

ULTRAPOL

*The Go-To Precision Polishers
for High-Tech Applications*

Electronic Failure Analysis

De-Processing

Connectors

Endoscopes

QC

Waveguides

Wedge Polishing

SEM

X-Sectioning

Medical

De-Lidding

Microscopy

Laser Rod Repair

Backside Polishing

Pre-FIB

Bare Fibers

CONSUMABLES



In Stock
For You

Fiber Lensing

ULTRA TEC
MANUFACTURING, INC.

QA

SIMS Analysis

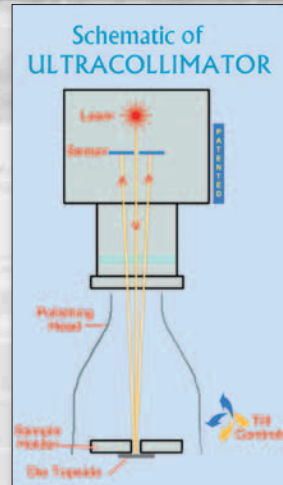
Metallography

ULTRAPOL *advance*

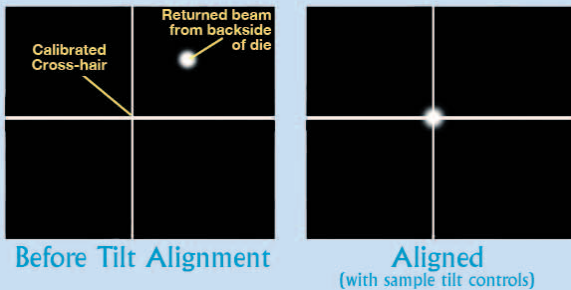
OPTICAL ALIGNMENT

**Faster, more accurate alignment
for better polishing results**

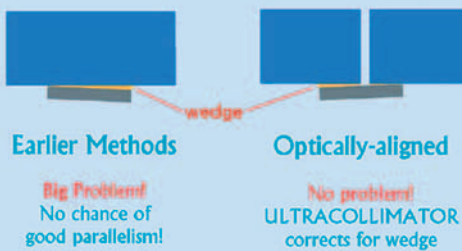
Our patented ULTRACOLLIMATOR technology allows for fast accurate and repeatable parallel alignment of surfaces to the polisher. Since the collimator beam optically aligns directly to the die, there is no guesswork or the need to use mechanical indicators. Alignment is constantly monitored during polishing. Transfer to-and-from the microscope is made fast and accurate. Any small realignments can be made quickly and accurately.



ULTRACOLLIMATOR ALIGNMENT



Variation in wax thickness layer



advance FEATURES

Intuitive design & optimized ergonomics

ULTRAPOL Advance incorporates key improvements in the control of all polishing parameters, sample mounting, sample transfer, and calibration.



Mechanical Alignment for Lower-Spec Applications



Convenient Cleaning with Removable Slurry Tray



Setting Amplitude of Sample Sweep



Fine Adjust of Sample Load



Start-Up Accessory Kit Supplied with System



'Easy Lift' Polishing Head



'Quick Release' Sample Interface



Open or Closed Loop Coolant System



Coarse Adjust of Sample Load

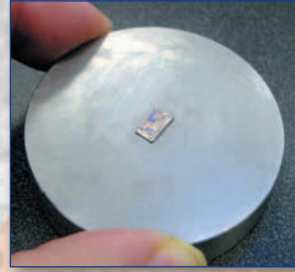


ULTRAPOL Advance offers the 'best of both worlds' for the production of flat and polished surfaces. The benefit of traditional optical 'flat lapping' systems is achieved with an adjustable-amplitude sweep control. The convenient sample handling of 'off the lap' systems is achieved with our ingenious 'quick release' interface, sample loading and alignment functions.

