SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-K

FOR ANNUAL AND TRANSITION REPORTS
TO SECTIONS 13 OR 15(d) OF THE
SECURITIES EXCHANGE ACT OF 1934

(Mark One)

[X] ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2000

OR

[ ] TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from ________________ to ________________

Commission File number 0-23621

MKS INSTRUMENTS, INC.
(Exact Name of Registrant as Specified in Its Charter)

Massachusetts	04-2277512
(State or other Jurisdiction of Incorporation or Organization)	(I.R.S. Employer Identification No.)
Six Shattuck Road, Andover, MA	01810
(Address of Principal Executive Offices)	(Zip Code)

Registrant's Telephone Number, including area code (978) 975-2350

Securities registered pursuant to Section 12(b) of the Act: None.

Securities registered pursuant to Section 12(g) of the Act:
Common Stock, No par value

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes X No ___

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of the registrant's knowledge, in definitive proxy or information statement incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. [X]

Aggregate market value of the voting and non-voting common equity held by nonaffiliates of the registrant as of January 31, 2001: $481,200,688; Number of shares outstanding of the issuer's Common Stock, no par value, as of January 31, 2001: 36,771,583

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the MKS 2000 Annual Report for the year ended December 31, 2000 are incorporated by reference into Parts I, II and IV of this Form 10-K.

Portions of the definitive Proxy Statement for MKS's Annual Meeting of Stockholders to be held on May 16, 2001 are incorporated by reference into Part III of this Form 10-K.

PART I

ITEM 1. BUSINESS.

MKS Instruments, Inc., or MKS, is a leading worldwide developer, manufacturer and supplier of instruments, components and integrated subsystems used to measure, control and analyze gases in semiconductor manufacturing and similar industrial manufacturing processes.

MKS completed several acquisitions in fiscal 2000 all of which have been accounted for under the purchase method of accounting. On March 10, 2000 MKS acquired Compact Instrument Technology, LLC, or Compact Instrument, a start-up company with proprietary technology in process monitoring for semiconductor manufacturing and other manufacturing processes. The purchase price was $8,700,000 and consisted of $8,400,000 in MKS common stock and $300,000 in assumed net liabilities. On May 5, 2000 MKS acquired Telvac Engineering, Ltd., or Telvac, a UK-based, privately held manufacturer of vacuum subsystems. The purchase price was $1,600,000, and consisted of $750,000 in cash, $750,000 in debt and $100,000 in other acquisition expenses. On July 21, 2000 MKS acquired Spectra International, LLC, or Spectra, a privately held company with products and technology in process monitoring. The purchase price consisted of $9,700,000 cash; 183,293 shares of MKS common stock valued at $6,500,000; fully vested options to purchase 83,675 shares of MKS common stock valued at $2,400,000; and $400,000 in acquisition costs. On September 6, 2000 MKS acquired D.I.P., Inc., or D.I.P., a privately held company with products and technology in digital process control. The purchase price was $6,900,000 cash; 231,392 shares of MKS common stock valued at $6,800,000; and $300,000 in acquisition costs. See Note 12 of "Notes to Consolidated Financial Statements" on page 47 of our 2000 Annual Report which is incorporated herein by reference and is filed herewith as Exhibit 13.1.

On January 26, 2001, MKS acquired Applied Science and Technology, Inc., commonly known as ASTeX, a Wilmington, Massachusetts based company with products and technology in reactive gas generation and power delivery. Under the terms of the agreement, each outstanding share of ASTeX common stock was exchanged for 0.7669 newly issued shares of common stock of MKS, resulting in the issuance of approximately 11.2 million shares of common stock of MKS, representing 30% of MKS's then outstanding shares. This acquisition will be accounted for under the pooling of interests method of accounting. See "Management's Discussion and Analysis of Financial Condition and Results of Operations -- Recent Developments" on page 20 of our 2000 Annual Report which is incorporated herein by reference and is filed herewith as Exhibit 13.1. The discussion of MKS's business to follow, unless otherwise noted, is as of December 31, 2000 prior to the closing of the acquisition of ASTeX.

PRODUCTS

MKS offers a comprehensive line of products which are used to manufacture, among other things:

* semiconductors
* optical filters and fiber optic cables for data and telecommunications
* flat panel displays
* magnetic and optical storage devices and media, including:
  - compact disks
  - hard disk storage devices
  - magnetic devices for reading disk data
  - digital video disks
  - optical storage disks or laser readable disks
* solar panels
* gas lasers
* eyeglasses
* architectural glass
* cutting tools
* freeze-dried pharmaceuticals

MKS supplies products in three principal product areas. We also provide value-added integrated subsystems combining these products. Our products include:

- Pressure Measurement and Control Products
- Materials Delivery and Analysis Products
- Vacuum Products

PRESSURE MEASUREMENT AND CONTROL PRODUCTS. MKS designs and manufactures a wide range of gas pressure measurement and control instrumentation. Each product line consists of products which are designed for a variety of pressure ranges and accuracies.

Baratron Pressure Measurement Products. MKS's Baratron pressure measurement products are high precision pressure measurement instruments. MKS has five Baratron product families that range from high accuracy digital output instruments to simple electronic switches. These products are typically used to measure the pressure of the gases being distributed upstream of the process chambers, to measure process chamber pressures and to measure pressures between process chambers, vacuum pumps and exhaust lines. Baratron instruments measure pressures at ranges from two hundred times atmospheric pressure to one billionth of atmospheric pressure. MKS believes it offers the widest range of gas pressure measurement instruments in the semiconductor and advanced thin-film materials processing industries.

A key feature of Baratron instruments is the ability to measure pressure independent of gas composition, which is critical for precise pressure control of semiconductor processes that involve gas mixtures. In these processes, there is a need to control both pressure and gas mixture, but the pressure measurement instrument must measure only the pressure of the sum of the gases in the chamber, independent of gas composition. The Baratron instruments enable users to achieve a highly precise, accurate and repeatable measurement of gas pressure. Pressure measurement, independent of gas composition, is also useful during process steps used to remove atmospheric gases as well as those used to introduce specific amounts of various types of gases. Such processes are used to manufacture fluorescent bulbs and to fabricate gas lasers.

Automatic Pressure and Vacuum Control Products. MKS's automatic pressure control products consist of analog and digital automatic pressure and vacuum control electronic instruments and valves. These products enable precise control of process pressure by electronically actuating valves which control the flow of gases in and out of the process chamber to minimize the difference between desired and actual pressure in the chamber. The electronic controllers vary from simple analog units with precise manual tuning capability to state-of-the-art self-tuning, digital signal processing controllers. The valve products vary from small gas inlet valves to large exhaust valves.

In most cases, MKS's Baratron pressure measurement instruments provide the pressure input to the automatic pressure control device. Together, these components create an integrated automatic pressure control system. MKS's pressure control products can also accept inputs from other measurement instruments, enabling the automatic control of gas input or exhaust based on parameters other than pressure.

MKS has recently introduced a line of integrated pressure controllers that combine the functions of its Baratron pressure measurement instrument, flow measurement instrument, control electronics and valve into a four-inch long instrument which can be placed directly on a gas line to control pressure downstream of the instrument while indicating the gas flow rate. This addresses the need for smaller components, saving valuable clean room space.

MATERIALS DELIVERY AND ANALYSIS PRODUCTS. MKS designs and manufactures a wide range of flow and composition analysis measurement and control instrumentation. Each product line consists of products which are designed for a variety of flow and composition ranges and accuracies.

Flow Measurement and Control Products. MKS's flow measurement products include gas, vapor and liquid flow measurement products based upon thermal conductivity, pressure and direct liquid injection technologies. The flow control products combine the flow measuring device with valve control elements based upon solenoid, piezo-electric and piston pump technologies. The products measure and automatically control the mass flow rate of gases and vapors into the process chamber. MKS's broad product lines include products that allow the precise, automatic flow control of inert or corrosive gases, the automatic control of low vapor pressure gases and heated liquid source materials, and the automatic control of delicate, advanced technology liquid sources and vaporized solid sources for next generation devices.

MKS's line of thermal-based mass flow controllers, which control gas flow based on the molecular weight of gases, includes all-metal-sealed designs and ultra-clean designs for semiconductor applications, and general purpose controllers for applications where all-metal-sealed construction is not required. MKS has also developed pressure-based mass flow controllers, based on Baratron pressure instrument measurement and control technology, which use flow restrictors in the gas line to transform pressure control into mass flow control.

Certain new materials required for the next generation of semiconductor devices are difficult to control using traditional thermal mass flow technology. To control these new materials, MKS has designed a direct liquid injection subsystem which pumps a precise volume of liquid into a vaporizer, which in turn supplies a controlled flow of vapor into the process chamber. The direct liquid injection subsystem pump and vaporizer are presently used principally for research and development applications for next generation semiconductor device conductors, diffusion barriers and insulators, such as copper, titanium nitride and dielectric materials.

MKS's flow measurement products also include a calibration system which independently measures mass flow and compares this measurement to that of the process chamber mass flow controller. The demand for the MKS calibration system is driven by the increasingly stringent process control needs of the semiconductor industry and the need to reduce costly downtime resulting from stopping operations to address mass flow controller problems.

Gas Composition Analysis Instruments. MKS's gas analysis instruments are sold primarily to the semiconductor industry. The residual gas analysis product lines include a quadrapole mass spectrometer sensor, which is a device that separates gases based on molecular weight. MKS's quadrapole mass spectrometer sensors include built-in electronics to analyze the composition of background and process gases in the process chamber. MKS's Spectra process monitoring system is a sophisticated quadrapole mass spectrometer process analyzer for statistical process monitoring of manufacturing processes operating from very low pressures to atmospheric pressure. These instruments are provided both as portable laboratory systems and as process gas monitoring systems used in the diagnosis of semiconductor manufacturing process systems. The gas monitoring systems can indicate out-of-bounds conditions, such as the presence of undesirable atmospheric gases, water vapor or out-of-tolerance amounts of specific gases in the process chamber, enabling operators to diagnose and repair faulty equipment. MKS's gas sampling systems provide a turn-key solution for withdrawing gases from chambers at relatively high pressures for introduction into the low pressure gas analyzers. Next generation semiconductor manufacturing processes, with smaller circuit patterns and larger wafer sizes, are expected to require sophisticated gas analysis instruments and/or monitoring equipment to ensure tighter process control and earlier diagnosis of equipment malfunction. MKS's acquisition of Compact Instrument enhances its core capabilities in gas composition analysis and provides additional capabilities to reduce the size and costs of monitors for advanced processes.

Optical Monitoring Instruments. MKS's acquisition of Spectra, in addition to augmenting the residual gas analysis products mentioned above, added a range of optical monitoring instruments. These are sold primarily to the thin film coating industry in applications such as the manufacture of optical filters. The optical monitors measure the thickness and optical properties of a film being deposited, allowing the user to better control the process.

VACUUM PRODUCTS. MKS designs and manufactures a wide variety of vacuum technology products, including vacuum gauges, valves and components.

Vacuum Gauging Products. MKS offers a wide range of vacuum instruments consisting of vacuum measurement sensors and associated power supply and readout units. These vacuum gauges measure phenomena that are related to the level of pressure in the process chamber and downstream of the process chamber between the chamber and the pump. Unlike Baratron pressure measurement instruments, vacuum gauges do not measure pressure directly. These gauges are used to measure vacuum at pressures lower than those measurable with a Baratron pressure measurement instrument or to measure vacuum in the Baratron pressure measurement instrument range where less accuracy is required. MKS's indirect pressure gauges use thermal conductivity and ionization gauge technologies to measure pressure from atmospheric pressure to one trillionth of atmospheric pressure. MKS's Baratron pressure measurement instruments, together with its vacuum gauges, are capable of measuring the full range of pressures used in semiconductor and other thin-film manufacturing processes from two hundred times atmospheric pressure to one trillionth of atmospheric pressure.

MKS also manufactures a wide range of vacuum gauge instruments in which the associated electronics are packaged with the vacuum sensor, reducing panel space and installation cost. MKS offers both analog and digital versions of these vacuum gauge transducers.

Vacuum Valves and Components. MKS's vacuum valves are used on the gas lines between the process chamber and the pump downstream of the process chamber. MKS's vacuum components consist of flanges, fittings, traps and heated lines that are used downstream from the process chamber to provide leak free connections and to prevent condensable materials from depositing particles near or back into the chamber. The manufacture of small circuit patterns cannot tolerate contamination from atmospheric leaks or particles. MKS's vacuum components are designed to minimize such contamination and thus increase yields and uptimes.

MARKETS AND APPLICATIONS

MKS estimates that approximately 76% of its sales in 2000 were made to the semiconductor industry. MKS's products are also used in other markets and applications including the manufacture of, among other things:

- optical filters and fiber optic cables for data and telecommunications
- flat panel displays
- magnetic and optical storage media
- solar panels
- gas lasers
- eyeglasses
- architectural glass
- cutting tools
- freeze-dried pharmaceuticals

As of December 31, 2000, MKS's products were sold primarily through its direct sales force in 34 offices in France, Germany, Japan, Korea, The Netherlands, Singapore, Taiwan, the United Kingdom and the United States. This direct sales force is supplemented by sales representatives and agents in countries including Canada, China, India, Israel, and Italy and in selected U.S. cities. The major markets for MKS's products include:

Semiconductor Manufacturing

MKS's products are sold to semiconductor capital equipment manufacturers and semiconductor device manufacturers. MKS's products are used in the major semiconductor processing steps such as:

- depositing materials onto substrates
- etching circuit patterns
- implanting positively charged atoms into a substrate to alter electrical characteristics

MKS's products are also used for process facility applications such as gas distribution, pressure control and vacuum distribution in clean rooms where semiconductor manufacturing takes place. MKS anticipates that the semiconductor manufacturing market will continue to account for a substantial portion of its sales. While the semiconductor device manufacturing market is global, the major semiconductor capital equipment manufacturers are concentrated in the United States, Japan and Europe.

