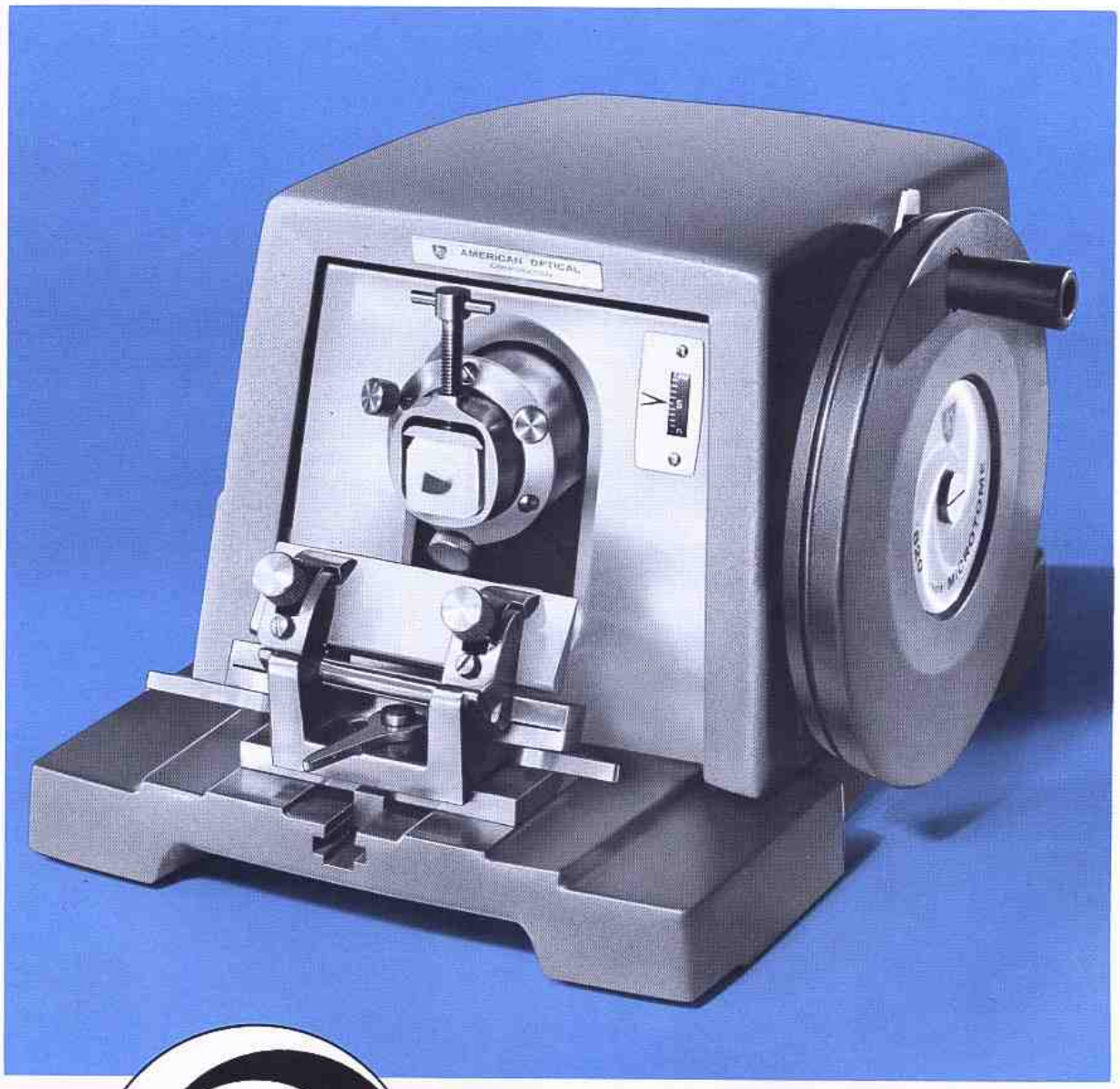


820 ROTARY MICROTOME

AMERICAN OPTICAL
CORPORATION
SCIENTIFIC INSTRUMENT DIVISION • BUFFALO, N. Y. 14215

Now the "820" is better than ever!

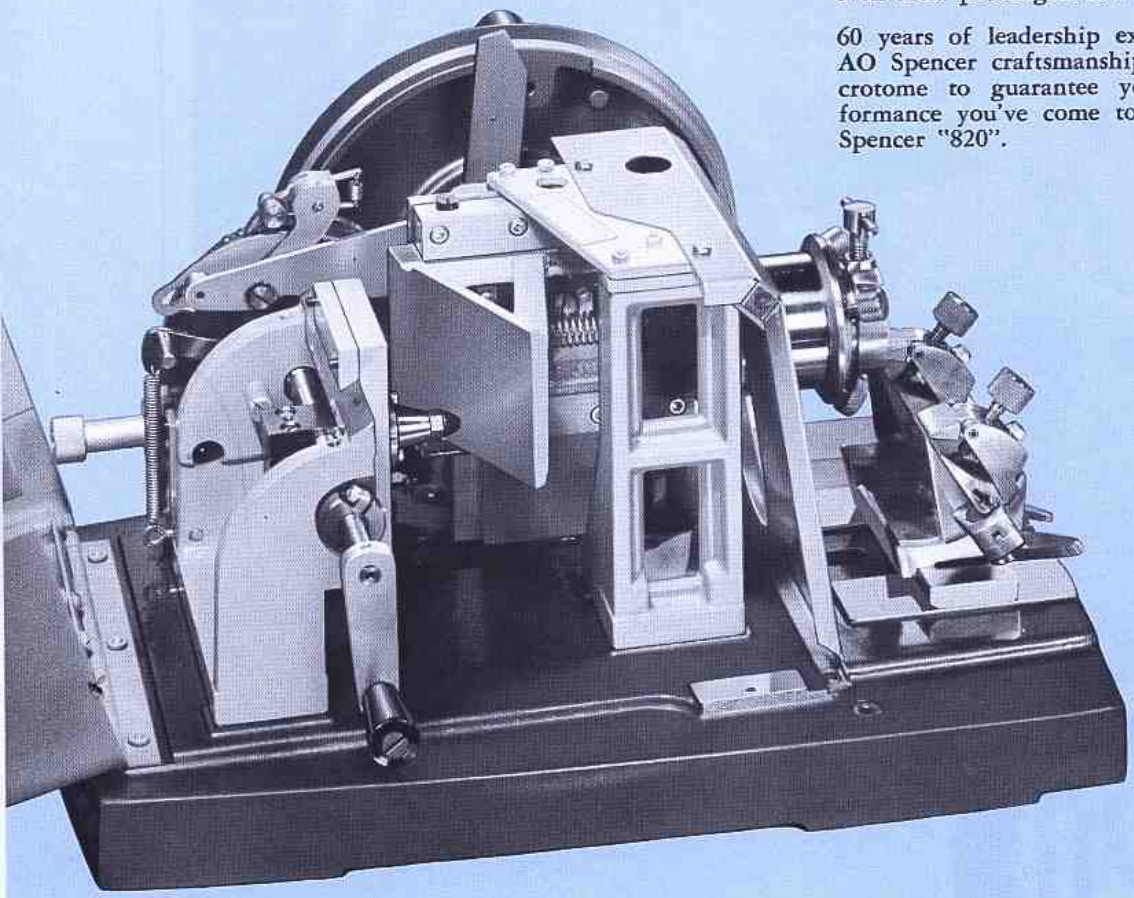
The AO Spencer No. 820 Precision Rotary Microtome has long been the standard sectioning instrument in virtually every medical, educational and research laboratory in the world . . . wherever materials must be critically sectioned for examination with the microscope. For over half a century, the "820", as it is familiarly called, has remained unchallenged for precision, dependability and overall superiority of performance.

The new "820" is better than ever! Significant improvements in styling and construction provide new and important convenience features. You'll find it easier to use, easier to clean, easier to lubricate, and . . . more precise than ever!

The operating principle and time-proved mechanism remain essentially unchanged. However, new manufacturing methods and new inspection controls have resulted in still closer-than-ever assembly tolerances for the vital fittings of the three hand-lapped, compound slideways. New, more easily accessible lubrication points have been provided to assure longer life.

All AO Spencer Microtome Knives are made from highest quality, fine grained tool steel. This selected steel is heat treated and tested for hardness and micro structure. Each knife is finish ground, polished and honed to yield the keenest possible cutting edge . . . sharp, true edges are maintained even after prolonged use.

60 years of leadership experience and traditional AO Spencer craftsmanship go into each new microtome to guarantee you the unequalled performance you've come to expect from every AO Spencer "820".