The patented ULTRACOLLIMATOR technology works 'in situ' with the part being polished – providing constant feedback of angular alignment. Our recent move to a 2nd generation LASER-illuminated ULTRACOLLIMATOR module, allows for improved return-beam imaging, and up to 4 times the alignment precision.

advance WORKHOLDERS

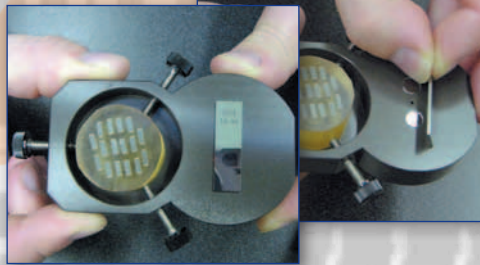
STANDARD MOUNTING PLATES



Optical Alignment Hole

6170.1 Standard Mounting Plate - 1mm Alignment Hole (shown above)
6170.2 Standard Mounting Plate - 2mm Alignment Hole - also available

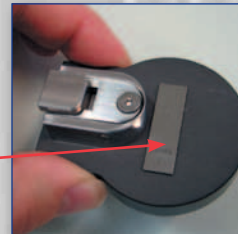
CROSS-SECTION HOLDERS



6124.1 Encapsulated Mount Fixture – Holds 0.5 inch to 1.5 inch diameter mounts



6150.1 Quick Release Vise for holding packages, large dice, waveguides etc.



Optical Flat



6145.1 Single Die Stub Cross-section holder

Order Code	Description
3250.1	ULTRAPOL Advance Polishing System Includes: Base unit with timer, oscillator, speed control (50 to 400rpm), 8" (200mm) Polishing plate, Z-height control with 1μm precision, Mechanical alignment indicator, 2 circle tilt control (+/- 2 degrees) Sample Rotation and sweep controls, Quick release interface mounting system, two sample mounting plates and start-up accessory kit. Sample Load Control – 0 to 3 kg. Solenoid Controlled Coolant System. Slurry Containment Tray.
6183.UL	ULTRACOLLIMATOR LASER ALIGNMENT UPGRADE Includes: Laser module, cross-hair generator, and 6.5 inch lcd monitor, with Video Out (ntsc). Includes optical flat and mounting bracket for ULTRAPOL Advance

SEM & FIB STUB POLISHING HOLDERS



6172.H



6172.F

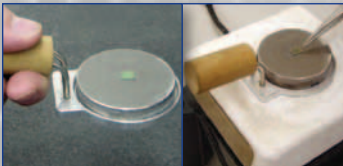


6172.J

Style	Order Code	Stub Only
Hitachi	6172.H	6175.H
JEOL	6172.J	6175.J
FEI	6172.F	6175.F
Philips	6172.P	6175.P
Zeiss	6172.Z	6175.Z

Custom holders are also available.

advance POLISHING ACCESSORIES



6189.1 Hotplate Transfer Device



6178.1 Mounting Stand for SEM Stubs



1503.1 Disc Holding Band

ULTRAPOL

End & Edge Polisher

Cross-section polishing with ultimate pressure control, workholding and angular versatility