Optical Filters, Optical Fibers and Other Coating

MKS's products are used in optical filter, optical fiber and other optical thin-film coating processes. MKS's products are sold both to coating equipment manufacturers and to manufacturers of products made using optical thin-film coating processes. Optical filters and fibers used for data transmission are manufactured using processes to deposit chemical vapors which are similar to those used in semiconductor manufacturing. The requirement for greater data transmission is driving the need for tighter control of optical filters and fiber coating processes. Optical thin films for eyeglasses, solar panels and architectural glass are deposited using processes to deposit chemical vapors and gaseous metals similar to those used in semiconductor manufacturing. Optical filter, optical fiber and other optical thin-film processing are concentrated in the United States, Japan and Europe.

Flat Panel Display Manufacturing

MKS's products are used in the manufacture of flat panel displays, which require the same or similar fabrication processes as semiconductor manufacturing. MKS sells its products both to flat panel original equipment manufacturers and to end-users in the flat panel display market. The transition to larger panel size and higher definition is driving the need for defect reduction which requires tighter process controls. The major manufacturers for flat panel displays and flat panel display equipment are concentrated in Japan, Korea, Taiwan and the United States.

Magnetic and Optical Storage Media

MKS's products are used in the manufacture of:

- magnetic storage media which store and read data magnetically
- optical storage media which store and read data using laser technology
- compact disks
- hard disks
- data storage devices
- digital video or versatile disks

The transition to higher density storage capacity requires manufacturing processes incorporating tighter process controls. While storage media manufacturing is global, the major manufacturers are concentrated in Japan and the Asia Pacific region and storage media capital equipment manufacturers are concentrated in the United States, Japan and Europe.

Other Coating Markets

MKS's products are also used in processes for the application of thin films to harden tool bit surfaces, for the application of diamond thin films to enhance surface hardness and durability and for coatings used for food container packaging, jewelry and ornaments. The major equipment and process providers are concentrated in the United States, Japan and Europe.

Other Markets

MKS's products are used in plasma processes used to sterilize medical instruments, in vacuum freeze drying of pharmaceuticals, foods and beverages, and in vacuum processes involved in light bulb and gas laser manufacturing. MKS's products are also incorporated into some end-market products such as industrial vehicles, and analytical instruments. MKS's products are also sold to government, university and industrial laboratories for vacuum applications involving research and development in materials science, physical chemistry and electronics materials. The major equipment and process providers and research laboratories are concentrated in the United States, Japan and Europe.

CUSTOMERS

MKS's largest customers are leading semiconductor capital equipment manufacturers such as Applied Materials, Lam Research, Novellus and Tokyo Electron, semiconductor device manufacturers such as Motorola, and specialty gas providers such as Air Products and Chemicals. Sales to MKS's top ten customers accounted for approximately 29% of its net sales in 1998, 39% in 1999 and 47% in 2000. International sales represented approximately 32% of its net sales in 1998, 31% in 1999 and 29% in 2000. During 2000, Applied Materials accounted for approximately 25% of MKS's net sales. Sales to Applied Materials and to a major supplier to Applied Materials, who is also a customer of MKS, accounted for approximately 30% of MKS's 2000 sales. Applied Materials purchases products from MKS under the terms of an agreement, with no minimum purchase requirements, that expires in April 2001. MKS and Applied Materials are currently negotiating a new contract.

SALES, MARKETING AND SUPPORT

MKS's worldwide sales, marketing and support organization is critical to its strategy of maintaining close relationships with semiconductor capital equipment manufacturers and semiconductor device manufacturers. MKS sells its products primarily through its direct sales force. As of December 31, 2000, MKS had 154 sales employees in 34 offices in France, Germany, Japan, Korea, The Netherlands, Singapore, Taiwan, the United Kingdom and the United States. This direct sales force is supplemented by sales representatives and agents in countries including Canada, China, India, Israel, and Italy and in selected U.S. cities. MKS maintains a marketing staff to identify customer requirements, assist in product planning and specifications and to focus on future trends in the semiconductor and other markets.

As semiconductor device manufacturers have become increasingly sensitive to the significant costs of system downtime, they have required that suppliers offer comprehensive local repair service and close customer support. Manufacturers require close support to enable them to repair, modify, upgrade and retrofit their equipment to improve yields and adapt new materials or processes. To meet these market requirements, MKS maintains a worldwide sales and support organization with offices in 34 locations. Technical support is provided by applications engineers located at offices in Arizona, California, Colorado, Massachusetts, Oregon and Texas, as well as Canada, France, Germany, India, Israel, Italy, Japan, Korea, The Netherlands, Singapore, Taiwan and the United Kingdom. Repair and calibration services are provided at 17 service depots located worldwide. MKS provides warranties from one to three years, depending upon the type of product. In addition, MKS offers training programs for its customers in a wide range of vacuum and gas processing technologies.

RESEARCH AND DEVELOPMENT

MKS's research and development efforts are directed toward developing and improving MKS's process control instruments and components for semiconductor and advanced thin-film processing applications and identifying and developing products for new applications for which gas management plays a critical role. MKS has undertaken an initiative to involve its marketing, engineering, manufacturing and sales personnel in the concurrent development of new products in order to reduce the time to market for new products. MKS's employees also work closely with its customers' development personnel. These relationships help MKS identify and define future technical needs on which to focus its research and development efforts. In addition, MKS participates in S.I.S.A. (Semiconductor Industry Suppliers Association), a consortium of semiconductor equipment suppliers, to assist in product development and standardization of product technology, and it supports research at academic institutions targeted at advances in materials science and semiconductor process development.

COMPETITION

The market for MKS's products is highly competitive. Principal competitive factors include:

- historical customer relationships

- product quality, performance and price

- breadth of product line

- manufacturing capabilities

- customer service and support

Although MKS believes that it competes favorably with respect to these factors, there can be no assurance that it will continue to do so.

MKS encounters substantial competition in each of its product lines from a number of competitors, although no one competitor competes with MKS across all product lines. Certain of MKS's competitors have greater financial and other resources than MKS. In some cases, the competitors are smaller than MKS, but well-established in specific product niches. Millipore Corporation offers products that compete with MKS's pressure and flow products. Aera Corporation, STEC, and Unit Instruments, each offer products that compete with MKS's mass flow control products. Nor-Cal Products, Inc. and MDC Vacuum Products, Inc., each offer products that compete with MKS's vacuum components. Leybold-Inficon, Inc., offers products that compete with MKS's vacuum measuring and gas analysis products. Helix Technology Corporation offers products that compete with MKS's vacuum gauging products.

In some cases, particularly with respect to mass flow controllers, semiconductor device manufacturers may direct semiconductor capital equipment manufacturers to use a specified supplier's product in their equipment. Accordingly, MKS's success depends in part on its ability to have semiconductor device manufacturers specify that its products be used at their fabrication facilities and MKS may encounter difficulties in changing established relationships of competitors with a large installed base of products at such customers' fabrication facilities. In addition, MKS's competitors can be expected to continue to improve the design and performance of their products. There can be no assurance that competitors will not develop products that offer price or performance features superior to those of MKS's products.

PATENTS AND OTHER INTELLECTUAL PROPERTY RIGHTS

MKS relies on a combination of patent, copyright, trademark and trade secret laws and license agreements to establish and protect its proprietary rights. As of December 31, 2000, MKS held 55 U.S. patents and had 27 pending U.S. patent applications. Foreign counterparts of certain of these applications have been filed or may be filed at the appropriate time. Although MKS believes that certain patents may be important for certain aspects of its business, MKS believes that its success depends more upon close customer contact, innovation, technological expertise, responsiveness and worldwide distribution.

MKS requires each of its employees, including its executive officers, to enter into standard agreements pursuant to which the employee agrees to keep confidential all of MKS's proprietary information and to assign to MKS all inventions while they are employed by MKS.

On November 30, 2000, ASTeX brought suit in federal district court in Delaware against Advanced Energy Industries, Inc. for infringement of ASTeX's patent related to its Astron product. MKS is unclear as to the outcome of this suit at this time. MKS is not involved in any further material disputes with other parties with respect to the ownership or use of its proprietary technology. However, there can be no assurance that other parties will not assert technology infringement claims or other claims against MKS in the future. The litigation of such a claim may involve significant expense and management time. In addition, if any such claim were successful, MKS could be required to pay monetary damages and may also be required to either refrain from distributing the infringing product or obtain a license from the party asserting the claim (which license may not be available on commercially reasonable terms).

EMPLOYEES

As of December 31, 2000, MKS employed 1,471 persons. Management believes that MKS's ongoing success depends upon its continued ability to attract and retain highly skilled employees. None of MKS's employees is represented by a labor union or party to a collective bargaining agreement. MKS believes that its employee relations are good.

FACTORS THAT MAY AFFECT FUTURE RESULTS

MKS believes that this document contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. These statements are subject to risks and uncertainties and are based on the beliefs and assumptions of management of MKS, based on information currently available to MKS's management. Use of words such as "believes," "expects," "anticipates," "intends," "plans," "estimates," "should," "likely" or similar expressions, indicate a forward-looking statement. Forward-looking statements involve risks, uncertainties and assumptions. Certain of the information contained in this Annual Report on Form 10-K consists of forward-looking statements. Important factors that could cause actual results to differ materially from the forward-looking statements include the following:

MKS' BUSINESS DEPENDS SUBSTANTIALLY ON CAPITAL SPENDING IN THE SEMICONDUCTOR INDUSTRY WHICH IS CHARACTERIZED BY PERIODIC FLUCTUATIONS THAT MAY CAUSE A REDUCTION IN DEMAND FOR MKS' PRODUCTS.

MKS estimates that approximately 66% of its sales during 1999 and 76% of its sales in 2000 were to semiconductor capital equipment manufacturers and semiconductor device manufacturers, and it expects that sales to such customers will continue to account for a substantial majority of its sales. MKS' business depends upon the capital expenditures of semiconductor device manufacturers, which in turn depend upon the demand for semiconductors. Periodic reductions in demand for the products manufactured by semiconductor capital equipment manufacturers and semiconductor device manufacturers may adversely affect MKS' business, financial condition and results of operations. Historically, the semiconductor market has been highly cyclical and has experienced periods of overcapacity, resulting in significantly reduced demand for capital equipment. For example, in 1996 and 1998, the semiconductor capital equipment industry experienced significant declines, which caused a number of MKS customers to reduce their orders. The downturn in capital spending by semiconductor manufacturers also reduced ASTeX's sales during portions of 1998 and 1999, resulting in significant losses. More recently, in the first quarter of 2001, MKS has announced that there has been a reduction in demand from OEM customers, and that it expects lower gross margins due to reduced absorption of manufacturing overhead at the lower revenue levels and a higher proportion of lower margin products. In addition, many semiconductor manufacturers have operations and customers in Asia, a region which in recent years has experienced serious economic problems including currency devaluations, debt defaults, lack of liquidity and recessions. MKS cannot be certain that semiconductor downturns will not recur. A decline in the level of orders as a result of any future downturn or slowdown in the semiconductor capital equipment industry could have a material adverse effect on MKS' business, financial condition and results of operations.

MKS' QUARTERLY OPERATING RESULTS HAVE VARIED, AND ARE LIKELY TO CONTINUE TO VARY SIGNIFICANTLY. THIS MAY RESULT IN VOLATILITY IN THE MARKET PRICE FOR MKS' SHARES.

A substantial portion of MKS' shipments occur shortly after an order is received and therefore MKS operates with a low level of backlog. As a result, a decrease in demand for MKS' products from one or more customers could occur with limited advance notice and could have a material adverse effect on MKS' results of operations in any particular period.

A significant percentage of MKS' expenses are relatively fixed and based in part on expectations of future net sales. The inability to adjust spending quickly enough to compensate for any shortfall would magnify the adverse impact of a shortfall in net sales on MKS' results of operations. Factors that could cause fluctuations in MKS' net sales include:

- the timing of the receipt of orders from major customers;
- shipment delays;
- disruption in sources of supply;
- seasonal variations of capital spending by customers;
- production capacity constraints; and
- specific features requested by customers.

For example, MKS was in the process of increasing its production capacity when the semiconductor capital equipment market began to experience a significant downturn in 1996. This downturn had a material adverse effect on MKS' operating results in the second half of 1996 and the first half of 1997. After an increase in business in the latter half of 1997, the market experienced another downturn in 1998, which had a material adverse effect on MKS' 1998 and first quarter 1999 operating results. As a result of the factors discussed above, it is likely that MKS will in the future experience quarterly or annual fluctuations and that, in one or more future quarters, its operating results will fall below the expectations of public market analysts or investors. In any such event, the price of MKS' common stock could decline significantly.