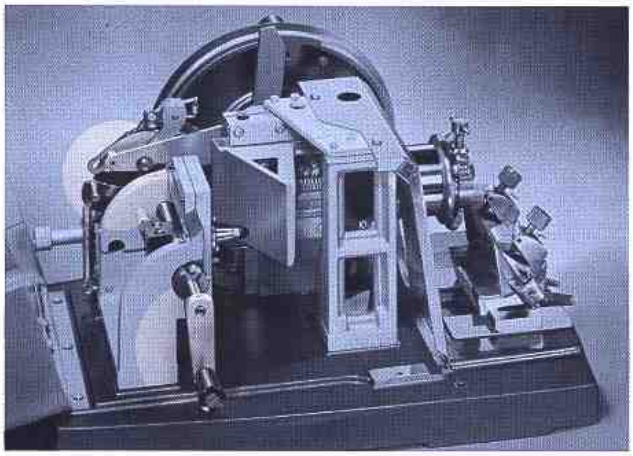


No. 820 Precision Rotary Microtome with hinged cover open to expose feed mechanism and complete interior.

TIME-PROVED OPERATING PRINCIPLE REMAINS UNCHANGED . . . ASSURES FAMILIAR "820" PERFORMANCE. NEW CONVENIENCE FEATURES MAKE IT EASIER TO USE, EASIER TO CLEAN, EASIER TO LUBRICATE.

feed mechanism

The all-important feed mechanism remains unchanged . . . is independent of the vertical movement of the object block. With every complete revolution of the counterbalanced drive wheel, the feed pawl engages precisely into the teeth of the rachet wheel, feeding on the forward stroke and disengaging until the next stroke. The rachet wheel rotates a feed screw which advances the cone a measured distance from left to right across the face of a vertically moving inclined plane. This reduces the ratio of feed and drives the object block forward toward the knife in such precise increments that tissue can be sectioned down to 1 micron in thickness. Compound slideways provide smooth, accurate object travel. The up and down excursion of the object block is two inches . . . permits cutting of large serial sections.

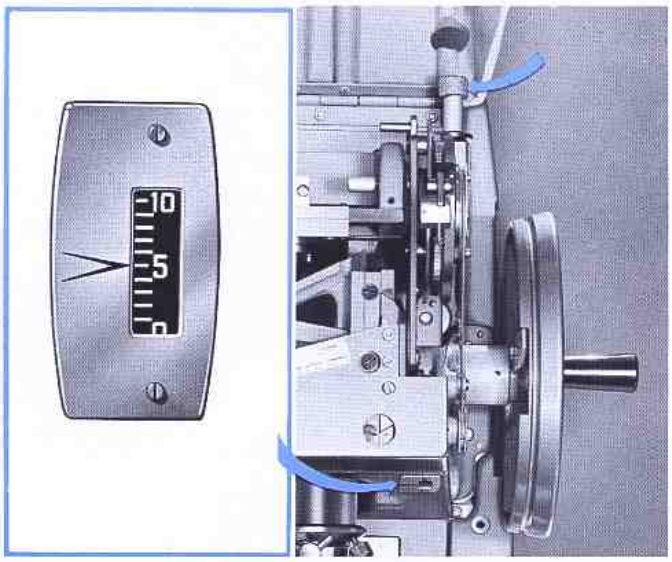


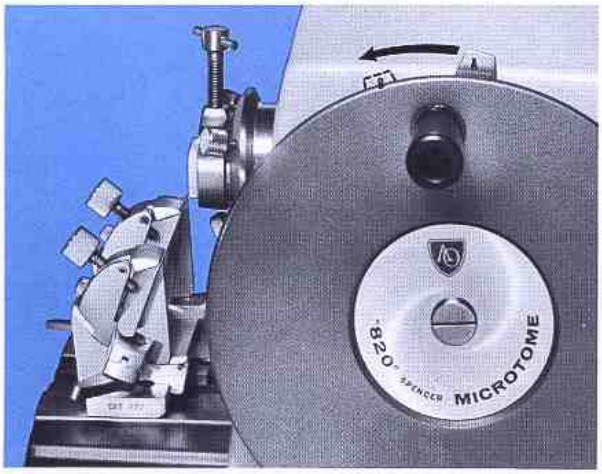
automatic feed release

When the limit of the feed is reached, a safety device disengages the feed mechanism automatically . . . eliminates jamming and damage to feed screw. Total excursion of the feed is 28mm. A crank at the left of the microtome engages the feed screw . . . you use it to bring the feed screw back to starting position and to advance the object block to the knife edge . . . permits quick trimming of front of object block.

front-positioned feed indicator

The feed indicator, graduated in microns, is conveniently located on the front of the "820". A knurled knob at the back of the microtome controls feed settings from 1 to 50 microns. A detent action assures positive adjustments in 1 micron increments.





locking device

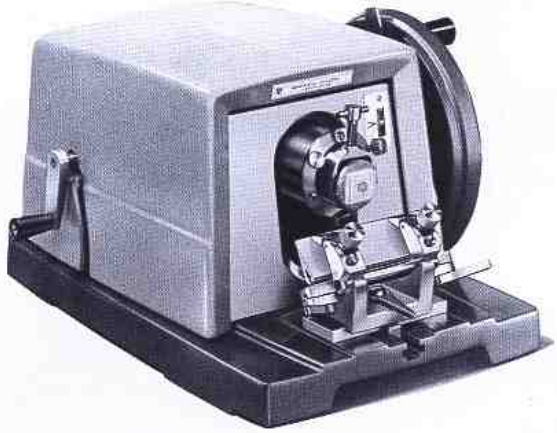
A slight forward push of your thumb against a lever locks the counterbalanced drive wheel securely. The object block is stopped at the top of its excursion . . . you have ample clearance to safely insert and orient specimen block, clean knife edge, or remove knife without disturbing knife holder alignment. A quick flip of the lever releases the wheel.

new styling . . . sturdy, rigid construction

A massive base rigidly supports the mechanism and knife holder. A protective cover, cast from sturdy, lightweight aluminum, is hinged to the base. The cover swings back to completely expose all the interior parts . . . this new construction permits easier access for cleaning and lubrication.

The baked-on epoxy enamel finish is amazingly durable . . . resists chipping, abrasion, corrosion and staining to assure a like-new appearance throughout the instrument's long lifetime.

The over-all finish of satin-smooth, two-tone gray enamel and stainless steel further enhances the attractive new look provided by the clean, functional styling.



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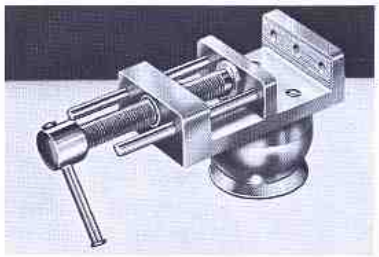
NO. 825 OBJECT CLAMP The No. 825 ball and flange type object clamp is supplied as standard with the "820" . . . accommodates specimens up to 32mm by 27mm. Three screws locate and rigidly lock the clamp into position.

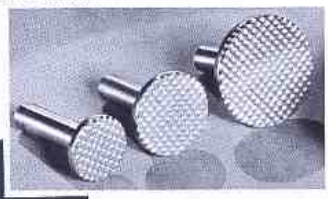
NO. 828 JOHNS HOPKINS CLAMP No. 828 Johns Hopkins Clamp can be supplied for accessory use with the "820". The clamp is 1¾" wide...jaws have a depth of ⅜" and open to a maximum of 1⅞" to accommodate various sizes of blocks.

No. 825 Object Clamp supplied with No. 820 Microtome.

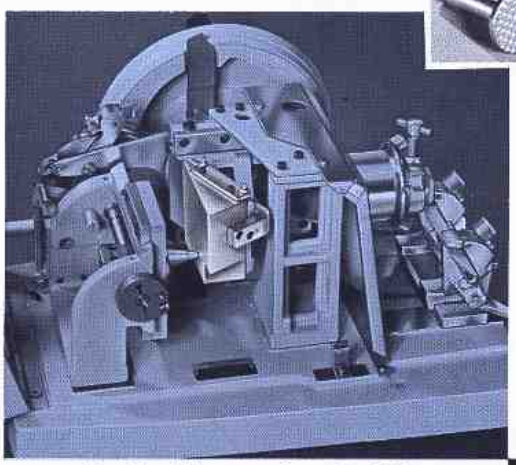


No. 828 Johns Hopkins Clamp.

AO Spencer Knife No. 942 with No. 961 Back and No. 955 Handle.

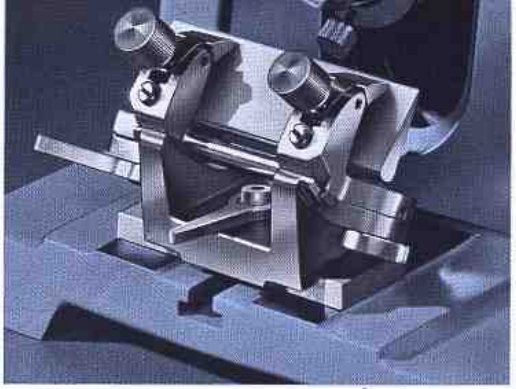


Object Discs Nos. 813, 812, 811



No. 821 Microtome shows No. 829 Adapter attached to inclined plane.