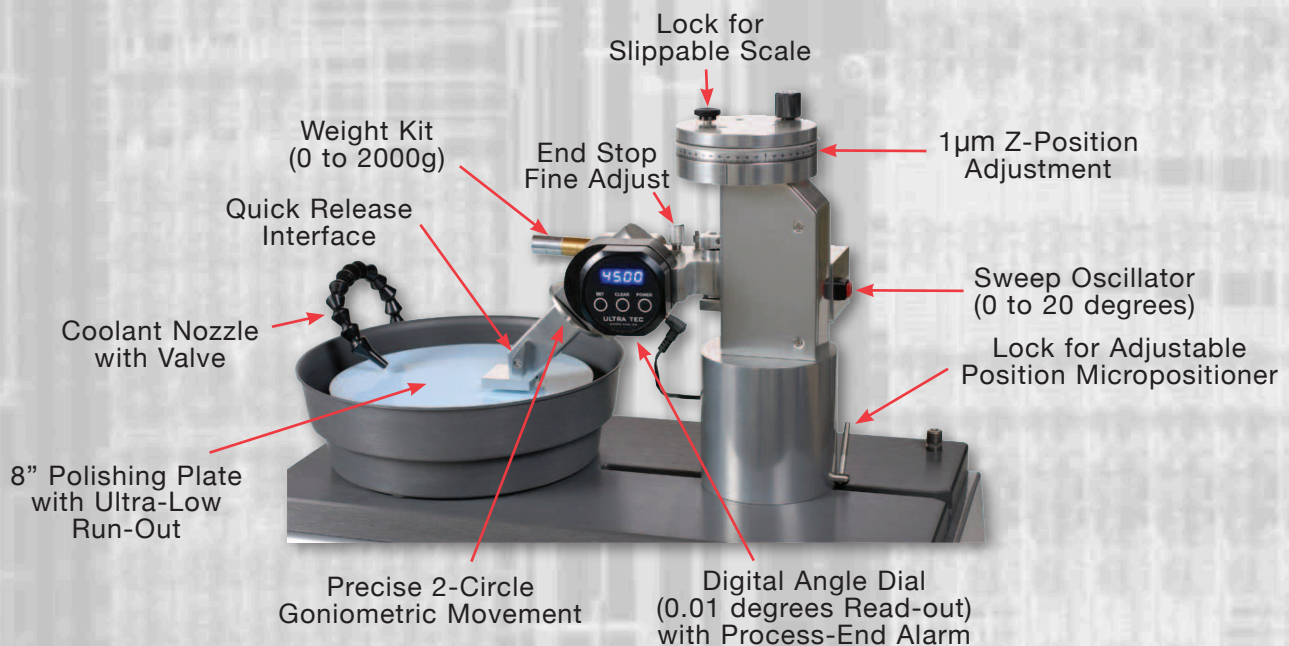
ULTRAPOL End & Edge Polisher offers ultimate versatility for sample load control and producing wedge-angles for cross-sectioning and edge polishing applications. A range of workholders extends the application of the system.

The micropositioner head may be calibrated in two-circles to ensure the correct features and or finish thickness can be polished or revealed for analysis.

ULTRAPOL accepts polishing films, papers, pads and cloths to achieve the finest surfaces on most sample types, materials and chemistries.



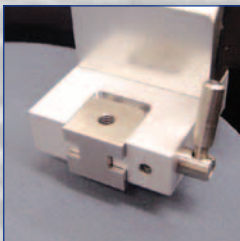
Order Code	Description
6390.1D	ULTRAPOL End & Edge Polishing System - Digital Includes polishing unit with timer, tachometer, solenoid coolant system, speed control and process-end indicator. Micropositioner head includes, advanced angular control, low inertial mass loading system with auxiliary weight kit, oscillation control, 1 micron Z-control and 'Quick Release' workholder mounting system. Digital Angle Dial with 0.01 degree read-out and process-end alarm. Configured for 100-220/240V.
6390.1A	ULTRAPOL End & Edge Polishing System - Analog Specifications as 6390.1D but supplied with 0.1 degree analog angle readout and without process-end alarm.



A Selection of Our 'Quick Release' Workholders



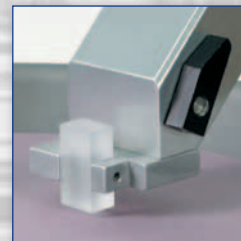
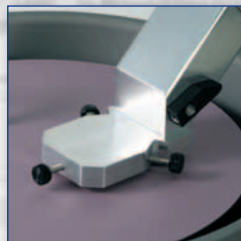
Microscopy Series



