

ENGINEERED SYSTEMS

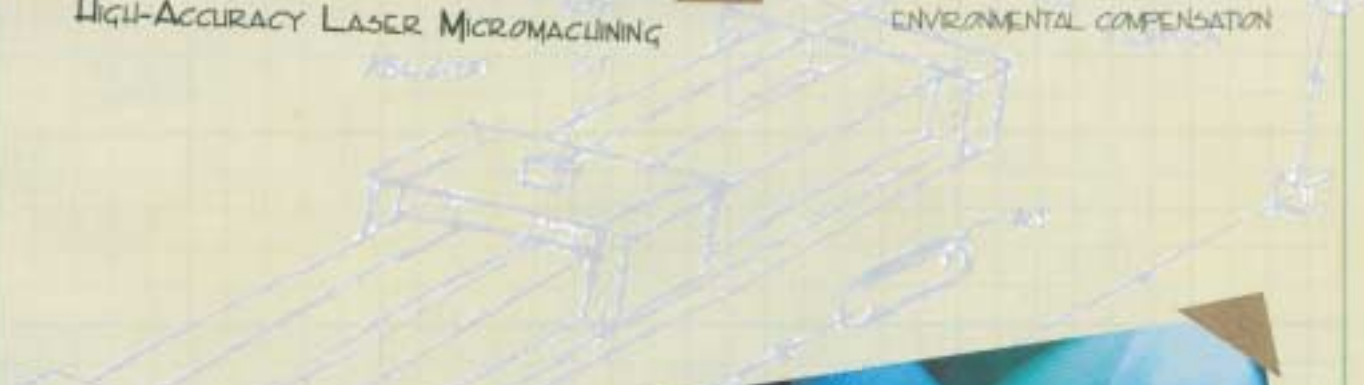


High-Accuracy Laser Micromachining

→ LASER INTERFEROMETER
FEEDBACK

→ 12 METER LINEAR-MOTOR-
DRIVEN AIR BEARING WITH 03
NANOMETER RESOLUTION

→ ADVANCED PCI-BUS-BASED
CONTROL WITH HIGH-SPEED
RESOLUTION MULTIPLIERS &
ENVIRONMENTAL COMPENSATION



→ OPEN FRAME AIR BEARING

→ SIMULTANEOUS BACKSIDE/
FRONTSIDE INSPECTION WITH
ILLUMINATION

→ 7 AXES OF COORDINATED
CONTROL IN A COMPACT
STAND-ALONE PACKAGE



PATTERNED MEDIA INSPECTION



WORLD HEADQUARTERS: Aerotech, Inc., 191 Zeta Drive, Pittsburgh, PA 15238, USA 412-963-7470 Fax: 412-963-7489 www.aerotechinc.com
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Aerotech GmbH, Süd-West-Park 96, D-90448 Nürnberg, Germany 49-911-8679376 Fax: 49-911-86793720 www.aerotech-europe.com



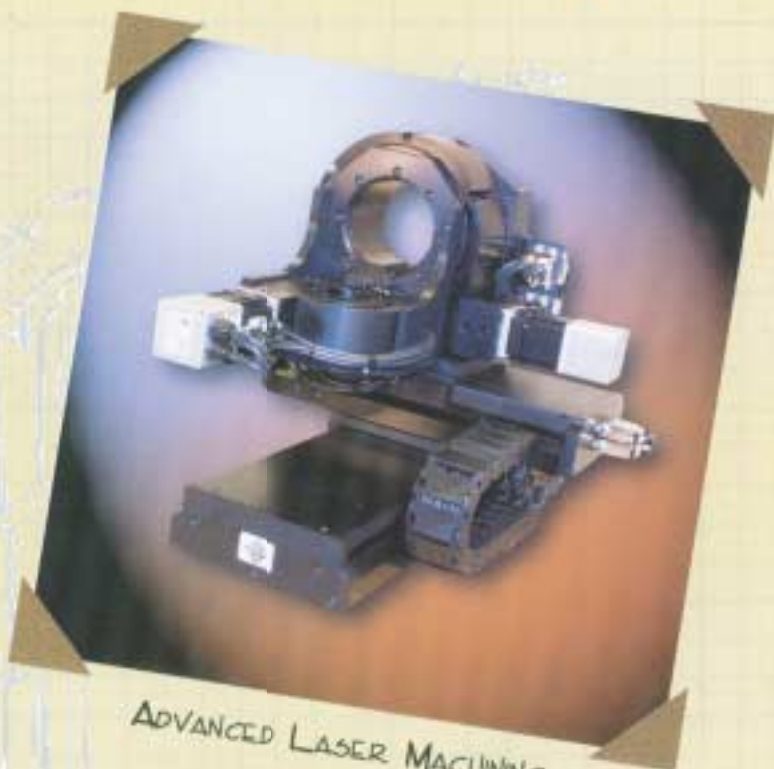
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ENGINEERED SYSTEMS