No. 829 Adapter.



New No. 822 Knife Holder provides rigid, torque-free clamping of knife.

NO. 822 KNIFE HOLDER Knife Holder No. 822 supplied with the "820" will accommodate all AO Spencer Microtome knives except 250mm. All major parts are stainless steel. Variable lateral knife adjustments permit use of all the knife edge except a few millimeters held by knife clamps. Tilt angles may be changed over a 30° range. A reference scale graduated into 2° increments simplifies the relocation of knife tilt. Knife elevating and leveling adjustments are readily accessible.

NO. 942 KNIFE AO Spencer Knife, No. 942, 120mm long, with No. 961 Back and No. 955 Handle are supplied as standard with the "820". Knife furnished in leatherette covered case . . . compartments accommodate knife, knife back and handle.

catalog number	description	price
820	AO Spencer Precision Rotary Microtome with No. 822 Knife Holder, Nos 942 Knife, 961 Back, 955 Handle and 969 Pike Oil	$1608.00
821	Same as No. 820 AO Spencer Precision Rotary Microtome but with ultra-thin sectioning adapter No. 829	1770.00
813	⅞" diam. Object Disc	4.50
812	1⅛" diam. Object Disc	4.50
811	1½" diam. Object Disc	4.00
822	Knife Holder	100.50
829	Adapter to convert No. 820 Microtome for ultra-thin sectioning.	162.00
828	Johns Hopkins Large Object Clamp, as described, for Nos. 820 and 821 Microtomes	40.00
825	Standard replacement Object Clamp for Nos. 820 and 821 Microtomes	36.00
942	Knife; 120mm., in Case without Back, Handle	40.00
945	Knife; 185mm., in Case without Back, Handle	91.00
961	Knife Back for 942 Knife*	5.50
962	Knife Back for 945 Knife*	5.50
955	Knife Handle for 942 and 945 Knife	13.00
969	Pike oil for microtomes and hones, 4 oz. can	1.10

* It is recommended that each knife be ordered with individual knife back fitted at factory if necessary for knife sharpening purpose.

No. 821 MICROTOME
FOR ULTRA-THIN SECTIONS

The AO Spencer No. 821 Precision Rotary Microtome is identical to the No. 820, but is fitted with an inclined adapter to further reduce the ratio of feed screw increments. Adapter No. 829 fits over the inclined plane to provide feed increments down to 1/20th of a micron. Each one micron increment becomes 1/20 the value shown at indicator window. For example, when indicator is set at one micron: increment of feed = 1/20 × 1 = .05 micron; at two microns: 1/20 × 2 = .1 micron; etc.

Consistent ultra-thin sections can be cut for examination with the electron microscope.

The No. 829 Adapter attaches quickly and easily to the "820" and may be removed when thicker sections are required.

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AO MODEL 822 and 826 KNIFE HOLDERS

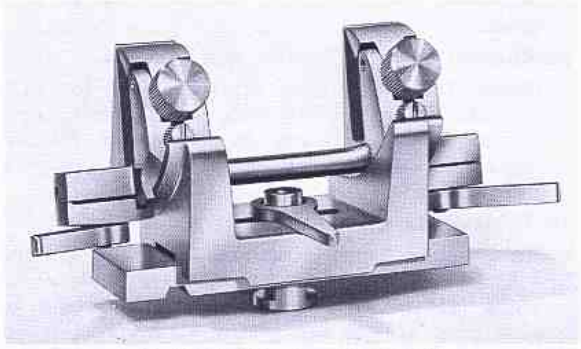
AO Model 822 and 826 Knife Holders . . . for optimum knife support . . . greater and easier knife adjustments . . . more precise sectioning with your AO Rotary Microtomes.

- **Stainless steel . . . for strength, durability, lasting appearance**
- **Variable lateral knife adjustment**
- **Variable tilt knife adjustment**
- **Variable elevating knife adjustment**

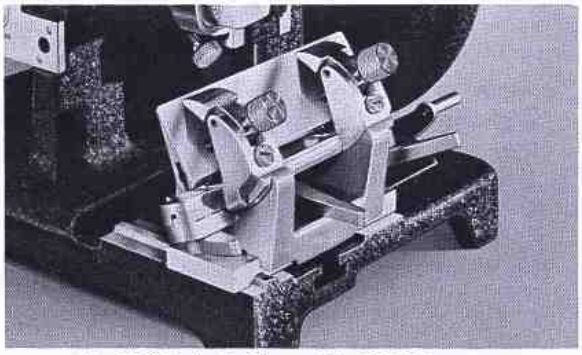
The AO Model 822 Knife Holder is designed for use with Microtome Models 820 and 821 bearing serial numbers greater than No. 38000.

Model 826 Knife Holder is designed for use with Microtome Models 820, 821 bearing serial numbers less than No. 38000 and continues to be supplied as standard with Model 815 Microtome.

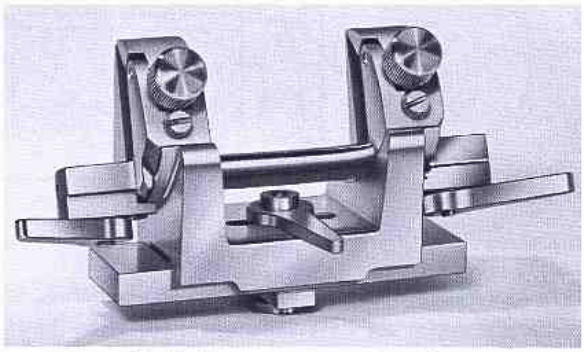
All major parts are stainless steel for maximum strength . . . durability . . . lasting appearance . . . and rigid knife support. The holder provides rigid, torque-free clamping of knife.



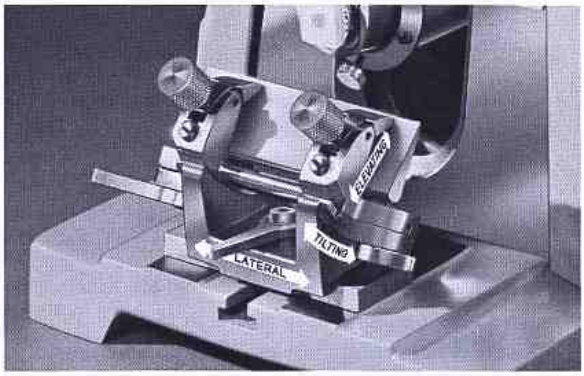
Model 826 Microtome Knife Holder



No. 826 Knife Holder on No. 815 Microtome.



Model 822 Microtome Knife Holder



No. 822 Knife Holder on No. 820 Microtome. Arrows illustrate variable tilt angle and elevating adjustment, as well as variable lateral knife adjustment.

Variable lateral knife adjustment permits use of all the knife edge except a few millimeters held by the knife clamps. Less frequent knife sharpening is required . . . knives last longer.

Tilt angles may be changed over a 30° range without repositioning holder. A reference scale graduated into 2° increments simplifies the relocation of knife tilt.

Knife elevating and leveling adjustments are readily accessible . . . simple and trouble free.

Catalog Number	Description	Unit Price Qty. 1-4	Unit Price Qty. 5 or More
822	Knife Holder for Microtome Models 820, 821, bearing serial numbers greater than #38000.	**$160.50**	**$144.45**
826	Knife Holder for Microtome Model 815. Also for Models 820, 821, bearing serial numbers less than #38000.	**$160.50**	**$144.45**

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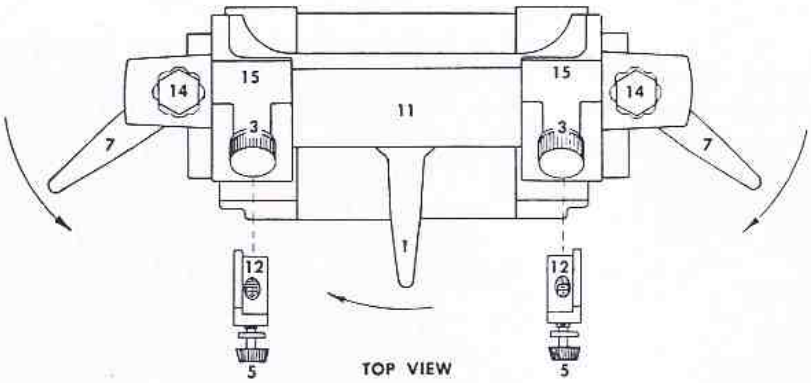
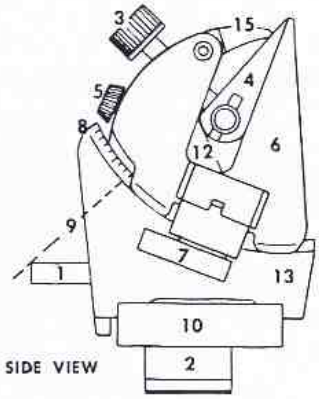
INSTRUCTIONS FOR USE OF MODEL 822 and 826 KNIFE HOLDERS





1. Base and lateral clamp wrench
2. Base clamp stud
3. Knife clamp screws
4. Knife
5. Leveling screws
6. Knife brackets
7. Tilt clamp levers
8. Scale
9. Scale index
10. Base plate
11. Knife bracket bar
12. Leveling wedges
13. Cradle
14. Hexagonal screws
15. Clamp leaves

1. To Mount Knife Holder onto Microtome

Rotate base and lateral clamp wrench (1) counter-clockwise . . . slide knife holder assembly onto microtome base . . . advance holder to desired position . . . clamp firmly by clockwise rotation of lever (1). When firmly clamped wrench lever should point at user . . . final clamping position of lever may be altered simply by changing relationship of wrench and hex nut.