THE LOSS OF NET SALES TO ANY ONE OF MKS' MAJOR CUSTOMERS WOULD LIKELY HAVE A MATERIAL ADVERSE EFFECT ON MKS.

MKS' five largest customers accounted for approximately 42% of its net sales in 2000, 33% of its net sales in 1999 and 24% of its net sales in 1998. The loss of a major customer or any reduction in orders by these customers, including reductions due to market or competitive conditions, would likely have a material adverse effect on MKS' business, financial condition and results of operations. During 2000 and 1999, one customer, Applied Materials, accounted for approximately 25% and 22%, respectively, of MKS' net sales. In addition, Applied Materials accounted for approximately 50% of the revenues of ASTeX in its fiscal year 2000. MKS' purchase contract with Applied Materials expires in April 2001. While MKS and Applied Materials are currently negotiating a new agreement, there can be no assurance that negotiations will be successful. None of MKS' significant customers, including Applied Materials, has entered into an agreement requiring it to purchase any minimum quantity of MKS' products. The demand for MKS' products from its semiconductor capital equipment customers depends in part on orders received by them from their semiconductor device manufacturer customers.

Attempts to lessen the adverse effect of any loss or reduction through the rapid addition of new customers could be difficult because prospective customers typically require lengthy qualification periods prior to placing volume orders with a new supplier. MKS' future success will continue to depend upon:

- its ability to maintain relationships with existing key customers;

- its ability to attract new customers; and

- the success of its customers in creating demand for their capital equipment products which incorporate MKS' products.

AS PART OF MKS' BUSINESS STRATEGY, MKS HAS ENTERED INTO AND MAY ENTER INTO OR SEEK TO ENTER INTO BUSINESS COMBINATIONS AND ACQUISITIONS THAT MAY BE DIFFICULT TO INTEGRATE, DISRUPT ITS BUSINESS, DILUTE STOCKHOLDER VALUE OR DIVERT MANAGEMENT ATTENTION.

MKS acquired Compact Instrument in March 2000, Telvac in May 2000, Spectra in July 2000, D.I.P in September 2000 and ASTeX in January 2001. As a part of its business strategy, MKS may enter into additional business combinations and acquisitions. Acquisitions are typically accompanied by a number of risks, including the difficulty of integrating the operations and personnel of the acquired companies, the potential disruption of MKS' ongoing business and distraction of management, expenses related to the acquisition and potential unknown liabilities associated with acquired businesses.

If MKS is not successful in completing acquisitions that it may pursue in the future, it may be required to reevaluate its growth strategy and MKS may have incurred substantial expenses and devoted significant management time and resources in seeking to complete proposed acquisitions that will not generate benefits for it. In addition, with future acquisitions, MKS could use substantial portions of its available cash as all or a portion of the purchase price. MKS could also issue additional securities as consideration for these acquisitions, which could cause significant stockholder dilution. MKS' acquisitions of Compact Instrument, Telvac, Spectra, D.I.P. and ASTeX and any future acquisitions may not ultimately help MKS achieve its strategic goals and may pose other risks to MKS.

AN INABILITY TO CONVINCE SEMICONDUCTOR DEVICE MANUFACTURERS TO SPECIFY THE USE OF MKS' PRODUCTS TO MKS' CUSTOMERS, WHO ARE SEMICONDUCTOR CAPITAL EQUIPMENT MANUFACTURERS, WOULD WEAKEN MKS' COMPETITIVE POSITION.

The markets for MKS' products are highly competitive. Its competitive success often depends upon factors outside of its control. For example, in some cases, particularly with respect to mass flow controllers, semiconductor device manufacturers may direct semiconductor capital equipment manufacturers to use a specified supplier's product in their equipment. Accordingly, for such products, MKS' success will depend in part on its ability to have semiconductor device manufacturers specify that MKS' products be used at their semiconductor fabrication facilities. In addition, MKS may encounter difficulties in changing established relationships of competitors that already have a large installed base of products within such semiconductor fabrication facilities.

IF MKS' PRODUCTS ARE NOT DESIGNED INTO SUCCESSIVE NEW GENERATIONS OF ITS CUSTOMERS' PRODUCTS, MKS WILL LOSE SIGNIFICANT NET SALES DURING THE LIFESPAN OF THOSE PRODUCTS.

New products designed by semiconductor capital equipment manufacturers typically have a lifespan of five to ten years. MKS' success depends on its products being designed into new generations of equipment for the semiconductor industry. MKS must develop products that are technologically current so that they are positioned to be chosen for use in each successive new generation of semiconductor capital equipment. If MKS products are not chosen by its customers, MKS' net sales may be reduced during the lifespan of its customers' products. In addition, MKS must make a significant capital investment to develop products for its customers well before its products are introduced and before it can be sure that it will recover its capital investment through sales to the customers in significant volume. MKS is thus also at risk during the development phase that its product may fail to meet its customers' technical or cost requirements and may be replaced by a competitive product or alternative technology solution. If that happens, MKS may be unable to recover MKS' development costs.

THE SEMICONDUCTOR INDUSTRY IS SUBJECT TO RAPID DEMAND SHIFTS WHICH ARE DIFFICULT TO PREDICT. AS A RESULT, MKS' INABILITY TO EXPAND ITS MANUFACTURING CAPACITY IN RESPONSE TO THESE RAPID SHIFTS MAY CAUSE A REDUCTION IN ITS MARKET SHARE.

MKS' ability to increase sales of certain products depends in part upon its ability to expand its manufacturing capacity for such products in a timely manner. If MKS is unable to expand its manufacturing capacity on a timely basis or to manage such expansion effectively, its customers could implement its competitors' products and, as a result, its market share could be reduced. Because the semiconductor industry is subject to rapid demand shifts which are difficult to foresee, MKS may not be able to increase capacity quickly enough to respond to a rapid increase in demand in the semiconductor industry. Additionally, capacity expansion could increase MKS' fixed operating expenses and if sales levels do not increase to offset the additional expense levels associated with any such expansion, its business, financial condition and results of operations could be materially adversely affected.

SALES TO FOREIGN MARKETS CONSTITUTE A SUBSTANTIAL PORTION OF MKS' NET SALES; THEREFORE, MKS NET SALES AND RESULTS OF OPERATIONS COULD BE ADVERSELY AFFECTED BY DOWNTURNS IN ECONOMIC CONDITIONS IN COUNTRIES OUTSIDE OF THE UNITED STATES.

International sales, which include sales by MKS' foreign subsidiaries, but exclude direct export sales (which were less than 10% of MKS' total net sales), accounted for approximately 29% of net sales in 2000, 31% of net sales in 1999 and 32% of net sales in 1998. In addition, international sales accounted for 20% of revenues in ASTeX's fiscal year 2000, 20% of revenues in its fiscal year 1999, and 23% of revenues in its fiscal year 1998. MKS anticipates that international sales will continue to account for a significant portion of MKS' net sales. In addition, certain of MKS' key domestic customers derive a significant portion of their revenues from sales in international markets. Therefore, MKS' sales and results of operations could be adversely affected by economic slowdowns and other risks associated with international sales.

UNFAVORABLE CURRENCY EXCHANGE RATE FLUCTUATIONS MAY LEAD TO LOWER GROSS MARGINS, OR MAY CAUSE MKS TO RAISE PRICES WHICH COULD RESULT IN REDUCED SALES.

Currency exchange rate fluctuations could have an adverse effect on MKS' net sales and results of operations and MKS could experience losses with respect to its hedging activities. Unfavorable currency fluctuations could require MKS to increase prices to foreign customers which could result in lower net sales by MKS to such customers. Alternatively, if MKS does not adjust the prices for its products in response to unfavorable currency fluctuations, its results of operations could be adversely affected. In addition, sales made by MKS' foreign subsidiaries are denominated in the currency of the country in which these products are sold and the currency it receives in payment for such sales could be less valuable at the time of receipt as a result of exchange rate fluctuations. MKS enters into forward exchange contracts and local currency purchased options to reduce currency exposure arising from intercompany sales of inventory. However, MKS cannot be certain that its efforts will be adequate to protect it against significant currency fluctuations or that such efforts will not expose it to additional exchange rate risks.

COMPETITION FOR PERSONNEL IN THE SEMICONDUCTOR AND INDUSTRIAL MANUFACTURING INDUSTRIES IS INTENSE.

MKS' success depends to a large extent upon the efforts and abilities of a number of key employees and officers, particularly those with expertise in the semiconductor manufacturing and similar industrial manufacturing industries. The loss of key employees or officers could have a material adverse effect on MKS' business, financial condition and results of operations. MKS believes that its future success will depend in part on its ability to attract and retain highly skilled technical, financial, managerial and marketing personnel. Competition for such personnel is intense, and MKS cannot be certain that it will be successful in attracting and retaining such personnel.

MKS' PROPRIETARY TECHNOLOGY IS IMPORTANT TO THE CONTINUED SUCCESS OF ITS BUSINESS. MKS' FAILURE TO PROTECT THIS PROPRIETARY TECHNOLOGY MAY SIGNIFICANTLY IMPAIR MKS' COMPETITIVE POSITION.

As of December 31, 2000, MKS owned 55 U.S. patents and 56 foreign patents and had 27 pending U.S. patent applications and 90 pending foreign patent applications. Although MKS seeks to protect its intellectual property rights through patents, copyrights, trade secrets and other measures, it cannot be certain that:

- MKS will be able to protect its technology adequately;

- competitors will not be able to develop similar technology independently;

- any of MKS' pending patent applications will be issued;

- intellectual property laws will protect MKS' intellectual property rights; or

- third parties will not assert that MKS' products infringe patent, copyright or trade secrets of such parties.

PROTECTION OF MKS' INTELLECTUAL PROPERTY RIGHTS MAY RESULT IN COSTLY LITIGATION.

Litigation may be necessary in order to enforce MKS' patents, copyrights or other intellectual property rights, to protect its trade secrets, to determine the validity and scope of the proprietary rights of others or to defend against claims of infringement. For example, on November 30, 2000, ASTeX brought suit in federal district court in Delaware against Advanced Energy Industries, Inc. for infringement of ASTeX's patent related to its Astron product. Such litigation could result in substantial costs and diversion of resources and could have a material adverse effect on MKS' business, financial condition and results of operations.

THE MARKET PRICE OF MKS' COMMON STOCK HAS FLUCTUATED AND MAY CONTINUE TO FLUCTUATE FOR REASONS OVER WHICH MKS HAS NO CONTROL.

The stock market has from time to time experienced, and is likely to continue to experience, extreme price and volume fluctuations. Recently, prices of securities of technology companies have been especially volatile and have often fluctuated for reasons that are unrelated to the operating performance of the companies. The market price of shares of MKS' common stock has fluctuated greatly since its initial public offering and could continue to fluctuate due to a variety of factors. In the past, companies that have experienced volatility in the market price of their stock have been the objects of securities class action litigation. If MKS were the object of securities class action litigation, it could result in substantial costs and a diversion of MKS' management's attention and resources.

MKS' DEPENDENCE ON SOLE AND LIMITED SOURCE SUPPLIERS COULD AFFECT ITS ABILITY TO MANUFACTURE PRODUCTS AND SYSTEMS.

MKS relies on sole and limited source suppliers for a few of its components and subassemblies that are critical to the manufacturing of MKS' products. This reliance involves several risks, including the following:

- the potential inability to obtain an adequate supply of required components;

- reduced control over pricing and timing of delivery of components; and

- the potential inability of its suppliers to develop technologically advanced products to support MKS' growth and development of new systems.

MKS believes that in time MKS could obtain and qualify alternative sources for most sole and limited source parts. Seeking alternative sources of the parts could require MKS to redesign its systems, resulting in increased costs and likely shipping delays. MKS may be unable to redesign its systems, which could result in further costs and shipping delays. These increased costs would decrease MKS' profit margins if it could not pass the costs to its customers. Further, shipping delays could damage MKS' relationships with current and potential customers and have a material adverse effect on MKS' business and results of operations.

MKS IS SUBJECT TO GOVERNMENTAL REGULATIONS.

MKS is subject to federal, state, local and foreign regulations, including environmental regulations and regulations relating to the design and operation of MKS' power supply products. MKS must ensure that these systems meet certain safety standards, many of which vary across the countries in which MKS' systems are used. For example, the European Union has published directives specifically relating to power supplies. MKS must comply with these directives in order to ship MKS' systems into countries that are members of the European Union. MKS believes it is in compliance with current applicable regulations, directives and standards and has obtained all necessary permits, approvals, and authorizations to conduct MKS' business. However, compliance with future regulations, directives and standards could require it to modify or redesign certain systems, make capital expenditures or incur substantial costs. If MKS does not comply with current or future regulations, directives and standards:

- MKS could be subject to fines;

- MKS' production could be suspended; or

- MKS could be prohibited from offering particular systems in specified markets.

ONE STOCKHOLDER, ALONG WITH MEMBERS OF HIS FAMILY, CONTINUES TO HAVE A SUBSTANTIAL INTEREST IN MKS.

As of January 31, 2001, John R. Bertucci, chairman and chief executive officer of MKS, and members of his family, in the aggregate, beneficially owned approximately 41.4% of MKS' outstanding common stock. As a result, these stockholders, acting together, are able to exert substantial influence over actions of MKS.