- LARGE APERTURE ROTARY STAGES
- HIGH PRECISION LINEAR MOTOR DRIVEN X-Y WITH FULL DUST & DEBRIS SEALS & HARDCOVER
- BRUSHLESS MOTORS AND INTELLIGENT CABLE MANAGEMENT PROVIDE EXTENSIVE MAINTENANCE FREE OPERATION



ADVANCED LASER MACHINING

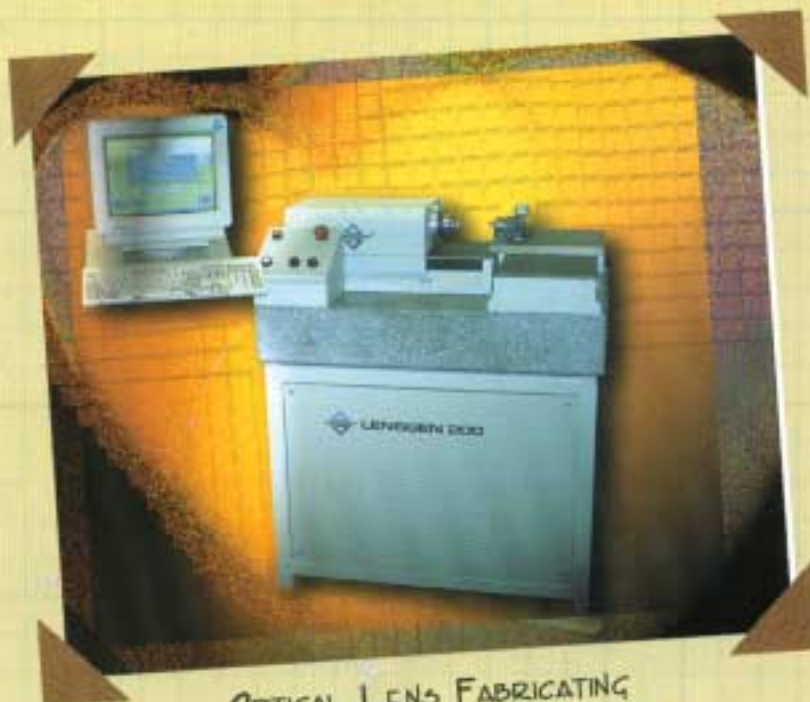


4-AXIS COORDINATE MEASURING MACHINE

- 3 ARC-SEC SPATIAL REPEATABILITY OVER ENTIRE WORKING ENVELOPE
- 4-AXIS XYZΘ HIGH PAYLOAD AIR BEARINGS WITH UNSURPASSED MOMENT STIFFNESS
- COUNTERBALANCED Z-AXIS LINEAR MOTOR AIR BEARING
- MULTI-AXIS CONTROL AND OPERATOR STATION

ENGINEERED SYSTEMS

- LINEAR MOTOR DRIVEN STAGES
- AIR BEARING SPINDLE
- 4 NANOMETER RESOLUTION
- ADVANCED INDEX 500 CONTROL WITH CUSTOM INTERFACE SOFTWARE, PACKAGED AMPLIFIERS, & OPERATOR CONSOLE



OPTICAL LENS FABRICATING

- DUAL-CARRIAGE LINEAR MOTOR STAGE CROSS AXIS INCREASES THROUGHPUT & REDUCES SYSTEM COST
- HIGH ACCURACY, HIGH VELOCITY LINEAR MOTOR STAGES REQUIRE MINIMAL MAINTENANCE AND PROVIDE EXTREMELY HIGH PERFORMANCE
- DRIVE RACKS MOUNTED UNDER BASE CONSERVE FLOOR SPACE AND PROVIDE ORGANIZED CONTROL OF EIGHT AXES OF MOTION