2. To Clamp and Elevate Knife in Holder

Rotate knife clamp screws (3) counter-clockwise to allow sufficient clearance for insertion of knife (4) . . . insert knife from either side . . . simultaneously adjust leveling screws (5) until cutting edge of knife is elevated level with top of knife brackets (6) . . . tighten knife clamp screws (3) firmly—do not use excessive force.

3. To Adjust Knife Tilt

Release tilt clamp levers (7) . . . rotate entire upper sub-assembly until desired clearance angle between knife facet and specimen is obtained. Cutting edge of the knife is at the axis of rotation and reference scale (8), graduated in 2° increments, may be used as a convenient reference index. Tighten tilt clamp levers (7).

4. To Adjust Lateral Position of Knife

Rotate base and lateral clamp lever (1) counter-clockwise slightly . . . slide entire upper assembly laterally on base plate (10) . . . orient desired portion of knife cutting edge to specimen . . . tighten base and lateral clamp lever (1).

SUPPLEMENTARY NOTES

To Adjust Tilt Clamp Levers (7)

To Change Clamping *Position* of Clamp Levers

The clamping position of the tilt clamp levers (7) can be reset in 30° increments. Loosen levers (7) . . . remove entire knife bracket assembly (6) from cradle (13) by sliding it (6) up toward user . . . partially unscrew lever (7) push up until hexagonal head (14) clears serrated socket . . . rotate hexagonal head in direction lever is to be repositioned . . . reinsert into serrated socket . . . and tighten lever.

To Reverse Clamping *Direction* of Clamp Levers

The clamping direction of clamp levers (7) can be reversed by removing lever and companion hex screw (14) from each side and replacing on opposite side. Each lever has its companion hex screw . . . one set right-hand threaded . . . the other set left-hand threaded.

To Remove Leveling Screws and Wedges

Remove knife clamp screw (3) from clamp leaf (15) . . . . drop clamp leaf (15) back . . . lift leveling screw (5) and wedge (12) out through bracket (6) slot. Replace left wedge in left bracket and right wedge in right bracket.

To Remove Base Plate

Remove entire knife bracket assembly (6) from cradle (13). Unscrew hex nut off base clamp stud (2) and lift cradle (13) from base plate (10). To reassemble, replace cradle (13) on base plate (10), insert base clamp stud (2) in base plate (10) so that pin in base plate (10) engages into pin hole of clamp stud (2). Replace flat washer before threading hex nut on base clamp stud (2).

To Clean and Lubricate

Clean parts with xylene. Lubricate bearing surfaces and screw threads with Pike oil or similar lubricant.

To Use AO Model 966 Razor Blade Holder

Clamp razor blade in 966 holder . . . set holder in knife brackets (6) . . . rest clamp stud of 966 holder against knife bracket bar (11) . . . tighten knife clamp screws alternately until 966 is firmly clamped in a level position. Leveling screws (5) and wedges (12) are not used.

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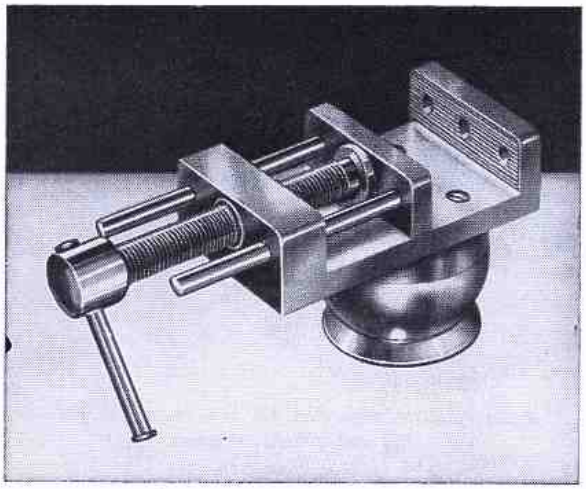
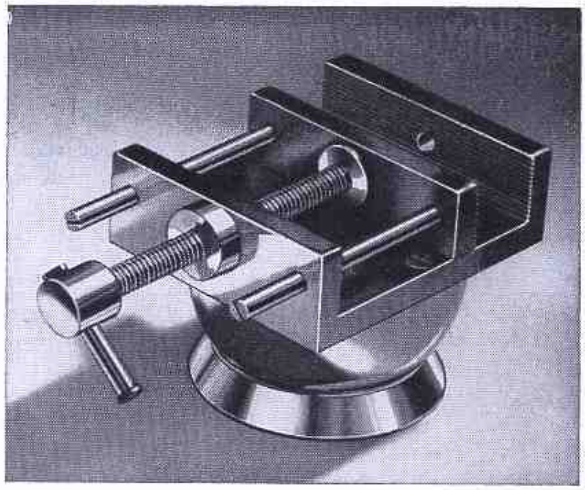
AO MICROTOME ACCESSORIES



No. 828 Johns Hopkins Object Clamp for No. 815, No. 820 and No. 821 Microtomes.



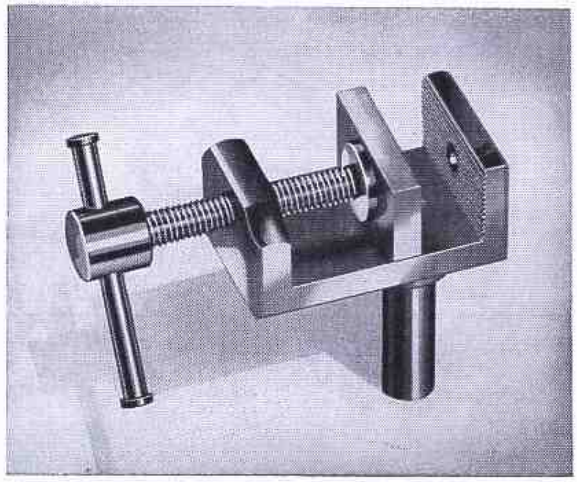
No. 863 Johns Hopkins Object Clamp for No. 860 Microtome.

AO Spencer Object Clamps

Ball and Flange Type Object Clamps are seated in spherical bearings, and when clamped by the three adjusting screws, are rigid. Heavy, almost indestructible, they orient the object to any desired position.

The large Johns Hopkins Object Clamps Nos. 828 and 863 will accommodate unusually large mounted specimens. The No. 828, 1¾″ wide, ⅝″ deep, is used with rotary microtome Models Nos. 815, 820 and 821. Blocks up to 1⅞″ can be handled. The No. 863 Johns Hopkins Clamp for No. 860 Sliding Microtome is 2¼″ wide, ⅝″ deep and will hold 2″ objects.

The No. 885 Object Clamp supplied as standard equipment with the No. 900 Microtome holds mounted specimens up to 1⅛″.



No. 885 Object Clamp for No. 880 and No. 900 Microtomes.