SOME PROVISIONS OF MKS' RESTATED ARTICLES OF ORGANIZATION, MKS' BY-LAWS AND MASSACHUSETTS LAW COULD DISCOURAGE POTENTIAL ACQUISITION PROPOSALS AND COULD DELAY OR PREVENT A CHANGE IN CONTROL OF MKS.

Anti-takeover provisions could diminish the opportunities for stockholders to participate in tender offers, including tender offers at a price above the then current market value of the common stock. Such provisions may also inhibit increases in the market price of the common stock that could result from takeover attempts. For example, while MKS has no present plans to issue any preferred stock, MKS' board of directors, without further stockholder approval, may issue preferred stock that could have the effect of delaying, deterring or preventing a change in control of MKS. The issuance of preferred stock could adversely affect the voting power of the holders of MKS' common stock, including the loss of voting control to others. In addition, MKS' By-Laws provide for a classified board of directors consisting of three classes. The classified board could also have the effect of delaying, deterring or preventing a change in control of MKS.

MARKET RISK AND SENSITIVITY ANALYSIS

FOREIGN EXCHANGE RATE RISK

MKS enters into forward exchange contracts and local currency purchased options to reduce currency exposure arising from intercompany sales of inventory. The potential fair value loss for a hypothetical 10% adverse change in forward currency exchange rates on MKS' forward exchange contracts at December 31, 2000 and 1999 would be $146,000 and $502,000, respectively. The potential loss in each year was estimated by calculating the fair value of the forward exchange contracts at December 31, and comparing that with those calculated using the hypothetical forward currency exchange rates.

The value of the local currency purchased options at December 31, 2000 and 1999 was immaterial.

At December 31, 2000, MKS had $15,719,000 related to short-term borrowings denominated in Japanese yen. The carrying value of these short-term borrowings approximates fair value due to their short period to maturity. Assuming a hypothetical 10% adverse change in the Japanese yen to U.S. dollar year end exchange rate, the fair value of these short-term borrowings would increase by $1,746,000. The potential increase in fair value was estimated by calculating the fair value of the short-term borrowings at December 31, 2000 and comparing that with the fair value using the hypothetical year end exchange rate.

At December 31, 1999, MKS had $12,423,000 related to short-term borrowings denominated in Japanese yen. The carrying value of these short-term borrowings approximated fair market value due to their short period to maturity. Assuming a hypothetical 10% adverse change in the Japanese yen to U.S. dollar year end exchange rate in 1999, the fair value of these short-term borrowings would have increased by $1,381,000. The potential increase in fair value was estimated by calculating the fair value of the short-term borrowings at December 31, 1999 and comparing that with the fair value using the hypothetical year end exchange rate.

INTEREST RATE RISK

MKS is exposed to fluctuations in interest rates in connection with its variable rate term loans. In order to minimize the effect of changes in interest rates on earnings, MKS entered into an interest rate swap that fixed the interest rate on its variable rate term loans. Under the swap agreement, MKS pays a fixed rate of 5.85% on the notional amount and receives LIBOR. At December 31, 2000 and 1999, the notional amount of the interest rate swap was equal to the principal amount of the variable rate term loans. The potential increase in the fair value of term loans resulting from a hypothetical 10% decrease in interest rates, after adjusting for the interest rate swap, was not material.

Due to its short-term duration, the fair value of the Company's cash and investment portfolio at December 31, 2000 and 1999 approximated its carrying value. Interest rate risk was estimated as the potential decrease in fair value resulting from a hypothetical 10% increase in interest rates for securities contained in the investment portfolio. The resulting hypothetical fair value was not materially different from the year-end carrying values.

ITEM 2. PROPERTIES

As of December 31, 2000, the following table provides information concerning MKS' principal and certain other owned and leased facilities:

LOCATION	SQ. FT.	ACTIVITY	PRODUCTS MANUFACTURED	LEASE EXPIRES
Andover, Massachusetts	82,000	Headquarters, Manufacturing, Customer Support and Research & Development	Pressure Measurement and Control Products	(1)

Austin, Texas	8,000	Sales, Customer Support and Service	Not applicable	4/30/03
Boulder, Colorado	119,000	Manufacturing, Customer Support, Service and Research & Development	Vacuum Products	(2)
Cheshire, U.K	13,000	Manufacturing, Sales, Customer Support and Service	Materials Delivery and Analysis Products	(3)
Lawrence, Massachusetts	40,000	Manufacturing	Pressure Measurement and Control Products	(1)
Le Bourget, France	14,000	Sales, Customer Support and Service	Not applicable	(1)
Methuen, Massachusetts	85,000	Manufacturing, Customer Support, Service and Research & Development	Pressure Measurement and Control Products; Materials Delivery and Analysis Products	(1)
Morgan Hill, California	17,000	Manufacturing, Customer Support, Service and Research & Development	Materials Delivery and Analysis Products	6/30/07
Munich, Germany	14,000	Manufacturing, Sales, Customer Support, Service and Research & Development	Pressure Measurement and Control Products; Materials Delivery and Analysis Products	(1)
Richardson, Texas	15,000	Manufacturing, Sales, Customer Support and Service	Pressure Measurement and Control Products; Materials Delivery and Analysis Products	8/31/01
Riverside, California	9,800	Manufacturing, Service	Pressure Measurement and Control Products	4/30/03
Santa Clara, California	13,000	Sales, Customer Support and Service	Not applicable	(4)
Seoul, Korea	5,000	Manufacturing, Sales, Customer Support and Service	Materials Delivery and Analysis Products	5/30/02
Shropshire, UK	25,000	Manufacturing	Vacuum Products	10/19/01
Singapore	4,000	Sales, Customer Support and Service	Not applicable	2/01/03
Taiwan	2,000	Sales, Customer Support and Service	Not applicable	12/31/01
Tokyo, Japan	21,000	Manufacturing, Sales, Customer Support, Service and Research & Development	Materials Delivery and Analysis Products	(5)
Woburn, Massachusetts	3,000	Research and Development	Not applicable	8/10/03

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(1) This facility is owned by MKS.
(2) MKS leases two facilities, one has 39,000 square feet of space and a lease term which expires 10/31/01 and the other has 33,000 square feet with a lease term which expires 8/15/05. MKS also owns a third and fourth facility with 28,000 and 19,000 square feet of space, respectively.
(3) MKS leases two facilities, one has 2,000 square feet of space and a lease term which expires 10/05/09 and the second has 11,000 square feet of space and a lease term which expires 11/30/09.
(4) MKS leases two facilities, one has 4,000 square feet of space and a lease term which expires 2/28/03 and the second has 3,800 square feet and a lease term which expires 4/30/02. MKS owns another facility with 6,700 square feet of space.
(5) MKS leases one facility with 4,000 square feet of space on a month-to-month basis, a second facility of 4,000 square feet with a lease term which expires on 1/30/03. MKS owns a third facility of 5,000 square feet.

In addition to manufacturing and other operations conducted at the foregoing leased or owned facilities, MKS provides worldwide sales, customer support and services from various other leased facilities throughout the world not listed in the table above. See "Business -- Sales, Marketing and Support."

ITEM 3. LEGAL PROCEEDINGS

None.

ITEM 4. SUBMISSION OF MATTERS TO A VOTE OF SECURITY HOLDERS

No matters were submitted to a vote of security holders during the fourth quarter of fiscal 2000 through the solicitation of proxies or otherwise.

PART II

ITEM 5. MARKETS FOR COMMON EQUITY AND RELATED STOCKHOLDERS MATTERS

The information required by this item is set forth under the caption "Supplemental Stockholder Information" on page 27 of our 2000 Annual Report and is incorporated herein by reference and is filed herewith as Exhibit 13.1.

ITEM 6. SELECTED CONSOLIDATED FINANCIAL DATA

The information required by this item is set forth under the caption "Selected Consolidated Financial Data" on page 14 of our 2000 Annual Report and is incorporated herein by reference and is filed herewith as Exhibit 13.1.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATION

The information required by this item is set forth under the caption "Management's Discussion and Analysis of Financial Condition and Results of Operation" on pages 15 through 20 of our 2000 Annual Report and is incorporated herein by reference and is filed herewith as Exhibit 13.1.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

The information required by this item is set forth under the caption "Market Risk and Sensitivity Analysis" on page 26 of our 2000 Annual Report and is incorporated herein by reference and is filed herewith as Exhibit 13.1.

ITEM 8. FINANCIAL STATEMENTS

The consolidated financial statements, together with the report thereon of PricewaterhouseCoopers LLP, Independent Accountants, dated January 26, 2001, and appearing on pages 28 through 48 of our 2000 Annual Report is incorporated herein by reference and is filed herewith as Exhibit 13.1.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

PART III

ITEM 10. DIRECTORS AND OFFICERS OF THE REGISTRANT

The information required by this item is set forth under the captions "Election of Directors" and "Executive Officers" in our Proxy Statement for the 2001 Annual Meeting of Stockholders and is incorporated herein by reference.

ITEM 11. EXECUTIVE COMPENSATION

The information required by this item is set forth under the caption "Executive Compensation" in our Proxy Statement for the 2001 Annual Meeting of Stockholders and is incorporated herein by reference.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The information required by this item is set forth under the caption "Security Ownership of Certain Beneficial Owners and Management" in our Proxy Statement for the 2001 Annual Meeting of Stockholders and is incorporated herein by reference.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS

The information required by this item is set forth under the caption "Certain Relationships and Related Transactions" in our Proxy Statement for the 2001 Annual Meeting of Stockholders and is incorporated herein by reference.

PART IV

ITEM 14. EXHIBITS, FINANCIAL STATEMENT SCHEDULES, AND REPORTS ON FORM 8-K

(a) The following documents are filed as part of this report

(1) Financial Statements:

MKS INSTRUMENTS, INC.

INDEX TO FINANCIAL STATEMENTS

The consolidated financial statements, together with the report thereon of PricewaterhouseCoopers LLP dated January 26, 2001, appearing on pages 28 to 48 of the accompanying 2000 Annual Report to Shareholders are incorporated by reference in this Form 10-K Annual Report. With the exception of the aforementioned information and the information incorporated in Items 5, 6, 7, 7A and 8, the 2000 Annual Report to Shareholders is not to be deemed filed as part of this Form 10-K Annual Report.

(2) Financial Statement Schedule:

The following financial statement schedule of MKS Instruments, Inc. for the years ended December 31, 2000, 1999 and 1998 is filed as part of this Form 10-K and should be read in conjunction with our Consolidated Financial Statements included in Item 8 of this Report on Form 10-K.

Schedule II - Valuation And Qualifying Accounts

DESCRIPTION	COLUMN A BALANCE AT BEGINNING OF YEAR	COLUMN B CHARGED TO COSTS AND EXPENSES	COLUMN C CHARGED TO OTHER ACCOUNTS	COLUMN D DEDUCTIONS	COLUMN E BALANCE AT END OF YEAR
Year ended December 31, 1998:					
Allowance for doubtful accounts	$ 610,000	$253,000	$ ---	$207,000	$ 656,000
Year Ended December 31, 1999:					
Allowance for doubtful accounts	$656,000	$257,000	$ ---	$(21,000)	$ 934,000
Year Ended December 31, 2000:					
Allowance for doubtful accounts	$934,000	$ 231,000	$ ---	$(32,000)	$1,197,000

Report of Independent Accountants on Financial Statement Schedule

To the Board of Directors
of MKS Instruments, Inc.:

Our audits of the consolidated financial statements referred to in our report dated January 26, 2001 appearing in the 2000 Annual Report to Shareholders of MKS Instruments, Inc. (which report and consolidated financial statements are incorporated by reference in this Annual Report on Form 10-K) also included an audit of the financial statement schedule listed in Item 14(a)(2) of this Form 10-K. In our opinion, this financial statement schedule presents fairly, in all material respects, the information set forth therein when read in conjunction with the related consolidated financial statements.

PricewaterhouseCoopers LLP

Boston, Massachusetts
January 26, 2001

All other financial statement schedules have been omitted because they are inapplicable, not required, or the information is included elsewhere in the Consolidated Financial Statements or Notes thereto.

(3) Exhibits:

(a) The Exhibits listed in the Exhibit Index immediately preceding such Exhibits are filed as part of this Annual Report on Form 10-K.