ADVANCED PICK-PLACE-INSPECT STATION



ENGINEERED SYSTEMS



LIQUID-COOLED, VACUUM-PREPARED SYSTEM

→ HEAVY DUTY VACUUM PREPARATION TO 10^{-6} TORR

→ LIQUID-COOLED LINEAR MOTOR DRIVE FOR SMOOTH SCANNING MOTION AND HIGH POWER

→ LINEAR ENCODER FEEDBACK PROVIDES HIGH ACCURACY OVER LONG TRAVEL

→ 6-AXIS PRECISION MICRO/MACRO COMPONENT INSPECTION AND ASSEMBLY STATION

→ HIGH SPEED & HIGH ACCELERATION LINEAR MOTOR GANTRY

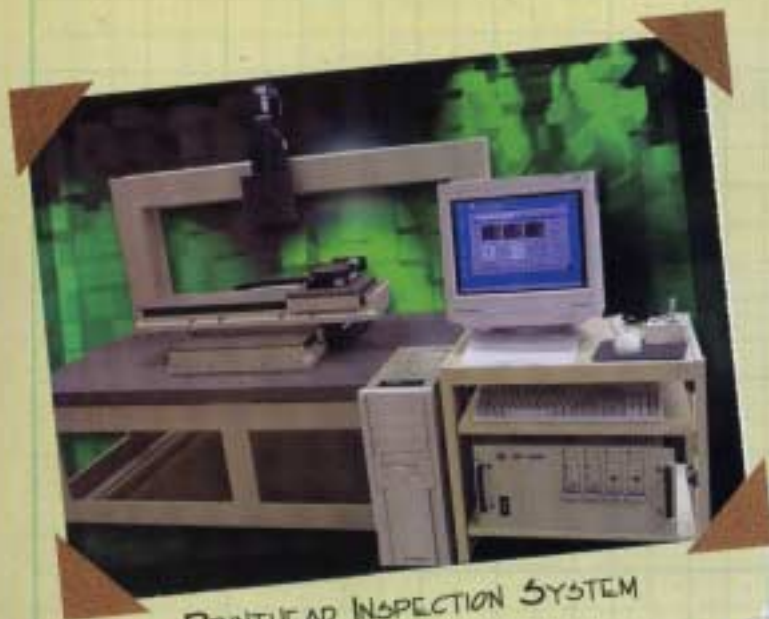
→ RACK-MOUNT CONTROLLER AND AMPLIFIER CLASSIC INSTALLED IN BASE SAVES FLOOR SPACE

→ TURNKEY SYSTEM



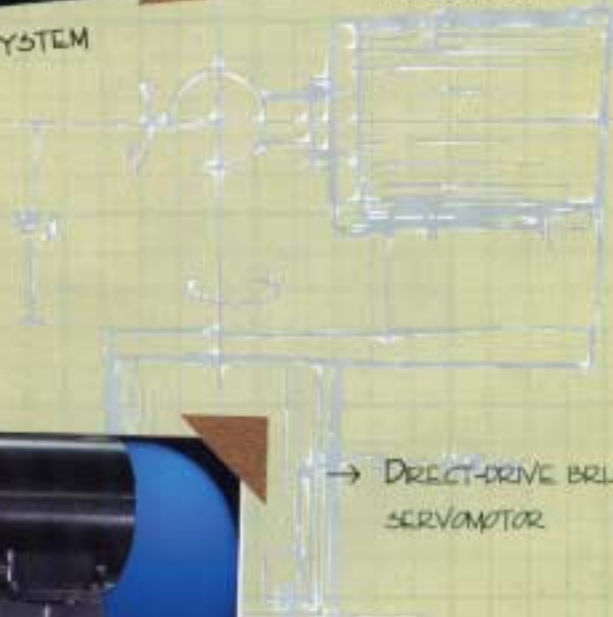
HIGH VOLUME PRODUCTION INSPECTION STATION

ENGINEERED SYSTEMS



PRINTHEAD INSPECTION SYSTEM

- CUSTOM BASE DESIGNED TO CUSTOMER SPECIFICATIONS
- COMPLETE TURNKEY SYSTEM INTEGRATED & TESTED FOR PLUG 'N' PLAY OPERATION
- SPECIALIZED PERFORMANCE TESTING TO SIMULATE APPLICATION



DISCRETE PART MILLING MACHINE

- DIRECT-DRIVE BRUSHLESS SERVOMOTOR
- RESOLUTION & REPEATABILITY TO ± 0.1 ARC-SEC
- HIGH THROUGHPUT WITH OPERATING SPEEDS UP TO 300 RPM
- SOPHISTICATED CONTOURING WITH LINDEX 500 CONTROLLER