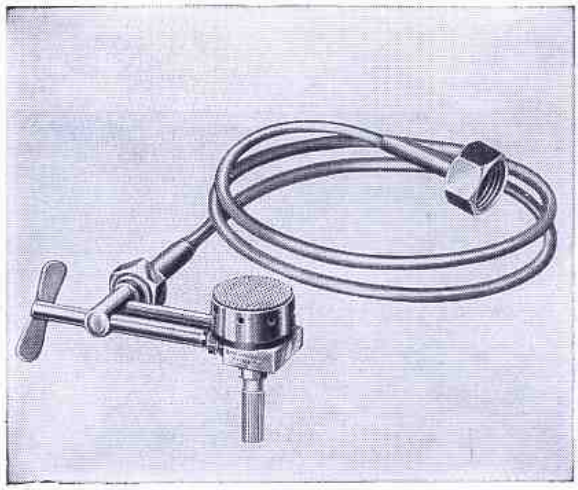
Cat. No.	DESCRIPTION	Price
828	Johns Hopkins Large Object Clamp as described for Nos. 815, 820 and 821 Microtomes.	$69.00
863	Johns Hopkins Large Object Clamp as described for No. 860 Microtomes.	86.00
825	Standard Replacement Object Clamp for Nos. 815, 820 and 821 Microtomes.	36.00
885	Object Clamp, shank type, 1⅛″ capacity for No. 880 and No. 900 Microtomes.	24.00
860-859	Standard Replacement Object Clamp for No. 860 Microtomes.	53.00

AO Spencer Freezing Attachment for CO_2

The AO Spencer Freezing Attachment No. 930 consists essentially of an object chamber with a control valve for CO_2 and of a flexible copper tube for attachment to the CO_2 cylinder. An insulating ring below the object chamber prevents the conduction of heat to the specimen from the rest of the apparatus, thus saving time and gas.

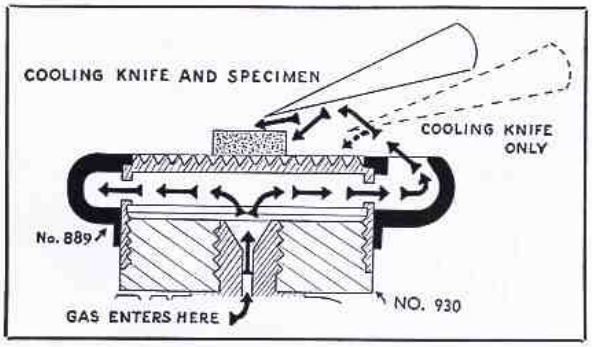
The chamber, 1-3/16″ in diameter is provided with a rod which, like the standard object disc, fits into the socket or clamp of the microtome.

Cat. No.	DESCRIPTION	Price
930	AO Spencer Freezing Attachment complete as described for No. 860, 880, 888 Microtome.	$80.00



Freezing Attachment No. 930 as used on Nos. 860, 888 and 900 Microtomes.

Knife Cooling Deflector



Knife Cooling Deflector No. 889.

The knife cooling deflector is mounted below the specimen holder of the No. 930 Freezing Attachment and directs exhaust gas against the under surface of the knife, rather than in all directions around the head, thus cooling the knife simultaneously with the specimen.

The deflector serves a dual purpose since some of the gas, after striking the knife, strikes the upper surface of the specimen. This results in quick, uniform freezing of the specimen and lessens the distortion of cells.

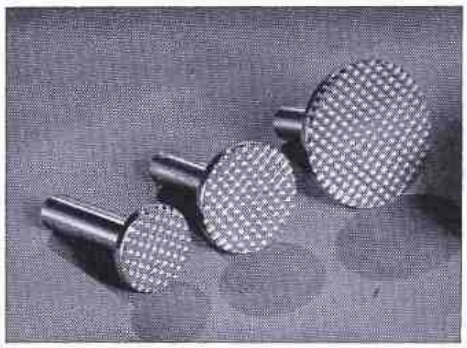
The amount of gas deflected on the tissue may be regulated by moving the knife nearer to or farther from the exhaust slot.

Cat. No.	DESCRIPTION	Price
889	Knife Cooling Deflector	$19.00

Other Microtome Accessories

Four object discs are available to accommodate paraffin embedded specimens. They fit securely and firmly in the microtome and are grooved to give more surface area to hold the paraffin embedded specimen.

Cat. No.	DESCRIPTION	Price
813	⅞″ diameter Object Disc	$4.50
812	1⅛″ diameter Object Disc	4.50
811	1½″ diameter Object Disc	5.00
880-501	1⅛″ diameter Object Disc for No. 880 and No. 888 Microtome.	4.50
969	Microtome Oil (4 oz. can) for Models 815, 820, 821, 860, 900	1.10



Object Discs Nos. 813, 812, 811.

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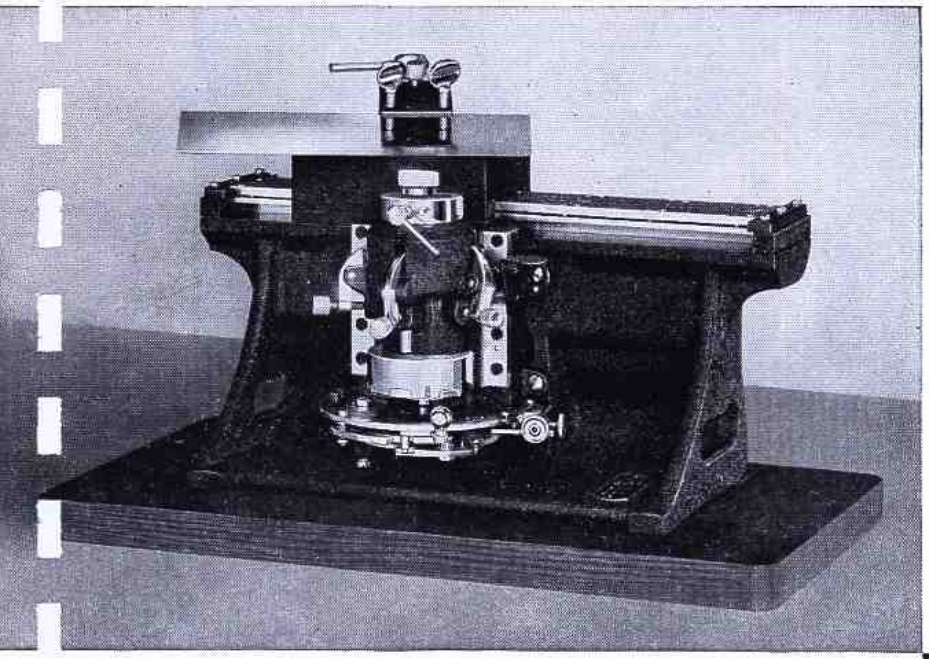
AO PRECISION SLIDING MICROTOME

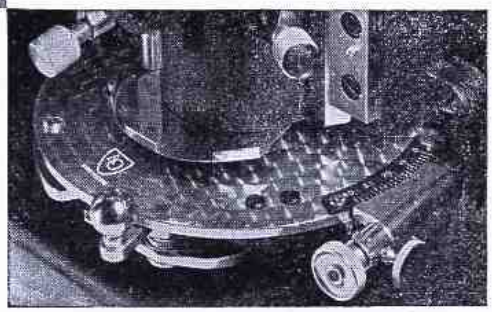
No. 860



No. 860 Precision Sliding Microtome.

FEATURES

- ***Uniform sectioning of large or unusually tough specimens***
- ***Feeds in increments of 2 microns***
- ***Adjustable knife holder***
- ***Ball and flange type specimen clamp***
- ***Automatic or manual feed***



Above: The feed mechanism may be set to cut sections automatically, or by hand, from 2 to 40 microns thick.

This heavy duty AO Spencer Sliding Microtome is the most useful and versatile type of microtome for a busy hospital or research laboratory, as it is capable of many assignments. In addition to the usual paraffin or celloidin embedded specimens, unusually large and tough objects, such as properly prepared samples of bone, wood or soft metal may be sectioned. Frozen sections can be cut rapidly and accurately with the addition of No. 930 Freezing Attachment.

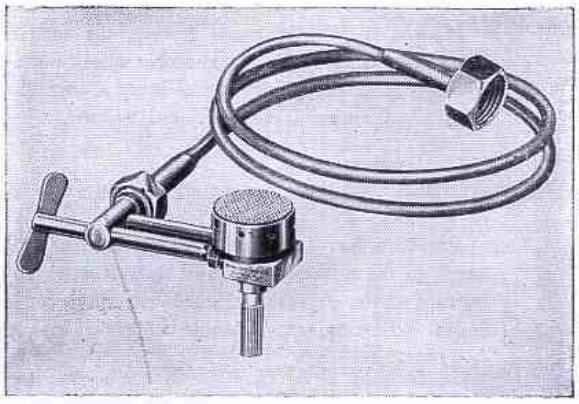
AO Sliding Microtomes consist of a massive body with a horizontal sliding track for the knife block, and of a feed mechanism which moves on vertical slideways. Successful sectioning depends largely on the precision of these two slideways.