4065.1 SEM Stub type
workholder

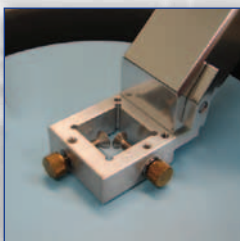


2024.1 Encapsulated
mount workholder

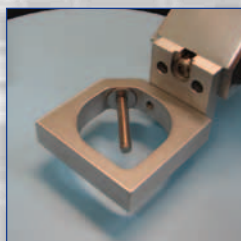


4066.1 TEM/pre-FIB
workholder

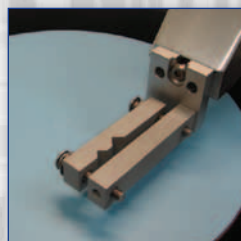
Optics & Medical Series



6080.1 Small
Block Holder



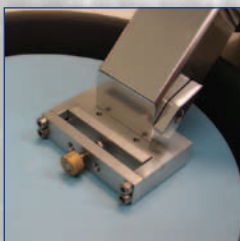
3547.1 Single V-clamp
(16-34mm dia.)



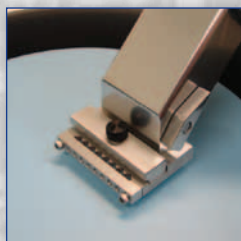
3552.1 Saddle Clamp



3545.X Custom V-Clamp



4079.2 Thin Plate
Holder (up to 50mm
length)



2728.8 Multiple
V-groove Holder

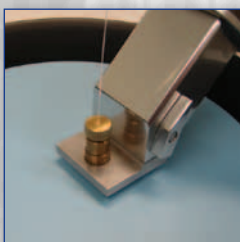


2728.8 Holder mounted
in 2726.1 Setting Stand



2745.1 Bare Fiber Holder
(fibers > 400 μ m)

Fiber-Optics Series



2707.1 Bare Fiber
Holder – 1 position



2707.4 Bare Fiber
Holder – 4 position



2703.1 SMA (905)
Connector Holder



2704.1 ST
Connector Holder

**This is only a small selection of the workholders we offer.
Multiple-position and custom holders are also available.**

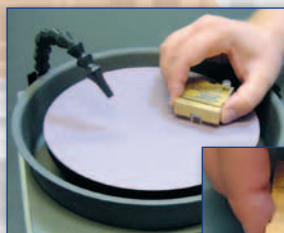
ULTRAPOL Basic Manual Polishing Machine

Manual polishing tools remain important to the lab needing good delayering and/or cross-sectioning results on a very tight budget. ULTRA TEC is proud to be associated with the polishing experts at Accelerated Analysis, and to offer their manual tools for use with our ULTRAPOL Basic polisher.

Order Code	Description
1209.1	ULTRAPOL Basic Polisher – Configured for 100-220/240V operation. 0-500 RPM. Includes 8 inch (200mm) polishing system with speed control and solenoid-controlled coolant system
UPF101	Manual Cross Section Fixture includes 5 aluminum and 5 stainless steel sample mounts
UPF201	Manual Parallel Polish Fixture includes alignment mirror and 3 parallel polish sample mounts.



1106.6
ULTRATOOLKIT
Manual Connector Polisher



UPF101



UPF201

ULTRAPOL Fiber Lensing Machine

ULTRAPOL Fiber Lensing Machine offers the ability to produce accurate end profiles on bare optical fibers. Full angular control is achieved with the integral micropositioner, allowing various sculpted end shapes (shown below) in a wide range of included angles.

Order Code	Description
6380.1A	ULTRAPOL Fiber Lensing Machine - Analog Includes: ULTRAPOL Base unit with 5" o.d lapping plate, Fiber Lensing Micropositioner, with feed-through spindle. Analog Angle Dial with 0.1 degree readout. Produces sculpted ends on optical fibers – examples: cone tips, chisel / screwdriver tips, bevels. Power: 110 V / 60Hz and 220 to 240V, 50 Hz
6380.1D	ULTRAPOL Fiber Lensing Machine - Digital Specification as 6380.1A but supplied with digital angle dial with 0.01 degree readout and process-end alarm.