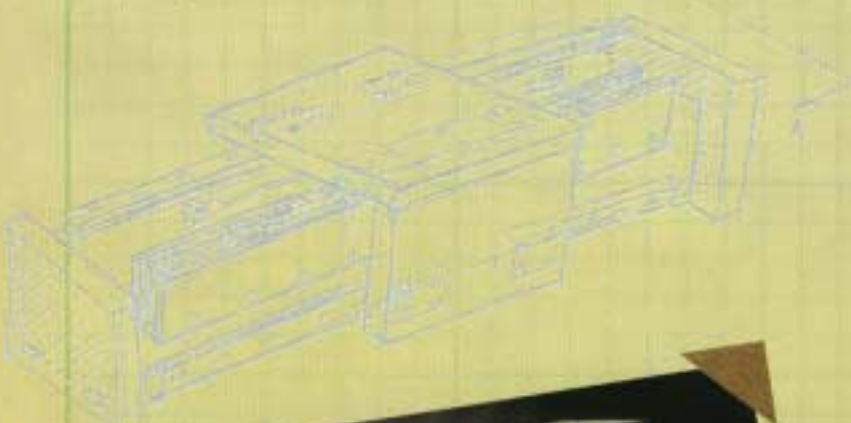


ENGINEERED SYSTEMS

- LOW FRICTION & SMOOTH VELOCITY
- "SMART" AMPLIFIER-BASED CONTROL
- ROLLING CABLE SCHEME FOR MINIMAL INDUCED VIBRATION
- COMPACT FOOTPRINT



HIGH-SPEED OPTICAL INDEXER



RAPID PROTOTYPING

- CUSTOM GRANITE BASE DESIGNED TO PROVIDE OPTIMAL SUPPORT, ACCURACY & STABILITY
- WIDE BODY X-AXIS SUPPORTS Y-AXIS CANTILEVER LOADS
- DIRECT DRIVE THETA AXIS FOR HIGH SPEED HIGH ACCURACY POSITIONING
- LARGE PARTS PROGRAM STORED ON-BOARD ADVANCED INDEX 600 CONTROLLER

ENGINEERED SYSTEMS

→ DEEP VACUUM (10^{-6} TORR) 6-AXIS SYSTEM WITH VENTED HARDWARE, SPECIAL LUBRICATION AND TEFLON™ CABLING

→ HIGH PRECISION LONG TRAVEL LIQUID COOLED LINEAR MOTOR DRIVEN X-Y

→ HIGH PRECISION 2-AXIS GMBAL WITH DIRECT SHAFT-MOUNTED ROTARY ENCODER POSITION FEEDBACK

→ FULLY COORDINATED 6-AXIS SIMULTANEOUS MOTION WITH CUBIC SPLINE CONTROL PROFILES



ION BEAM PROFILING IN VACUUM

→ LOW PROFILE, HIGH SPEED, LINEAR MOTOR STAGES - X-Y, HIGH-RESOLUTION THETA

→ FULLY INTEGRATED, HIGH-FLEX MULTIAxis CABLE MANAGEMENT

→ REVERSE-MOUNTED Z-AXIS FOR MINIMUM MACHINE ENVELOPE INCLUDES INTEGRAL BRAKE

→ SOPHISTICATED MULTIDIMENSIONAL ERROR MAPPING ONBOARD LINDEX 500 CONTROLLER



ELECTRONIC INSPECTION



ENGINEERED SYSTEMS

- ADVANCED CONTROL ALGORITHM WITH ACTIVE YAW CONTROL AND 3-D AXIS CALIBRATION
- ULTRA-STABLE GRANITE BRIDGE TO ACCOMMODATE AUTOFOCUS AXES AND SYSTEM OPTICS
- TURNKEY PRODUCTION MACHINE WITH AEROTECH STAGE MOTORS, DRIVES, & CONTROLS



PRECISION OPTICAL PRODUCTION



LASER MICROMACHINING ROTARY STAGE

- LIGHTWEIGHT ROTARY STAGE IMPROVES SYSTEM DYNAMICS IN X- θ SYSTEM CONFIGURATIONS
- DIRECT-DRIVE BRUSHLESS SLOTLESS MOTOR FOR PRECISE SMOOTH CONTINUING PERFORMANCE
- LOW INERTIA HIGH TORQUE IN COMPACT, SEALED PACKAGE
- 14 MM APERTURE THROUGHOUT TO FEED MATERIAL; COLLET CLAMP MOUNTING FIXTURE AVAILABLE