Knife Slide

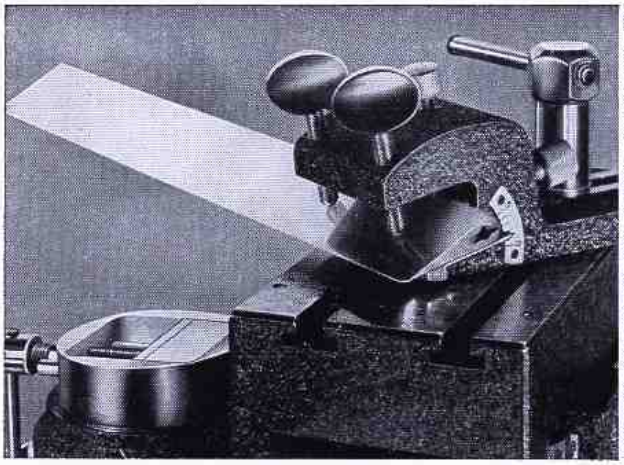
The knife block, 3½″ wide and 6″ long, to which the knife is clamped, is held in oil contact with the 16″ long sliding track. Carefully fitted opposing slide bearings provide smooth and accurate movement.

Feed Mechanism

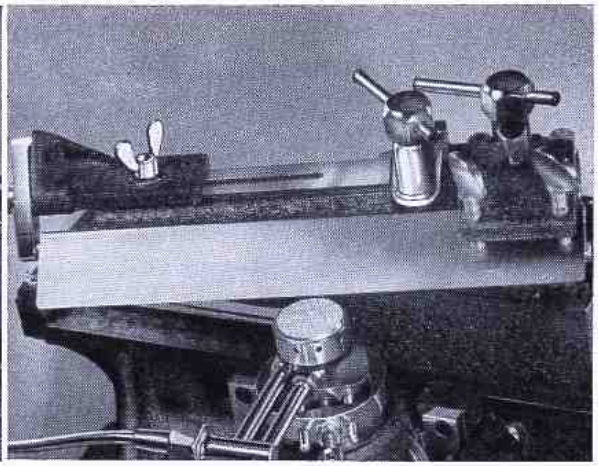
As the knife block is moved, it actuates a trip lever located at the back of the microtome. On the return knife stroke, this trip lever engages a ratchet wheel, which in turn advances the feed screw and object block. This assures a uniform automatic feed for precise



Freezing Attachment No. 930 as used on No. 860.



No. 861 Standard Knife Holder.



No. 862 Adjustable Knife Holder

sectioning. Removal of a small lever block adapts the instrument to manual control.

Total excursion of the feed is 42 mm, the specimen moving in units of 2 microns up to a maximum thickness of 40 microns. An indicator determines the specimen thickness, and a crank at the rear of the microtome is geared to the large feed screw to provide a rapid means of moving the object up to or away from the cutting position. Excess alcohol or water drains into a removable drip pan.

Object Clamp

Three adjusting screws orient the specimen to any desired angle. By loosening any one of the screws, the entire ball and flange type object clamp may be rotated on its axis. An object disc 1½″ in diameter is supplied.

Feed Screw

Housed in a rigid metal casting, the feed screw, ½″ diameter is turned by a large ratchet wheel. Since this wheel has 250 teeth, each tooth representing a feed of 2 microns, feed advancement is accurate and unvaried.

Knife Holder

Provision has been made for setting the knife at any angle to the direction of travel as well as to any desirable cutting angle. A scale indicates the angle of tilt of the knife. Adjusting screws permit the use of knives of different widths. No. 862 Adjustable Knife Holder, available at extra cost, is recommended for cutting unusually large specimens since it supports the knife at both ends.

Knife

AO Spencer No. 950 Knife, 250 mm long and of the highest quality steel is supplied complete with No. 963 Back and No. 957 Handle.

Finish and Cabinet

The overall finish of the No. 860 is black wrinkle enamel with the smaller parts chromium plated. It is mounted permanently on a heavy wood base and shipped in a suitable wood cabinet.

Size and Weight

Length 17½″ Height 11½″
Width 11″ Weight 83 lbs.

Catalog No.	DESCRIPTION	Price
860	AO Spencer Precision Sliding Microtome with No. 861 Knife Holder, No. 950 Knife, No. 963 Back, No. 957 Handle, one Object Disc 1½″ diameter, and No. 969 Oil Can.	$2094.00
930	Freezing Attachment for No. 860	80.00
860-862	Standard Knife Holder (supersedes 861)	81.00
862	Adjustable Knife Holder	156.00
860-859	Standard Replacement Object Clamp	53.00

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Feed Mechanism

Knife action is controlled by a large handle at the top of the instrument. With each stroke of this handle the feed mechanism, consisting of a ratchet wheel keyed to a vertical feed screw, automatically advances the specimen. The feed screw, although in continuous contact with the cylinder holding the object block, is completely independent of the mechanism controlling vertical movement. This exclusive AO feature protects the mechanism from wear and assures a uniform advance of specimen.

Graduated in 5 micron intervals, the indicator may be set to feed specimens from 5 to 50 microns thick, or the feed may be disengaged by setting at zero. A crank at the bottom of the instrument provides a rapid means of moving the object up to or away from the cutting position.

Freezer or Object Holder

For cutting paraffin or celloidin specimens a standard 1⅛" object disc No. 880-864 is provided on the No. 880 Microtome. A large drip pan, removable for cleaning, is mounted beneath the object holder. The carbon dioxide freezing chamber and copper connecting tube, supplied as standard equipment on the No. 888 Microtome, may be removed easily, and is interchangeable with the object disc.

Knife Holder

Supported by two swinging arms, the knife holder may be adjusted to accommodate knives of various thickness, and knives may be tilted to desired cutting angle. Because a slicing cut is taken, more of the cutting edge of the knife is utilized.

Catalog No.	DESCRIPTION	Price
888	AO Spencer Automatic Clinical Microtome with No. 940 Knife, No. 960 Back and No. 955 Handle, one 1⅛" diameter Object Disc, and No. 930 Freezing Attachment for CO_2.	$593.50
880	AO Spencer Automatic Clinical Microtome with No. 940 Knife, No. 960 Back and No. 955 Handle, and with one object disc, 1⅛" diameter.	518.00
880-501	Object Disc, 1⅛" diameter.	4.50
885	Object clamp for paraffin or celloidin embedded specimens mounted on wood or fiber blocks.	24.00
930	AO Spencer Freezing Attachment complete as described for No. 888 Microtome.	80.00

Table Clamp

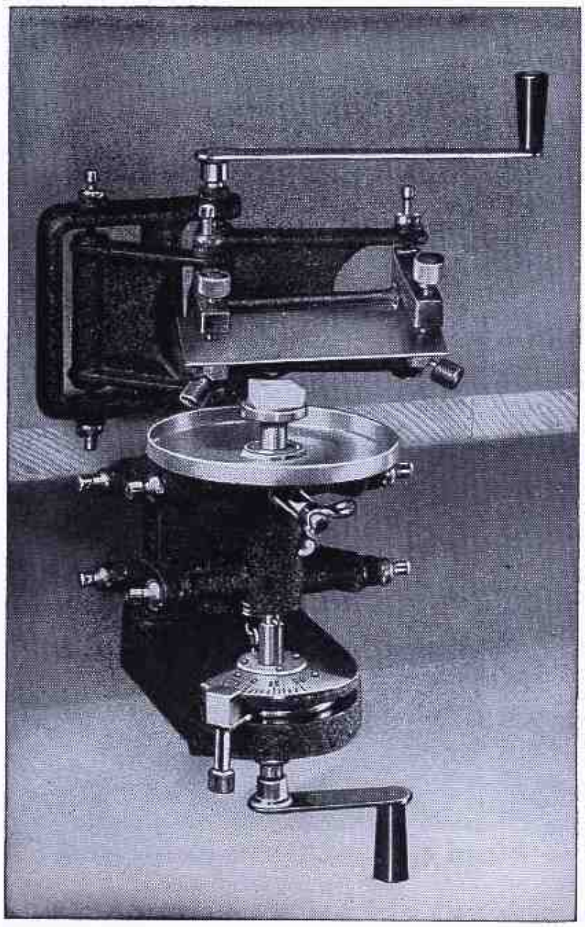
The main supporting frame has a heavy clamp at the back by which the microtome can be fastened securely to the laboratory table.

Knife

AO Spencer No. 940 knife, 110 mm long, and of the highest quality steel is supplied complete with No. 960 Back and No. 955 Handle for sharpening.

Finish

Black wrinkle enamel and chromium plated parts provide a durable alcohol-proof finish.



No. 880 Automatic Clinical Microtome is same as No. 888, but does not have freezing attachment.

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AO TABLE MICROTOME

No. 900

FEATURES

- ***Feed mechanism is entirely independent of vertical movement of specimen***
- ***Feeds sections in increments of 5 microns***
- ***Sturdy table clamp***
- ***Moderately priced***

Where a hand-operated feed is sufficient and speed is not essential, the low cost AO No. 900 Table Microtome is satisfactory. It is widely used in schools for demonstrating principles of microtomy, for section cutting in biology, and is adequate for sectioning various plant materials. Using a straight-edge razor or microtome knife with handle attached, sections may be cut from 5 to 500 microns. A freezing attachment may be added if desired.

