spring loaded toggle run switch as an alternative to the standard pushbutton style run switch.

Standard unit is a bench top set-up, rack mount accessories are quoted upon request. A 6 foot power cord with applicable power plug is included.

All Kopf 2600 series Micropositioners are FCC, Part 15 and CE approved.

Model 640
Manual Hydraulic Micropositioner
Travel range: 25 mm (product not shown)
Warranty & Disclaimer

All product components manufactured by David Kopf Instruments are warranted to be free of defects in materials and workmanship for one year from date of shipment. Other manufacturer's products used are subject to their warranty.

There are no express warranties except as listed above. Additionally, such warranty becomes null and void because of abuse, disassembly or unauthorized repair of product. Refer to maintenance section located on www.kopfinstruments.com and/or instruction manual included with equipment.

All express and implied warranties, including warranties of merchantability and fitness for a particular purpose, are limited to the applicable warranty period set forth above.

Each and every product designed, manufactured and sold by David Kopf Instruments is intended exclusively for use in animal research and is not under any circumstances intended for use on humans or clinical practice on privately owned animals.

Because our products are intended exclusively for use in animal research, none of the products designed, manufactured or sold by David Kopf Instruments has been approved for use on humans by the Federal Drug Administration or any other federal or state agency. It has always been our position that our products are to be used exclusively in animal research. Any use of our products, except as provided in this paragraph, shall immediately terminate any warranty that might otherwise apply.

Warranties will be honored only on products purchased directly through our Tujunga office or authorized David Kopf Instruments representative.
Introducing an interactive summary catalog, all photos are linked to our website to provide full product specifications.

SPINAL UNITS ▪ MICROPPOSITIONERS ▪ PIPETTE PULLERS

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