EXHIBIT NO.	TITLE
+3.2(1)	Restated Articles of Organization
+3.4(2)	Amended and Restated By-Laws
+4.1(2)	Specimen certificate representing the common stock
+10.1(3)	Amended and Restated 1995 Stock Incentive Plan
+10.2(2)	1996 Amended and Restated Director Stock Option Plan
+10.3(2)	1997 Director Stock Option Plan
+10.4(2)	1999 Employee Stock Purchase Plan
+10.5(4)	MKS Instruments, Inc. International Employee Stock Purchase Plan
+10.6(2)	Amended and Restated Employment Agreement dated as of December 15, 1995 between Leo Berlinghieri and the Registrant
+10.7(2)	Amended and Restated Employment Agreement dated as of December 15, 1995 between Ronald C. Weigner and the Registrant
+10.8(2)	Amended and Restated Employment Agreement dated as of December 15, 1995 between William D. Stewart and the Registrant
+10.9(5)	Employment Agreement dated as of May 17, 1999 between Peter Younger and the Registrant
+10.10(5)	Employment Agreement dated as of December 6, 1999 between Robert Klimm and the Registrant

+10.11(1)	Employment Agreement dated as of March 10, 2000 between the Registrant and Donald Smith
+10.12(1)	Employment Agreement dated as of October 18, 2000 between the Registrant and F. Thomas McNabb
+10.13(2)	Lease Agreement dated as of October 12, 1989, as extended November 1, 1998, by and between Aspen Industrial Park Partnership and the Registrant
+10.14(2)	Lease dated as of September 21, 1995 by and between General American Life Insurance Company and the Registrant
+10.15(2)	Lease dated as of January 1, 1996 between MiFuji Kanzai Co. Ltd. and the Registrant (covering Floor 5)
+10.16(2)	Lease dated as of April 21, 1997 between MiFuji Kanzai Co. Ltd. and the Registrant (covering Floors 1 and 2)
+10.17(1)	Lease dated as of August 9, 2000 between Aspen Industrial Partnership, LLP and the Registrant
+10.18(2)	Loan Agreement dated as of November 1, 1993, as last amended January 1, 2001, between Fleet National Bank (f/k/a The First National Bank of Boston) and the Registrant
+10.19(5)	Loan Agreement dated as of January 1, 2000 between Fleet National Bank (f/k/a BankBoston, N.A.), The Chase Manhattan Bank, and the Registrant
10.20	Second Amendment dated as of January 1, 2001 to First Amended and Restated Loan Agreement dated as of January 1, 2000 among Fleet National Bank (f/k/a BankBoston, N.A.), The Chase Manhattan Bank and the Registrant
10.21	Seventh Amendment dated as of the January 1, 2001 to Loan Agreement dated as of October 31, 1995 between Fleet National Bank (f/k/a The First National Bank of Boston) and the Registrant
+10.22(2)	Split-Dollar Agreement dated as of September 12, 1991 between the Registrant, John R. Bertucci and Claire R. Bertucci and Richard S. Chute, Trustees of the John R. Bertucci Insurance Trust of January 10, 1986
+10.23(2)	Split-Dollar Agreement dated as of September 12, 1991 between the Registrant, John R. Bertucci and John R. Bertucci and Thomas H. Belknap, Trustees of the Claire R. Bertucci Insurance Trust of January 10, 1986
+10.24(2)	Form of Tax Indemnification and S Corporation Distribution Agreement
10.25(6)	Amended and Restated Comprehensive Supplier Agreement dated March 13, 2001 by and between Applied Materials, Inc. and the Registrant
13.1	2000 Annual Report to Stockholders (which shall be deemed filed only with respect to those portions specifically incorporated by reference herein)
21.1	Subsidiaries of the Registrant
23.2	Consent of PricewaterhouseCoopers LLP

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+ Previously filed

(1) Incorporated by reference to the Registration Statement on Form S-4 (File No. 333-49738) filed with the Securities and Exchange Commission on November 13, 2000, as amended.

(2) Incorporated by reference to the Registration Statement on Form S-1 (file No. 333-71363) filed with the Securities and Exchange Commission on January 28, 1999, as amended.

(3) Incorporated by reference to the Registration Statement on Form S-8 (File No. 333-54490) filed with the Securities and Exchange Commission on January 29, 2001, as amended.

(4) Incorporated by reference to the Registration Statement on Form S-8 (File No. 333-31224) filed with the Securities and Exchange Commission on February 28, 2000.

(5) Incorporated by reference to the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 1999.

(6) Confidential Materials omitted and filed separately with the Securities and Exchange Commission.

(b) Reports on Form 8-K.

The Company filed a report on Form 8-K with the Securities and Exchange Commission on October 11, 2000 announcing the execution of the Agreement and Plan of Merger, dated October 2, 2000, by and between the Company, Mango Subsidiary Corp. and Applied Science and Technology, Inc.

(c) Exhibits.

The Company hereby files as exhibits to our Annual Report on Form 10-K those exhibits listed in Item 14(a)(3) above.

(d) Financial Statement Schedules.

Not Applicable.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

MKS INSTRUMENTS, INC.

By: /s/ John R. Bertucci

John R. Bertucci
Chairman of the Board of Directors
and Chief Executive Officer
(Principal Executive Officer)

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the Registrant and in the capacities and on the date indicated.

SIGNATURES	TITLE	DATE
/s/ John R. Bertucci John R. Bertucci	Chairman of the Board of Directors and Chief Executive Officer (Principal Executive Officer)	March 26, 2001
/s/ Ronald C. Weigner Ronald C. Weigner	Vice President and Chief Financial Officer (Principal Financial and Accounting Officer)	March 26, 2001
/s/ Richard S. Chute Richard S. Chute	Director	March 26, 2001
/s/ Owen W. Robbins Owen W. Robbins	Director	March 26, 2001
/s/ Robert J. Therrien Robert J. Therrien	Director	March 26, 2001
/s/ Louis P. Valente Louis P. Valente	Director	March 26, 2001
/s/ Robert R. Anderson Robert R. Anderson	Director	March 26, 2001
/s/ Hans-Jochen Kahl Hans-Jochen Kahl	Director	March 26, 2001

EXHIBIT 10.20

MKS INSTRUMENTS, INC.

SECOND AMENDMENT

TO FIRST AMENDED AND RESTATED LOAN AGREEMENT

This Second Amendment (the "Amendment") dated as of January 1, 2001 concerns the First Amended and Restated Loan Agreement dated as of January 1, 2000 (as amended, the "Loan Agreement"), among MKS Instruments, Inc. (the "Borrower"), Fleet National Bank (f/k/a BankBoston, N.A., "Fleet"), The Chase Manhattan Bank ("Chase"; hereinafter Fleet and Chase may be referred to individually as a "Lender" or collectively as the "Lenders"), and Fleet in its capacity as agent for the Lenders (in such capacity, together with any successor agent, the "Agent"). Capitalized terms used herein but not otherwise defined shall have the meanings assigned to them in the Loan Agreement.

WHEREAS, the Borrower's ability to borrow under the Loan Agreement terminated as of December 31, 2000; and

WHEREAS, the Lenders are willing, on the terms, subject to the conditions and to the extent set forth below, to extend the Borrower's ability to borrow under the Loan Agreement;

NOW, THEREFORE, the Lenders and the Borrower agree as follows:

Section 1. AMENDMENT OF THE LOAN AGREEMENT.

(A) The definitions of the following terms set forth in Section 1.1 of the Loan Agreement are hereby amended and restated as follows:

"REVOLVER TERMINATION DATE" shall mean April 30, 2001.

"TOTAL REVOLVING CREDIT COMMITMENT" shall mean a principal amount equal to $40,000,000.

(B) Section 3.1.1 of the Loan Agreement is hereby amended by deleting the reference therein to "$30,000,000" and replacing it with "the Total Revolving Credit Commitment".

(C) Section 7.1(b) of the Loan Agreement is hereby amended and restated as follows:

> (b) MERGERS, ETC. Neither the Borrower nor any Subsidiary will consolidate with or merge into any other Person or permit any other Person to consolidate with or merge into it, or acquire all or substantially all of the capital stock or assets of any Person, or sell, assign, lease or otherwise dispose of (whether in one transaction or in a series of transactions) all or substantially all of its assets to any Person, except that
>
> > (1) a Subsidiary may consolidate with or merge into the Borrower or another Subsidiary; and

(2) the Borrower or any of its Subsidiaries may acquire all or substantially all of the capital stock or assets of any Person or consolidate or merge with any Person provided (i) such Person is engaged in a line of business substantially similar to one or more of Borrower's existing lines of business, (ii) the aggregate purchase price liability incurred in any calendar year, including all contingent liabilities, when aggregated with all such acquisitions and any Investments permitted under Section 7.4(2) in any calendar year shall not exceed 25% of Consolidated Tangible Net Worth as of the end of the most recent fiscal quarter or, if 80% or more of the purchase price is paid in capital stock of the Borrower, 50% of Consolidated Tangible Net Worth as of the end of the most recent fiscal quarter and (iii) based on a pro forma calculation of the ratios set forth in Section 7.7 as of the date such acquisition is closed, assuming consolidation of the acquired business with the Borrower for the four full fiscal quarters ended immediately preceding such closing and pro forma debt and debt service payments based on scheduled principal payments, including acquisition borrowings, if any, and pro forma interest on total debt, at then prevailing borrowing rates, Borrower is in compliance with the financial covenants set forth in Section 7.7.

(D) Exhibit A of the Loan Agreement is hereby amended and restated in the form attached hereto.

Section 2. REPRESENTATIONS AND WARRANTIES. The Borrower hereby represents and warrants as follows:

(a) The execution and delivery of this Amendment and the performance of this Amendment, the Loan Agreement as amended hereby and each of the other Loan Documents, and the transactions contemplated hereby and thereby, have been authorized by all necessary corporate actions of the Borrower. This Amendment, the Loan Agreement as amended hereby and each of the other Loan Documents constitute the legal, valid and binding obligations of the Borrower, enforceable against the Borrower in accordance with their respective terms.

(b) The Borrower has all requisite corporate power and authority to execute, deliver and perform its obligations under this Amendment, the Loan Agreement as amended hereby and each of the other Loan Documents. Neither the authorization, execution, delivery or performance by the Borrower of this Amendment nor the performance of the Loan Agreement as amended hereby or any other Loan Document nor the performance of the transactions contemplated hereby or thereby violates or will violate any provision of the corporate charter or by-laws of the Borrower, or does or will, with the passage of time or the giving of notice or both, result in a breach of or a default under, or require any consent under or result in the creation of any lien, charge or encumbrance upon any property or assets of the Borrower pursuant to, any material instrument, agreement or other document to which the Borrower is a party or by which the Borrower or any of its properties may be bound or affected.

(c) The execution and delivery by the Borrower of this Amendment and the performance by the Borrower of the Loan Agreement as amended hereby and the Loan Documents do not and will not violate any provision of law or regulation applicable to the Borrower, or any writ, order or decree of any court or governmental or regulatory authority or agency applicable to the Borrower.

Section 3. LOAN DOCUMENTS. This Amendment shall be a Loan Document for all purposes.

Section 4. CONDITIONS TO EFFECTIVENESS. The effectiveness of this Amendment is conditioned on the following:

(a) The Borrower and the Lenders shall each have executed and delivered a counterpart of this Amendment;

(b) The representations and warranties contained in Article IV of the Loan Agreement shall be true and correct in all material respects as of the date hereof as though made on and as of the date hereof;

(c) No Default or Event of Default under the Loan Agreement shall have occurred and be continuing;

(d) The conditions set forth in Section 5.1(b) - (e) of the Loan Agreement shall have been met as of the date hereof, provided that for purposes thereof and Section 4.5 of the Loan Agreement, the "Balance Sheet Date" shall mean September 30, 2000 and the financial statements referred to therein shall mean the unaudited statements for the period ended September 30, 2000, that have been furnished to the Lender.

(e) The Borrower shall have paid Fleet and Chase commitment fees of $37,500 and $25,000, respectively.

Section 5. MISCELLANEOUS.

(a) On and after the date hereof, each reference in the Loan Agreement to "this Agreement" or words of like import shall mean and be deemed to be a reference to the Loan Agreement as amended hereby.

(b) Except as amended and modified hereby, the Loan Agreement is in all respects ratified and confirmed as of the date hereof, and the terms, covenants and agreements therein shall remain in full force and effect.

(c) This Amendment and the modifications to the Loan Agreement set forth herein shall be deemed to be a document executed under seal and shall be governed by and construed in accordance with the laws of The Commonwealth of Massachusetts.

(d) This Amendment may be executed in counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same document.

IN WITNESS WHEREOF, the parties have caused this Amendment to be duly executed as of the date and the year first above written.

MKS INSTRUMENTS, INC.

By: /s/ William P. Donlan

Title: Treasurer

FLEET NATIONAL BANK

By: /s/ Daniel G. Head, Jr.

Title: Director

THE CHASE MANHATTAN BANK

By: /s/ A. Neil Sweeny

Title: Vice President

EXHIBIT A

Lender	Revolving Credit Commitment	Applicable Commitment Percentage
Fleet National Bank	$24,000,000	60%
The Chase Manhattan Bank	$16,000,000	40%

REVOLVING CREDIT NOTE

$24,000,000 Boston, Massachusetts

January 1, 2001

FOR VALUE RECEIVED, MKS INSTRUMENTS, INC., a Massachusetts corporation having its principal place of business located in Andover, Massachusetts (the "Borrower"), hereby promises to pay to the order of FLEET NATIONAL BANK (the "Lender"), in its individual capacity, at the office of FLEET NATIONAL BANK, as agent for the Lender (the "Agent"), located at 100 Federal Street, Boston, Massachusetts (or at such other place or places as the Agent may designate in writing) at the times set forth in the First Amended and Restated Loan Agreement dated as of January 1, 2000, as amended now or hereafter, among the Borrower, the financial institutions party thereto (collectively, the "Lenders") and the Agent (the "Agreement" -- all capitalized terms not otherwise defined herein shall have the respective meanings set forth in the Agreement), in lawful money of the United States of America, in immediately available funds, the principal amount of TWENTY-FOUR MILLION DOLLARS ($24,000,000) or, if less than such principal amount, the aggregate unpaid principal amount of all Advances made by the Lender to the Borrower pursuant to the Agreement, on the Revolver Termination Date or such earlier date as may be required pursuant to the terms of the Agreement, and to pay interest from the date hereof on the unpaid principal amount hereof, in like money, at said office, on the dates and at the rates provided in the Agreement. All or any portion of the principal amount of Advances may be prepaid as provided in the Agreement.