Feed Mechanism

A parallelogram structure, hinged at each corner, supports a cylinder. The object holder is placed in the top of the cylinder while the solid bottom of the cylinder rests on a micrometer type feed screw. This feed screw, entirely independent of the mechanism above, is controlled at the lower end by a knob or disc graduated in 5 micron intervals.

Knife Slide

Two horizontal glass plates 3⅞″ long by 7/16″ wide provide travelling ways upon which the knife slides smoothly for a uniform cut. It is possible to make either a straight or slicing cut depending on the type and hardness of the specimen.

Table Clamp

The main frame has a heavy clamp at the back by which the microtome can be fastened securely to the laboratory table.

Knife

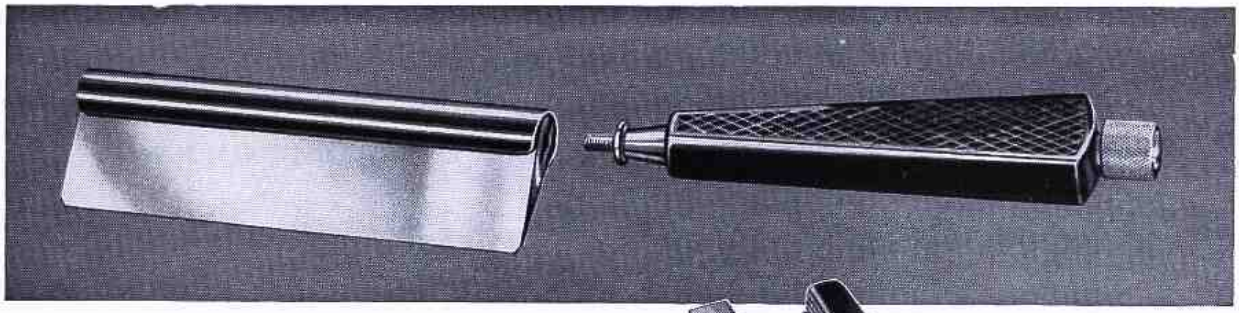
The No. 900 Table Microtome is supplied without a knife. A 110 mm Knife, AO No. 940, with No. 955 Handle and No. 960 Back is recommended. A straight edge razor may also be used.

Standard Object Clamp No. 885

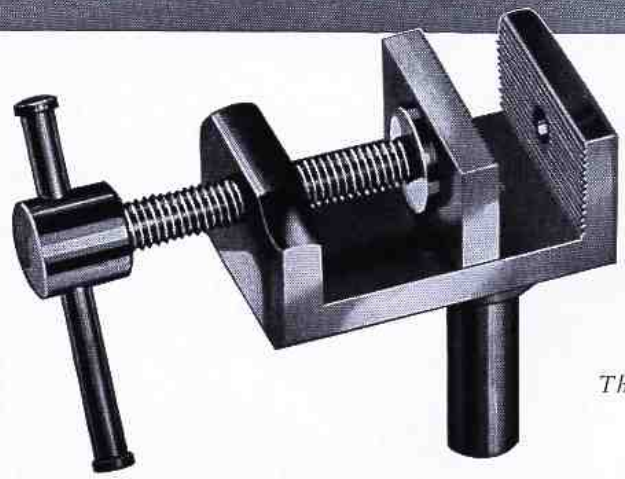
One object clamp is supplied as standard equipment with No. 900 Microtome. Specimens up to 1⅛" mounted on fiber or wood blocks are firmly held during the cutting process.

Microtome Feed

Each graduation on the disc indicates a feed advancement of 5 microns, and one complete revolution of this disc would be a feed advancement of 500 microns.



110 mm Knife with Back and Handle.



The No. 885 Microtome Object Clamp.

Catalog No.	DESCRIPTION	Price
900	AO Table Microtome with No. 885 Object Clamp, without knife.	$174.00
901	AO Table Microtome, with No. 885 Object Clamp, No. 940 Knife, No. 960 Back, and No. 955 Handle.	235.50
940	AO 110 mm Knife.	43.00
960	Back for No. 940 Knife.	5.50
955	Handle for No. 940 Knife.	13.00
885	Object Clamp.	24.00

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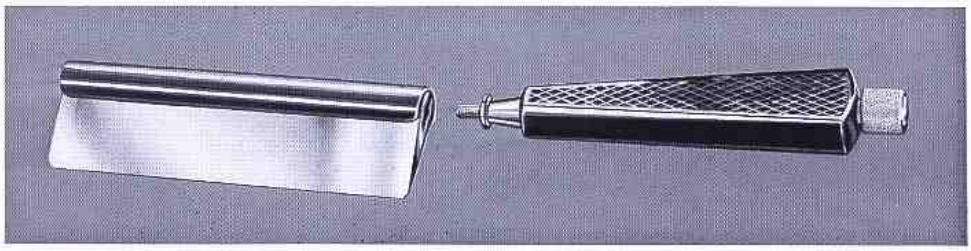
AO MICROTOME KNIVES



No. 942 Knife, No. 961 Back and No. 955 Handle.

A microtome is only as good as the cutting edge of its knife, therefore, the knife must be of a good grade of steel of proper hardness. AO Spencer knives reflect sixty years of continuous research and experimentation. Today special processing methods and continuous control throughout manufacture assure uniform unequalled quality.

Highest quality, fine grained tool steel, the analysis of which has been based on extensive tests, is used for manufacture of our microtome knives. The steel is heat treated and tested for hardness and micro structure to yield the best combination of hardness and toughness for the production of a keen and durable cutting edge. After heat treatment the knife is then finish ground and honed to provide sharper cutting edges and greater corrosion resistance. Sharp true edges are maintained even after prolonged use — a characteristic especially valuable in ultra-thin sectioning for the electron microscope.

It is recommended that an individually fitted knife back for use in honing, be ordered with each knife if required for your knife sharpening equipment. Each AO Spencer back is made of monel metal, which, unlike many other metals, slides on the knife easily and does not scratch the knife bevels. Knife handles are Bakelite and of such dimensions to make for ease in honing. Each knife is furnished in a case which has compartments for the back and handle.

AO Spencer Microtome Knives

Cat. No.	Length in mm	For use with Microtome					Unit Price Quant. 1-4	Unit Price Quant. 5 or more
940	110	810	880	888	900	901	$ 43.00	$ 38.70
942	120	815	820	821	900	901	46.00	41.40
945	185		820				81.00	72.90
950	250	860					122.00	109.80

It is recommended that an individually fitted knife back be ordered with each knife (See chart below.)

AO Spencer Microtome Knife Backs

Cat. No.	Length in mm	For use with knife	Unit Price Quant. 1-4	Unit Price Quant. 5 or more
960	110	940	$5.50	$4.95
961	120	942	5.50	4.95
962	185	945	5.50	4.95
963	250	950	7.00	6.30

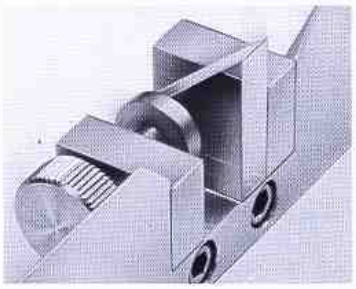
AO Spencer Microtome Knife Handles

Cat. No.	For Use with Knife			Unit Price Quant. 1-4	Unit Price Quant. 5 or more
955	940	942	945	$13.00	$11.70
957	950			20.00	18.00

RECONDITIONING MICROTOME KNIVES

Knives to be reconditioned should be sent to the American Optical Corporation, Scientific Instrument Division, Buffalo, New York 14215. Mark to the attention of our Technical Service Department.

KNIFE HOLDERS



No. 823 Glass Knife Holder, a new knife holder designed to accommodate glass knives, is now available for use with the "820" Microtome equipped with thin sectioning adapter No. 829.

No. 966 Razor Blade Holder, used in teaching microtomy and for cutting certain hard materials which would rapidly dull a knife edge, the No. 966 Razor Blade Holder is an efficient and economical accessory. Of stainless steel, which is resistant to laboratory reagents and corrosion, this holder was designed for use with No. 815 and No. 820 Rotary Microtomes. Razor blades are easily inserted and removed. A wedge, pulled into place by a screw, exerts even pressure throughout the length of the blade. Rigidity equal to that of a standard microtome knife is obtained. Each holder is supplied in a leatherette case.