End Polishing Converter



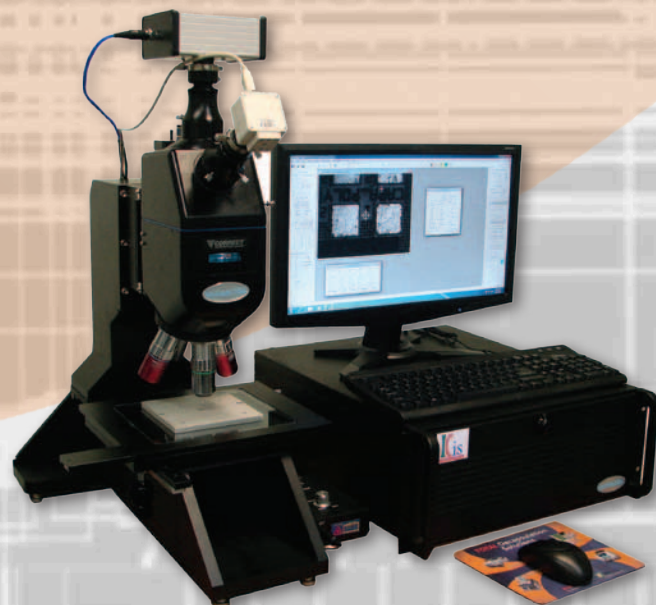
Large Included Angle



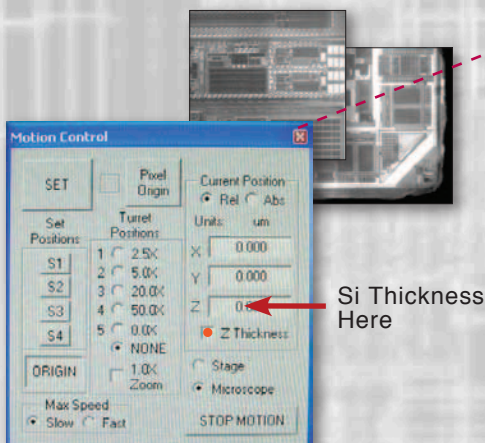
Small Included Angle

ICis Materials Inspection System

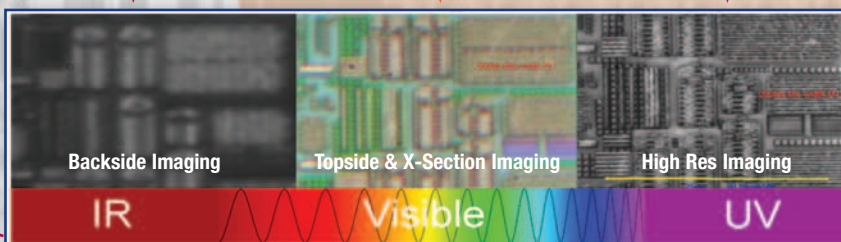
ICis is a modular microscope offering up to 3 standard imaging modes, often required by professionals in electronics and related industries. The system is designed to be a primary tool for the engineer or technician working at a nearby polishing station. ICis allows for fast substrate thickness measurements of backside thinned and polished samples; it is also invaluable for fast imaging and archiving of samples being parallel polished or de-processed.



Order Code	Description
6425.1-IR	ICis NIR Microscope MICROSCOPE with optimized tube, Motorized 'Z Direction' Focus Block Bench-top Stand, X-Y Table, large enough to accept standard ASAP-1 sample holder plates, NIR optimized un-cooled Inspection Camera, Desktop computer, running Windows 7, mouse, keyboard, 19" min monitor, ICis Custom Software that provides image capture, optimization, annotation, silicon thickness measurement, and archival functions, Power Cord, Sample holder plate
6426.UV	UV Imaging UV Illumination Pod with filter and UV Source controller – Upgrade
6427.VIS	Visible Light Camera Color Mega-pixel Camera, USB, with software – Upgrade
6428.XY	Motorized X-Y Table Motorized X-Y Table for Main ICis unit, with nano-step controller – allows mouse control of X, Y and Z directions - Upgrade
6405.1	5 x Objective Lens Visible / NIR (WD=40.0mm / NA=0.15)
6465.1	50x Objective lens Visible /NIR (WD = 18.3mm / NA = 0.45)
6410.IR	100x Objective lens, plan, optimized for NIR
6462.1	2.5X Objective Lens for Visible / UV
6410.1	100x Objective lens plan for Visible / UV