If payment of all sums due hereunder is accelerated under the terms of the Agreement or under the terms of the other Loan Documents executed in connection with the Agreement, the then remaining principal amount and accrued but unpaid interest shall bear interest, which shall be payable on demand, at the rate per annum set forth in Section 2.4.2 of the Agreement. Further, in the event of such acceleration, this Revolving Credit Note shall become immediately due and payable, without presentation, demand, protest or notice of any kind, all of which are hereby waived by the Borrower.

In the event this Revolving Credit Note is not paid when due at any stated or accelerated maturity, the Borrower agrees to pay, in addition to the principal and interest, all costs of collection, including reasonable attorneys' fees, and interest thereon at the rates set forth above.

Interest hereunder shall be computed as provided in the Agreement.

This Revolving Credit Note is one of the Revolving Credit Notes referred to in the Agreement and is issued pursuant to and entitled to the benefits of the Agreement to which reference is hereby made for a more complete statement of the terms and conditions upon which the Advances evidenced hereby were or are made and are to be repaid. This Revolving Credit Note is subject to certain restrictions on transfer or assignment as provided in the Agreement. This Revolving Credit Note is issued in replacement of the Revolving Credit Note dated January 1, 2000 (the "2000 Note") issued to the Lender in the principal amount of $18,000,000 in connection with the amendment of the First Amended and Restated Loan Agreement dated as of

January 1, 2000, and the Borrower remains liable for any interest or fees under the 2000 Note unpaid as of the date hereof.

No delay or omission on the part of the Lender in exercising any right hereunder shall operate as a waiver of such right or of any other right of the Lender, nor shall any delay, omission or waiver on any one occasion be deemed a bar to or waiver of the same or any other right on any future occasion. Every maker, endorser and guarantor of this Revolving Credit Note or the obligations represented hereby waives presentment, demand, notice, protest and all other demands and notices in connection with the delivery, acceptance, performance, default or enforcement of this Revolving Credit Note, assents to any extension or postponement of the time of payment or any other indulgence, to any substitution, exchange or release of collateral and to the addition or release of any other party or person primarily or secondarily liable.

IN WITNESS WHEREOF, the Borrower has caused this Revolving Credit Note to be made, executed and delivered by its duly authorized representative under seal as of the date and year first above written.

MKS INSTRUMENTS, INC.

WITNESS:

/s/ David T. Joyce

By: /s/ William P. Donlan

Name: William P. Donlan

Title: Treasurer

REVOLVING CREDIT NOTE

$16,000,000 Boston, Massachusetts

January 1, 2001

FOR VALUE RECEIVED, MKS INSTRUMENTS, INC., a Massachusetts corporation having its principal place of business located in Andover, Massachusetts (the "Borrower"), hereby promises to pay to the order of THE CHASE MANHATTAN BANK (the "Lender"), in its individual capacity, at the office of FLEET NATIONAL BANK, as agent for the Lender (the "Agent"), located at 100 Federal Street, Boston, Massachusetts (or at such other place or places as the Agent may designate in writing) at the times set forth in the First Amended and Restated Loan Agreement dated as of January 1, 2000, as amended now or hereafter, among the Borrower, the financial institutions party thereto (collectively, the "Lenders") and the Agent (the "Agreement"-- all capitalized terms not otherwise defined herein shall have the respective meanings set forth in the Agreement), in lawful money of the United States of America, in immediately available funds, the principal amount of SIXTEEN MILLION DOLLARS ($16,000,000) or, if less than such principal amount, the aggregate unpaid principal amount of all Advances made by the Lender to the Borrower pursuant to the Agreement, on the Revolver Termination Date or such earlier date as may be required pursuant to the terms of the Agreement, and to pay interest from the date hereof on the unpaid principal amount hereof, in like money, at said office, on the dates and at the rates provided in the Agreement. All or any portion of the principal amount of Advances may be prepaid as provided in the Agreement.

If payment of all sums due hereunder is accelerated under the terms of the Agreement or under the terms of the other Loan Documents executed in connection with the Agreement, the then remaining principal amount and accrued but unpaid interest shall bear interest, which shall be payable on demand, at the rate per annum set forth in Section 2.4.2 of the Agreement. Further, in the event of such acceleration, this Revolving Credit Note shall become immediately due and payable, without presentation, demand, protest or notice of any kind, all of which are hereby waived by the Borrower.

In the event this Revolving Credit Note is not paid when due at any stated or accelerated maturity, the Borrower agrees to pay, in addition to the principal and interest, all costs of collection, including reasonable attorneys' fees, and interest thereon at the rates set forth above.

Interest hereunder shall be computed as provided in the Agreement.

This Revolving Credit Note is one of the Revolving Credit Notes referred to in the Agreement and is issued pursuant to and entitled to the benefits of the Agreement to which reference is hereby made for a more complete statement of the terms and conditions upon which the Advances evidenced hereby were or are made and are to be repaid. This Revolving Credit Note is subject to certain restrictions on transfer or assignment as provided in the Agreement. This Revolving Credit Note is issued in replacement of the Revolving Credit Note dated January 1, 2000 (the "2000 Note") issued to the Lender in the principal amount of $12,000,000 in connection with the amendment and restatement of the First Amended and Restated Loan

Agreement dated as of January 1, 2000, and the Borrower remains liable for any interest or fees under the 2000 Note unpaid as of the date hereof.

No delay or omission on the part of the Lender in exercising any right hereunder shall operate as a waiver of such right or of any other right of the Lender, nor shall any delay, omission or waiver on any one occasion be deemed a bar to or waiver of the same or any other right on any future occasion. Every maker, endorser and guarantor of this Revolving Credit Note or the obligations represented hereby waives presentment, demand, notice, protest and all other demands and notices in connection with the delivery, acceptance, performance, default or enforcement of this Revolving Credit Note, assents to any extension or postponement of the time of payment or any other indulgence, to any substitution, exchange or release of collateral and to the addition or release of any other party or person primarily or secondarily liable.

IN WITNESS WHEREOF, the Borrower has caused this Revolving Credit Note to be made, executed and delivered by its duly authorized representative under seal as of the date and year first above written.

MKS INSTRUMENTS, INC.

WITNESS:

David T. Joyce

By: /s/ William P. Donlan

Name: William P. Donlan

Title: Treasurer

EXHIBIT 10.21

MKS INSTRUMENTS, INC.

SEVENTH AMENDMENT

TO LOAN AGREEMENT

This Seventh Amendment (the "Amendment") dated as of January 1, 2001 concerns the Loan Agreement dated as of October 31, 1995 (the "Loan Agreement"), between MKS Instruments, Inc. (the "Borrower") and Fleet National Bank (f/k/a BankBoston, N.A. and The First National Bank of Boston, the "Lender"), as amended on February 23, 1996, February 4, 1997, February 3, 1998, January 28, 1999, January 1, 2000 and September 1, 2000. Capitalized terms used herein but not otherwise defined shall have the meanings assigned to them in the Loan Agreement.

WHEREAS, the Loan Agreement was previously amended to provide for covenants consistent with those set forth in the First Amended and Restated Loan Agreement among the Borrower, the Lender and The Chase Manhattan Bank (as amended, the "2000 Loan Agreement"), which is now being further amended; and

WHEREAS, the Lender and the Borrower are willing to amend the Loan Agreement to make its covenants consistent with the covenants in the 2000 Loan Agreement;

NOW, THEREFORE, the Lender and the Borrower agree as follows:

Section 1. AMENDMENT OF THE LOAN AGREEMENT. Section 7.1(b) of the Loan Agreement is hereby amended and restated as follows:

(b) MERGERS, ETC. Neither the Borrower nor any Subsidiary will consolidate with or merge into any other Person or permit any other Person to consolidate with or merge into it, or acquire all or substantially all of the capital stock or assets of any Person, or sell, assign, lease or otherwise dispose of (whether in one transaction or in a series of transactions) all or substantially all of its assets to any Person, except that

(1) a Subsidiary may consolidate with or merge into the Borrower or another Subsidiary; and

(2) the Borrower or any of its Subsidiaries may acquire all or substantially all of the capital stock or assets of any Person or consolidate or merge with any Person provided (i) such Person is engaged in a line of business substantially similar to one or more of Borrower's existing lines of business, (ii) the aggregate purchase price liability incurred in any calendar year, including all contingent liabilities, when aggregated with all such acquisitions and any Investments permitted under Section 7.4(2) in any calendar year shall not exceed 25% of Consolidated Tangible Net Worth as of the end of the most recent fiscal quarter or, if 80% or more of

the purchase price is paid in capital stock of the Borrower, 50% of Consolidated Tangible Net Worth as of the end of the most recent fiscal quarter and (iii) based on a pro forma calculation of the ratios set forth in Section 7.7 as of the date such acquisition is closed, assuming consolidation of the acquired business with the Borrower for the four full fiscal quarters ended immediately preceding such closing and pro forma debt and debt service payments based on scheduled principal payments, including acquisition borrowings, if any, and pro forma interest on total debt at then prevailing borrowing rates, Borrower is in compliance with the financial covenants set forth in Section 7.7.

Section 2. REPRESENTATIONS AND WARRANTIES. The Borrower hereby represents and warrants as follows:

(a) The execution and delivery of this Amendment and the performance of this Amendment, the Loan Agreement as amended hereby and each of the other Loan Documents, and the transactions contemplated hereby and thereby, have been authorized by all necessary corporate actions of the Borrower. This Amendment, the Loan Agreement as amended hereby and each of the other Loan Documents constitute the legal, valid and binding obligations of the Borrower, enforceable against the Borrower in accordance with their respective terms.

(b) The Borrower has all requisite corporate power and authority to execute, deliver and perform its obligations under this Amendment, the Loan Agreement as amended hereby and each of the other Loan Documents. Neither the authorization, execution, delivery or performance by the Borrower of this Amendment nor the performance of the Loan Agreement as amended hereby or any other Loan Document nor the performance of the transactions contemplated hereby or thereby violates or will violate any provision of the corporate charter or by-laws of the Borrower, or does or will, with the passage of time or the giving of notice or both, result in a breach of or a default under, or require any consent under or result in the creation of any lien, charge or encumbrance upon any property or assets of the Borrower pursuant to, any material instrument, agreement or other document to which the Borrower is a party or by which the Borrower or any of its properties may be bound or affected.

(c) The execution and delivery by the Borrower of this Amendment and the performance by the Borrower of the Loan Agreement as amended hereby and the Loan Documents do not and will not violate any provision of law or regulation applicable to the Borrower, or any writ, order or decree of any court or governmental or regulatory authority or agency applicable to the Borrower.

Section 3. LOAN DOCUMENTS. This Amendment shall be a Loan Document for all purposes.

Section 4. CONDITIONS TO EFFECTIVENESS. The effectiveness of this Amendment is conditioned on the following:

(a) The Borrower and the Lender shall each have executed and delivered a counterpart of this Amendment;

(b) The representations and warranties contained in Article IV of the Loan Agreement shall be true and correct in all material respects as of the date hereof as though made on and as of the date hereof;

(c) No Default or Event of Default under the Loan Agreement shall have occurred and be continuing;

(d) The conditions set forth in Sections 5.2-5.5 of the Loan Agreement shall have been met as of the date hereof, provided that for purposes thereof and Section 4.5 of the Loan Agreement, the "Balance Sheet Date" shall mean September 30, 2000 and the financial statements referred to therein shall mean the unaudited statements for the period ended September 30, 2000, that have been furnished to the Lender.

Section 5. MISCELLANEOUS.

(a) On and after the date hereof, each reference in the Loan Agreement to "this Agreement" or words of like import shall mean and be deemed to be a reference to the Loan Agreement as amended hereby.

(b) Except as amended and modified hereby, the Loan Agreement is in all respects ratified and confirmed as of the date hereof, and the terms, covenants and agreements therein shall remain in full force and effect.

(c) This Amendment and the modifications to the Loan Agreement set forth herein shall be deemed to be a document executed under seal and shall be governed by and construed in accordance with the laws of The Commonwealth of Massachusetts.

(d) This Amendment may be executed in counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same document.

IN WITNESS WHEREOF, the parties have caused this Amendment to be duly executed as of the date and the year first above written.

MKS INSTRUMENTS, INC.

By: /s/ William P. Donlan

Title: Treasurer

FLEET NATIONAL BANK

By: /s/ Daniel G. Head, Jr.

Title: Director

EXHIBIT 10.25

Confidential Materials omitted and filed separately with the Securities and Exchange Commission. Asterisks denote omissions.

AMENDED AND RESTATED COMPREHENSIVE SUPPLIER AGREEMENT

This Agreement dated March 13, 2001 is by and between Applied Materials, Inc., ("Applied"), a Delaware corporation, having its place of business in Santa Clara, California and Austin, Texas and MKS Instruments, (MKS), a Massachusetts corporation, having its place of business in Andover, Massachusetts.