Catalog No.	Description	Price
823	Glass Knife Holder	$61.00
966	Razor Blade Holder	52.00
967	20 Single Edge Blades for 966	Net 3.00

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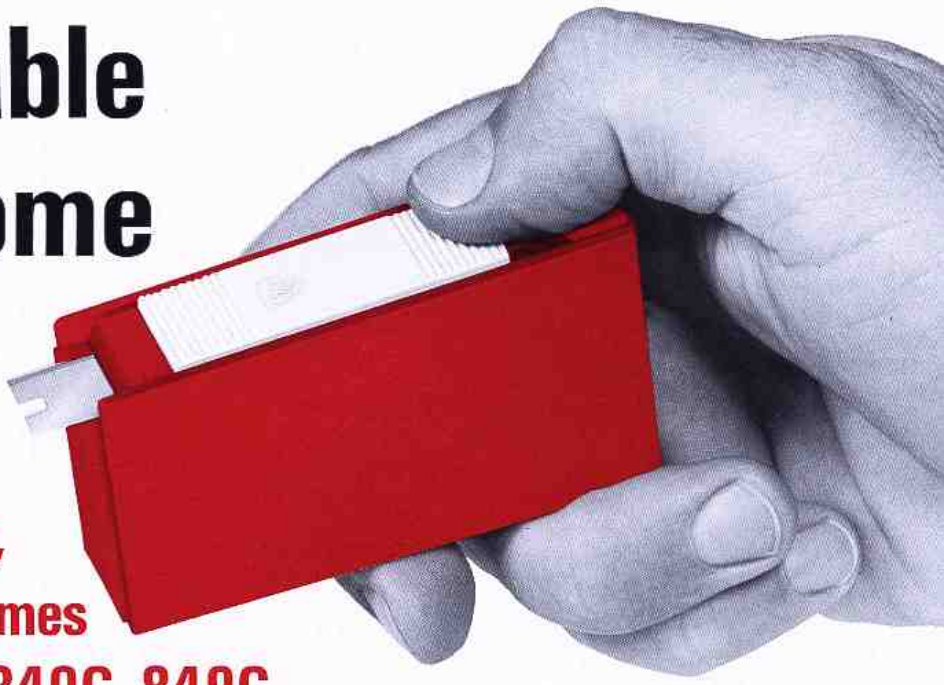
NO. 817

Disposable Microtome Blades,



with Dispenser, for AO Microtomes Nos. 815, 820, 840C, 849C

- ☐ Exceptional convenience
- ☐ Low Cost
- ☐ Ideal for training in basic techniques
- ☐ Invaluable spare equipment

For those special sectioning problems in the microtomy lab, the advantage of disposable blades offers convenient accessibility to a fresh, sharp cutting edge at all times.

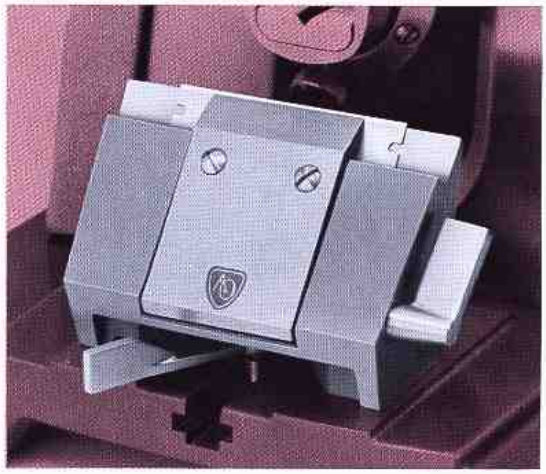
Use of disposable blades for sectioning tissue with unknown inclusions eliminates the risk of damaging valuable knives. Usefulness of this cutting method is most important to the small lab with limited equipment.

Teaching of basic microtomy techniques is made easier, less hazardous – since expensive, standard knives need not be used. Ideal for emergency sectioning with the Cryo-Cut Microtome, the small mass of the blade assures immediate temperature ambience.

Three Blade Holders are available which fit all models of the AO 815 and 820 Rotary Microtomes, and the 840C Cryo-Cut. Each is readily positioned and securely locked in its respective microtome.

The 75mm disposable blades are instantly slipped out of Dispenser and quickly inserted and locked into position – without disturbing holder alignment. Proper blade angle is always maintained.

Lightweight blades are of heat treated, hardened tool steel. Light coating of protective oil assures long shelf life.



Cat. No.		Price
817	Disposable Blades in Dispenser (100 per Pkg.)	$ 53.00
814	Blade Holder for No. 817 for use with all model 815 Microtomes and for model 820 Microtomes having serial numbers **under** 38,000.	149.00
824	Blade Holder for No. 817 for use with model 820 Microtomes having serial numbers **over** 38,000.	149.00
841	Blade Holder for No. 817, with anti-roll guide, for use with model 840C, 849C Cryo-Cut Microtome.	171.00

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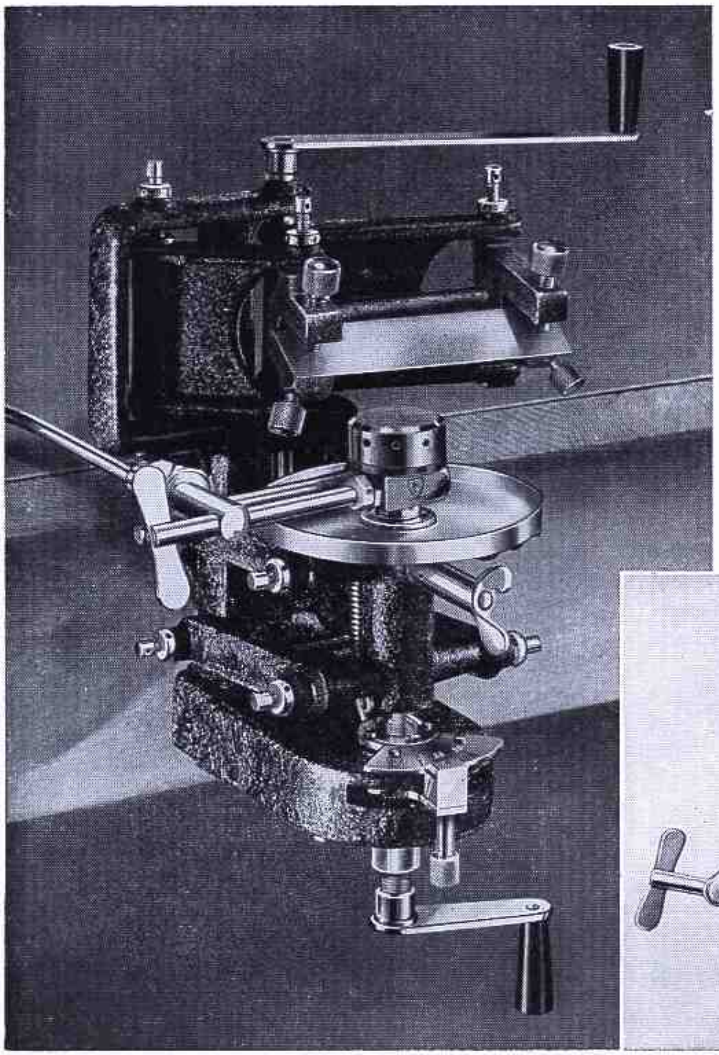
AO AUTOMATIC CLINICAL MICROTOME

No. 880

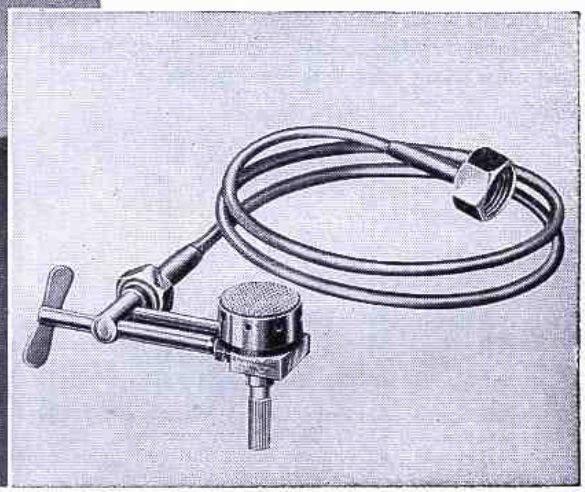
AND No. 888 FREEZING MICROTOME



No. 888 Automatic Clinical Microtome is equipped with freezing attachment.

FEATURES

- ***Automatic feed***
- ***Rapid sectioning of frozen or embedded tissue***
- ***Feed movement independent of vertical movement of specimen***
- ***Moderately priced***
- ***Adjustable knife holder***



Freezing Attachment No. 930 as used on No. 888 Microtome.

Designed to fill a definite need in hospitals where speed is important to successful surgery, the No. 888 Microtome makes it possible to section frozen tissues rapidly. The No. 880 and No. 888 Microtomes are identical except No. 880 is not equipped with a freezing unit. Both instruments are used in clinical and research laboratories for sectioning embedded material.