**Measures Remaining
Silicon Thickness**



Smaller Wavelength = Higher Resolution

Polishing Supplies

LAPPING & POLISHING SURFACES – 200 mm (8 inch) diameter

Order Code	Description	Application
2239.1	Aluminum Lapping Plate	Standard anodized flat lapping plate, used with films papers and pads
3206.8	Poly-faced Plate	Final polishing of many materials, with colloidal suspensions
3250.1	Poly-Pad	Replacement Poly facing – adhesive-backed
2210.1	Fiber Pad	Black, polyurethane-based low-nap cloth for delayering IC's and final polishing optical and fiber-optic components – adhesive-backed
2211.1	Red Pad	Red, nylon-based cloth, for achieving final surfaces for SEM & TEM Analysis – adhesive-backed
2390.1	Resilient Surface Pad	Rubber-based pad, with durometer control to achieve a PC polish on fiber-optic connectors. It is placed onto 2239.1 Disc, and then covered with a lapping film.
2272.1	Fixed Diamond Plate – Aggressive Grind	Sintered Diamond Lap 42 micron, 360 mesh – for fast removal of materials such as glass
2273.1	Fixed Diamond Plate – Medium Grind	15 micron, 1200 mesh – precursor to finishing with films and cloths



Polishing Media

Order Code	Description	Micron Size (Approx.)	Unit Size
2394.1	White Non-Crystallizing Colloidal Silica	0.04	1 gallon (3.8l)
2394.2	White Non-Crystallizing Colloidal Silica	0.04	32 oz. (950ml)
2397.1	Blue Non-Crystallizing Colloidal Silica – aggressive removal	0.05	1 gallon (3.8l)
2397.2	Blue Non-Crystallizing Colloidal Silica – aggressive removal	0.05	32 oz. (950ml)
2395.1	Ultrafine Non-Crystallizing Colloidal Silica	0.02	1 gallon (3.8l)
2396.1	Cutting & Lapping Oil	na	1 gallon (3.8l)
2392.1	Aquigrind- Water Soluble Cutting & Lapping Oil	na	1 gallon (3.8l)

Diamond Lapping Films ULTRAFILM 8" (200mm) Diameter

Micron Size	Adhesive-Back Order Code	Plain-Back Order Code	Pack Quantity
0.1	M.8230.1	M8430.1	5
0.5	M.8231.1	M8431.1	5
1	M.8232.1	M8432.1	5
3	M.8233.1	M8433.1	5
6	M.8237.1	M8437.1	5
9	M.8235.1	M8435.1	5
15	M.8236.1	M8436.1	5
30	M.8238.1	M8438.1	5

Cements, Encapsulants & Cleaning Fluid

Order Code	Description	Size
2387.1	Crystalwax Cement – Standard mounting wax for wafer and die applications. Soluble in acetone	70ml stick
2305.1	Loctite 460™ is a fast curing, ultra-high bond adhesive for semi-permanent mounting of samples for TEM / Pre-FIB thinning and similar applications. Soluble in acetone	0.7 oz. (22ml) bottle
2307.1	JET SET Cold Mounting Epoxy Kit (2 part)	Makes up to 1l
2311.1	Micro-Soap, for micro-organic critical cleaning of samples. Diluted in warm water	32 oz. (950ml) bottle

ULTRA TEC
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