The parties agree as follows:

Definitions

The following capitalized terms will have the following meanings:

A. "Applied" means Applied Materials, Inc., including all of its domestic and international divisions and subsidiaries.

B. MKS means MKS Instruments, including all of its divisions and subsidiaries (except HPS).

C "Item" or "items" means the good(s) or service(s) that MKS is to provide to Applied wider this Agreement, including all Applied Materials purchase orders and related agreements that are governed by this CSA, as specified from time to time by Applied and set forth in Attachment 1 and any amendments to Attachment 1.

D. "Applied's Standard Terms and Conditions of Purchase" means the terms and conditions contained in Exhibit 1 to this Agreement.

E. "Additional Provisions" means all requirements contained in this Comprehensive Supplier Agreement.

F. "Agreement" means this Comprehensive Supplier Agreement and/or the Applied's Purchase Order, and other Exhibits or Attachments to the Comprehensive Supplier Agreement and/or Purchase Order together with any Nondisclosure Agreement defined below as "NDA".

G. "Comprehensive Supplier Agreement" means the Comprehensive Supplier Agreement No.982812, including Exhibit 1, the Applied Terms and Conditions of Purchase.

H. "NDA" means any and all Nondisclosure Agreement(s) between Applied and MKS and any specific Nondisclosure Agreement that may be attached to this Agreement.

I. "Will" or "shall" have the same meaning and are used to convey an affirmative duty or obligation (i.e., a requirement).

J. "Release," or "release" means individual purchase orders, spot buys, pick cards or other orders for items issued by Applied to MKS under this Agreement

K. "Proprietary Information" means the Proprietary Information, as that term is defined by the NDA, of Applied.

L. "Confidential Information" means the Confidential Information, as that term is defined by the NDA, of Applied.

1. SCOPE

1.1 INTENTION/DESCRIPTION OF COMPREHENSIVE SUPPLIER AGREEMENT PRINCIPLES

This Comprehensive Supplier Agreement ("CSA") serves as a tool to manage the items Applied purchases from MKS as well as sub-assemblies MKS processes for Applied. Attachment 1 lists the items covered by this Agreement. Any modifications to this document will include a current list of the items covered by this CSA.

This Agreement defines the relationship and requirements between Applied and MKS to ensure a consistent supply of material that meets Applied's specifications. Decisions regarding future purchases from MKS will be based upon MKS' performance under this CSA as stated in Section 6, and their achievement toward Applied's business objectives, e.g. Hoshin goals.

1.2 MKS DETAILS

MKS Instruments	Account Manager: John Kranik
Six Shattuck Road	Sales Manager: Jeff Peters:
Andover. MA 01810	Customer Service Representative: Barbara Guthrie
Phone: (978)975-2350	Engineering Manager: Joe Maher
Fax: (978)975-0093	

1.3 ENTIRE AGREEMENT

This CSA, including the Applied Standard Terms and Conditions of Purchase (Exhibit 1) and any other Exhibits or Attachments which are incorporated by reference into this CSA, together with any NDA sets forth the entire understanding and agreement of the parties as to the subject matter of this CSA and supersedes all prior agreements, understandings, negotiations and discussions between the parties as to the subject matter. No amendment to or modification of this CSA will be binding unless in writing and signed by a duly authorized representative of both parties. In the event of any conflict between the terms of the CSA and the terms of the Exhibits and Attachments, the order of precedence shall be given first to the CSA, followed by the Applied Standard Terms and Conditions of Purchase, drawings, specifications or other technical documents.

The following lists all of the Exhibits and Attachments referenced in this agreement:

Exhibit/Attachment	Revision	Release Date
Exhibit 1	no revision	10/23/98
Attachment 1	A	10/23/98
Attachment 2	no revision	10/15/97
Attachment 3	no revision	
Attachment 4	no revision	any example - will be in contract

Exhibit/Attachment	Revision	Release Date
Attachment 5	A	4/27/98
Attachment 6	K	6/15/98
Attachment 7	no revision	
Attachment 8	n/a	
Attachment 9	n/a	
Attachment 10	no revision	
Attachment 11	no revision	
Attachment 12	no revision	
Attachment 13	no revision	
Attachment 14	n/a	
Attachment 15	n/a	
Attachment 16	no revision	
Attachment 17	no revision	8/27/98

1.4 ITEMS COVERED

In general, all Items supplied to Applied by MKS will be covered by this agreement. The list of Items covered by this CSA is shown in Attachment 1. New Items may be added to Attachment 1 upon mutual agreement between Applied and MKS. Items may be removed by Applied from Attachment 1 from time to time in accordance with this Agreement. MKS may recommend or Applied may implement removal for the following reasons without limitations:

a. Specification changes that MKS is unable to comply with
b. Quality or delivery default
c. Obsolete Items
d. Outsourcing of the parent assembly

1.5 DURATION OF AGREEMENT

This Agreement commences on and as of the date of the latter of the two signatures shown in Section 9, Effective Date, when each party has executed and delivered one or more counterparts of this CSA to the other (the "Effective Date") and will remain in effect through April 30, 2001 (the "Initial Term"). Provided that MKS has complied with all contract requirements and specifically those requirements identified in section 6.0 (Performance Management), both parties may mutually agree to expand the term of the agreement up to 24 months from the conclusion of the initial term. Any extension of this agreement will be subject to all terms and conditions of this agreement.

1.6 RESPONSIBILITIES

1.6.1 Applied Responsibilities

Applied agrees to:

- Provide demand signals to MKS as defined in section 2.5.1;
- Provide updated twenty-six week rolling forecasts to MKS;
- Measure inventory levels and scoring compliance to days-of-supply metric as stated in Section 6;
- Receive and inspect Items from MKS and measuring quality for quality metric as stated in Section 6;
- Notify MKS of any discrepancies;
- Provide suggestions on how MKS can improve its operation of this agreement;
- Make recommendations as to how MKS might reduce costs and improve the quality of Items purchased from MKS;
- Respond to any of MKS' inquiries;
- Identity, in conjunction with MKS, possible solutions to resolve any exceptions that might arise;
- Write and record action plans to resolve exceptions;
- Provide MKS with MKS performance reports;
- Meet with MKS quarterly to review its performance;

1.6.2 MKS Responsibilities

MKS agrees to fully perform all requirements of this Agreement MKS obligations include but are not limited to:

- Produce high quality and high reliability Items;
- Deliver Items on time to Applied;
- Respond in a timely manner to any of Applied's inquiries and requests;
- Continuously improve MKS' operations to better serve Applied's needs and support Applied's business objectives, e.g. Hoshin goals;
- Work with Applied to improve operation of this agreement;
- Work with Applied to reduce costs and improve the quality for all Items MKS produces for Applied;
- Review regularly the updated forecasts to adjust MKS operation for changes in Applied's plans;
- Work with Applied to resolve any exceptions that may arise;
- Complete any tasks assigned to resolve exceptions on time;
- Meet with Applied quarterly to review performance;
- Monitor and report to Applied the finished goods inventory levels of the Items listed in Attachment 1 of this Agreement.

2. LOGISTICS FRAMEWORK

2.1 OPERATION OF CSA

2.1.1 Operating calendar & holidays

This CSA operates by Applied fiscal year calendar, shown in Attachment 2. Recognized holidays are those holidays shown on Applied fiscal year calendar. Should any discrepancies between the operating calendars of Applied and MKS arise, MKS must make provisions so that Applied's operations are unaffected.

2.1.2 Flowchart of day to day operations (Reserved)

2.1.3 Forecasts

MKS' production of Items will be guided by Applied's most current 26 week rolling forecast, as provided by Applied to MKS on a weekly basis ("Applied's Forecast"). MKS will plan, manufacture, and stock inventory to meet Applied's forecast. MKS will keep each of Applied's forecasts for audit purposes for a minimum of six (6) months and may be asked to present this document for verification of authorized inventory levels. Applied's forecast is Proprietary Information to be used only by MKS to meet its obligations to Applied under this Agreement.

2.1.4 Releases

Applied may require a part or Items on an accelerated basis, either in addition to or in place of Items forecast for release or scheduled for delivery at a later date. If feasible, as determined by Applied and MKS, such Items will be provided by MKS to meet Applied's requirements. Unless otherwise agreed to by Applied, such accelerated deliveries will not affect the delivery schedule of any Items currently allocated for forecast requirements. Lead times for each accelerated release will be agreed upon by both parties. If MKS and Applied are unable to agree on delivery schedule or other terms affecting Items for accelerated delivery, Applied shall have the right to purchase or procure affected Items from other persons, without obligation to MKS.

2.1.5 Delivery Guidelines

2.1.5.1 General Delivery

MKS will exercise all efforts to meet Applied's delivery requirements on time. Shipments to Applied by MKS will be delivered in the right quantities ordered by Applied.

For part orders issued via a separate purchase order form ("Spot Buy"), deliveries will be accepted on the requested date or up to 2 days before the requested date. For Spot Buy purchases for spares, deliveries will be accepted on the requested date or up to two days before the requested date.

2.1.6 Replenishment Approach

MKS will be expected to supply Items using one or more of the following replenishment approaches:

- Bus Route

- Spot Buy

The replenishment methodology to be used for a particular Items are defined on Attachment 1. Specific delivery mechanics are outlined on Attachment 3.

2.1.7 Electronic Commerce

MKS is required to communicate with Applied using EDI ANSI X.l2 standards and encouraged to use either GElS or EDICT software.

2.1.8 Changes to Logistics

Applied may on occasion change any aspect of any logistics requirement. Applied will expect MKS to accommodate these changes to the best of its ability. MKS will be given at least three weeks notification prior to the change being implemented. Applied will then consider all claims for pricing adjustment due to the change in the logistics framework if made within the three week notification period.

2.2 SERVICE LEVELS

2.2.1 Inventory Levels

MKS, if involved in supporting lean manufacturing, is expected to have Finished Goods Inventory ("FGI") of the Items on Attachment 1 in order to manage demand fluctuations. MKS will maintain a minimum FGI of 4 weeks and a maximum of 6 weeks of each Item, for each Item identified in Attachment 1 as requiring FGI, to meet Applied's needs based on the most recent rolling forecast (see Attachment 4 for example of forecast). After MKS exhibits ability to decrease cycle times, both parties will agree to lower FGI requirements.

MKS may present a claim for "non-purchase" for payment of inventory manufactured in response to a valid Applied purchase order, or an authorized demand signal, as explained in Section 2.5.1, if Applied has not taken delivery of the FGI within 6 months from date of manufacture. This claim must be made within thirty (30) days from the end of the 6 months time frame. Applied is not responsible for payment to MKS for FGI built without a valid Applied purchase order, an authorized demand signal (as explained in Section 2.5.1), or Applied's Forecast (as explained in Section 2.1.3).

Applied will not hold any financial responsibility for FGI consisting of "off-the-shelf" Items that MKS is able to sell to other customers.

2.2.1.1 WIP Tracking

MKS is expected to monitor, track, and report their Work-In-Process ("WIP") inventory (dollars). In the future, Applied will implement regular reporting mechanisms which MKS will be expected to participate in.

2.2.1.2 Excess and Obsolete Items

Applied will not be responsible for excess and obsolete parts other than to the amounts specified above in Section 2.2.1, and in any event MKS must make all efforts to mitigate claims for "non- purchase".

In the event that MKS desires to submit a claim for reimbursement of costs associated with obsolete Applied unique build-to-print parts, MKS shall submit its claim to Applied's authorized purchasing representative within 90 days from the date Applied designated the part as obsolete. MKS' claim proposal shall be submitted in accordance with Section 26, Termination for Convenience, of Applied's Standard Terms and Conditions of Purchase.

Confidential Materials omitted and filed separately with the Securities and Exchange Commission. Asterisks denote omissions.

MKS agrees to physically dispose of the excess and obsolete parts as directed by Applied's authorized purchasing representative. Parts that are to be delivered to Applied's facilities must be delivered in accordance with the requirements of this Agreement and/or any supplemental instructions provided by Applied's authorized purchasing representative. With regard to Applied unique build-to-print parts, in lieu of delivery to Applied, Applied may elect to request MKS to destroy or otherwise scrap these parts such that these parts are non-functional MKS agrees to destroy or otherwise scrap these parts in a manner that is satisfactory to Applied and to provide Applied with a certification of destruction and/or evidence that the parts have been properly disposed of.

2.2.2 Response Requirements

Responses to the following types of inquiries are expected within the time periods in the tables below.

2.2.2.1 MKS Response Time

Inquiry Type	MKS Response Time	MKS Contact
Lead-time	1 business day	Master Planner
Technical	1 business day	Manufacturing Engineer
Quotations	1 business day	Customer Service Representative
Quality	1 business day	Quality Engineer
Price/invoice	1 business day	Customer Service Representative
Component failure & field safety	3 hours	Quality Engineer
Product Problems	1 business day	Account Manager

2.2.2.2 Applied Response Time

Inquiry Type	MKS Response Time	MKS Contact
Lead-time	1 business day	MKS Account Team Lead/Member
Technical	1 business day	MKS Account Team Lead/Member
Quality	1 business day	MKS Account Team Lead/Member
Price/invoice	1 business day	MKS Account Team Lead/Member

2.2.3 Flexibility Requirements

MKS is expected to perform regular capacity planning and to demonstrate reasonable upside/downside manufacturing flexibility in case of demand volume changes at Applied. For Bus Route Items, MKS shall be capable of manufacturing to unplanned sustained increases/decreases in demand above/below Applied's forecast as defined below. For Spot Buy Items, MKS allows the following increases/decreases to Purchase Order Quantities above/below the quantities originally requested:

Weeks until Delivery Date	[**]	[**]	[**]	[**]	[**]
Flexibility +/-	[**]	[**]	[**]	[**]	[**]

2.2.4 On-site support requirements

As determined by Applied, MKS may be asked to provide logistics, quality engineering, and new product development support on-site at Applied's facilities. At the appropriate juncture, Applied will require MKS to execute the On-site Representative Agreement prior to issuing a building badge to MKS' representatives.

2.2.5 Global Support

For the Items listed in Attachment 1, and all other Items that MKS provides to Applied, MKS will provide support globally for Applied and Applied's customers.

Technical assistance and product support services shall be provided at no additional charge during normal business hours. MKS must have an established and deployed global service capability. The required support services must be available globally, however, MKS may utilize a MKS distributor, or other -fled entity designated by MKS to meet this requirement MKS is expected to use best efforts to provide a resolution to requests for assistance.

2.2.6 Turn-around time for Repairs

MKS will supply Applied with repair Items under warranty within [**] business days from receipt of product. The [**] day cycle is not guaranteed if Applied ships repair Items in unreasonable batch sizes. MKS will supply Applied with repair Items not under warranty within [**] business days from receipt of product.

2.3 INFORMATION

2.3.1 Applied Planning Systems

MKS may be given electronic access to Applied's planning data. This access, if granted, should only be used to facilitate production and delivery of Items to support Applied's requirements. MKS' access to, and utilization of, Applied's planning data is subject to the confidentiality terms of this Agreement and any NDA.

2.3.3 Applied New Product Plans

MKS will on occasion and at Applied's discretion, be invited to forums in which Applied's new product plans are shared. Any Applied new product plans provided to MKS is subject to the confidentiality provisions of this Agreement and any NDA.

2.4 PACKAGING AND TRANSPORTATION

2.4.1 Packaging and Shipment

MKS will have all Items packaged "ready for use" in accordance with Applied's packaging specification (Attachment 6). MKS will mark and identify every item in compliance with Applied's part identification specifications and requirements (reference Attachment 6).

2.4.2 Bar Coding

All shipments should be bar coded to Applied's specifications (Attachment 5).

2.4.3 Transportation Mode

Items will be transported, FOB Origin, Freight Collect in accordance with Attachment A of Applied's Corporate Transportation Routing Guide which is provided in Attachment 7.

2.5 PAYMENT

2.5.1 Demand Signal

BUS ROUTE

Each day by 10:00 a.m., Applied sends via EDI transmission an order sheet to MS containing Applied's material requirements information. This information is organized at the part-number level and represents Applied's daily purchase from MKS. This EDI transmission constitutes an authorized demand signal.

SPOT BUY

As needed, Applied sends via fax an order sheet to MKS containing Applied's material requirements information. This information is organized at the part number level and represents an Applied purchase from MKS. This fax constitutes an authorized demand signal.

2.5.2 Invoices

Invoices shall contain the following information: purchase order number, item number, description of goods, sizes, quantities, unit prices, and extended totals in addition to any other information requested. Applied's payment of invoice does not represent unconditional acceptance of items and will be subject to adjustment for errors, shortages, or defects. Applied may at any time set off any amount owed by Applied to MKS against any amount owed by MKS or any of its affiliated companies to Applied.

All invoices must be sent directly to Accounts Payable in Austin:

Accounts Payable
Applied Materials
9700 US Highway 290 East M/S 4500
Austin, TX 78724-1199

2.5.3 Cash Discounts

Payment will be made net thirty (30) days from receipt of:

a. invoice, in form and substance acceptable to Applied, or

b. delivery and acceptance of the invoiced Item(s), whichever is later.

Confidential Materials omitted and filed separately with the
Securities and Exchange Commission. Asterisks denote omissions.

If payment is made within ten (10) days of the later of either (a) or (b) above, Applied may [**] from the invoice total as a prompt payment discount.

2.6 DISASTER RECOVERY PLAN

MKS is expected to develop and provide to Applied, upon request, reasonable information describing (provide evidence of a disaster recovery plan that includes emergency back up capacity and appropriate record protection and recovery. Furthermore, MKS represents that its information systems are year 2000 compatible and hereby grants Applied the right to verity MKS' internal processes for ensuring compliance with this provision. MKS agrees to include this same requirement in its purchase orders to its supply base and to provide reasonable efforts to verity its supply base is compliant with the requirements herein.

2.7 MANAGING EXCEPTIONS

2.7.1 Identifying constraints

MKS is responsible for anticipating inability to perform its obligations and limitations on manufacturing, delivery and other performance to meeting CSA objectives, informing Applied when those constraints occur, and initiating action plans to resolve the Constraints might typically include, but not be limited to:

a. Consumption over forecast

b. Consumption under forecast

c. Quality problems

d. Capacity/production problems

e. Secondary supplier supply-chain management problems

f. Other business issues

2.7.2 Process for Exceptions

Applied will work with MKS to determine the impact of an exception and approve and execute or disapprove the action plans in accordance with Section 24, Changes, of Applied's Standard Terms and Conditions of Purchase. MKS will notify the MKS Account Team Lead as soon as exceptions are identified.

3. QUALITY FRAMEWORK

3.1 SUPPLIER NON-CONFORMANCES AND CORRECTIVE ACTION

MKS' quality must meet all applicable Applied specifications as stated elsewhere in the Agreement (including all technical specifications and detailed drawings). MKS is required to replace or repair defective Items at MKS' expense in a timely manner. MKS are required to use the most expeditious manner possible to affect the corrections including the use of overnight delivery services for shipment of Items; at Applied's request, in certain circumstances, MKS may be asked to provide new Items in lieu of repairing a part to ensure immediate corrective action.

MKS will be notified of defects with a corrective action form, Attachment 10, to which they are expected to respond appropriately. A corrective action process to resolve non-conformances will be documented and used. In addition, MKS will participate in continuous improvement plans and programs as defined by Applied and MKS.

Should MKS fail to conform to the specifications established in this Agreement, Applied may purchase comparable items in the open market as necessary to meet its requirements. Applied may at its option charge MKS with any reasonable cost differential between the contract price and the price paid in the open market. This cost may include premium costs for expedited delivery, administrative costs incurred to process replacement purchase orders.

3.2 APPLIED NON-CONFORMANCES AND CORRECTIVE ACTION

Applied will return Items at Applied's expense that do not conform to Applied's requirements due to Applied errors. These Items will be returned for potential rework. Applied and MKS will agree in advance on "standard" repair costs (labor, Items and freight) on items not covered under warranty; the standard repair costs will be identified in the Items list (Attachment 1B).

To the extent that a "standard" repair cost has not been established, MKS will assess rework costs and timing and inform Applied before work is performed. The parties agree that MKS will inform Applied if the total price charged for repairing a part will exceed 40% of the current purchase price stated in Attachment 1.

MKS agrees to repair and return all Items within [**] business days from receipt of damaged Item. Applied shall have the right to designate certain Items for "Same Day" or "24 Hour" repair turnaround. Any premium charges for "Same Day" or "24 Hour" repair turnaround will not exceed [**] per Item.

Prior to return of repaired items to Applied, MKS will mark Items with Applied's part number, serial number, RMA number, purchase order number, range and gas (ff applicable). Applied shall bear the risk of loss or damage during transit of Items whether or not the Items meets warranty requirements.

In addition, as stated below in the quality assurance section, a corrective action process to resolve non-conformance(s) will be documented and used.

3.3 QUALITY ASSURANCE

All Items purchased under this CSA will be subject to inspection and test by Applied at appropriate time and place, including the period of manufacture and anytime prior to final acceptance. If inspection or test is made by Applied on MKS' premises, MKS will provide all reasonable facilities and assistance for the safety and convenience of Applied's inspectors at no charge to Applied. No preliminary inspection or test shall constitute acceptance. Records of all inspection work shall be kept complete and available to Applied during the performance of this order and for such further period as Applied may determine.

Certificate of Conformance (COC): MKS agrees to certify that Items have passed all production acceptance tests and configuration requirements and provide a "Certificate of Conformance" (see Attachment 16) and a Calibration Data Report that will be included with each product during shipment.

With regard to repair services, MKS shall maintain documentation evidencing that all test inspections have been performed. The documentation shall indicate the nature and number of observations made, the quantities approved and rejected as well as the nature of the corrective action take MKS' service centers shall be responsible for submitting this data for Applied's review of the delivery summaries. The data shall be submitted monthly not later than five days after the close of each of Applied's fiscal months to Applied's Contract Specialist and Applied's IBSS Repairs Purchasing Group.

At Applied's request, MKS will provide a certificate and/or a copy of the final inspection records showing compliance to applicable specifications, contract requirements and any other required documents stipulated in Applied's repair authorization. MKS also agrees to provide Applied with copies of its current procedures relative to repairs, range change and warranty repairs.

Through MKS' internal Quality Service organization, MKS will track and maintain its internal manufacturing reject rate by percentage of assemblies, and/or part per million ("TPM"). Trend reporting and corrective actions shall be furnished to Applied as requested by Applied Purchasing or Quality representatives. MKS will provide quality data in the format, as shown in Attachment 11, and as received by Applied MKS may also be required to provide reasonable additional data to support qualification and certification programs.

3.4 WARRANTY

MKS warrants that all Items delivered to Applied will be free from defects in workmanship, material, and manufacture; will comply with the requirements of this Agreement, and, where design is MKS' responsibility, will be free from defects in design. All services will be performed in a competent, professional and workmanlike manner, free from defects and in accordance with best professional practices or the like. MKS FURTHER WARRANTS ALL ITEMS PURCHASED OR REPAIRED WILL BE OF MERCHANTABLE QUALITY AND WILL BE FIT AND SUITABLE FOR THE PURPOSE INTENDED BY APPLIED. THESE WARRANTIES ARE IN ADDITION TO ALL OTHER WARRANTIES, WHETHER EXPRESSED OR IMPLIED, AND WILL SURVIVE ANY DELIVERY, INSPECTION, ACCEPTANCE, OR PAYMENT BY APPLIED. If any Items delivered by MKS do not meet the warranties specified herein or otherwise applicable, Applied may, at its option:

(i) require MKS to correct at no cost to Applied any defective or non-conforming Items by repair or replacement, or

(ii) return such defective or non-conforming Item at MKS' expense to MKS and recover from MKS the order price thereof, or

(iii) correct the defective or non-conforming Item itself or through a mutually approved third party and charge MKS with the cost of such correction

(iv) cancel the balance of the undelivered non-conforming Item and/or this CSA in accordance with Section 25, Termination for Default, of Applied's standard Terms and Conditions of Purchase.

Confidential Materials omitted and filed separately with the Securities and Exchange Commission. Asterisks denote omissions.

All warranties will run to Applied and to its customers. Applied's approval of MKS' material or design will not relieve MKS of the warranties established in this agreement. In addition, if Applied waives any drawing or specification requirement for one or more of thE goods, it will not constitute a waiver of all requirements for the remaining goods to be delivered unless stated by Applied in writing.

3.5 OTHER QUALITY PROGRAMS

3.5.1 MKS' Quality System

MKS' quality system must be in compliance with ISO 9000. If MKS is not currently ISO 9000 certified, MKS must provide their documented plans to achieve certification with a tune that is mutually agreeable to both parties. MKS also agrees to participate in the SSQA development and implementation plan.

3.5.2 MKS' Process Quality

Applied Materials requirements and workmanship standards shall be integrated into MKS' processes and identified accordingly. MKS shall identify the critical processes effecting the product quality and develop a validated list of the critical processes by discussing with Applied Materials. All data generated as a result of the critical manufacturing processes shall be collected, processed and used for process control and continuous improvement Evidence of process control of critical processes is a requirement and the presence of control charts and statistical process control is required. Processes not exhibiting a Cpk of 1.33 will require a formal corrective action plan to achieve the required process control. The critical manufacturing processes on pressure transducers, flow products and electronic products are:

[**]

[**]

[**]

[**]

[**]

3.5.3 Part quality containment and corrective action

When Applied Materials identifies a product non-conformance on a piece part and requests MKS to implement containment action on the part failure, MKS shall respond within [**] with a documented containment plan and shall have implemented the plan. MKS shall provide follow up to this containment plan with a closed loop corrective action identifying the root cause, a permanent fix and tune line to implement the corrective action. Applied Materials may perform a follow up audit to verify the effective implementation of the corrective action and approve the closure of the corrective action.

Applied Materials may develop or request MKS to develop Inspection Standard Sheets on identified part numbers for deployment in MKS' operation. ISS's will be deployed in final inspection, completed and records maintained as part of MKS' quality system. Template will be provided by Applied Materials supplier quality organization.

3.5.4 MKS Audits

Applied Materials will conduct the following audits, as required, to ensure a high level of quality of parts and assemblies purchased from MKS.

3.5.4.1 Source Inspection

Applied Materials may conduct source inspection at MKS' site at any time. Performance of source inspection does not waive MKS responsibility for any defects that might subsequently be identified by Applied Materials or its customers.

3.5.4.2 Piece part audits

Piece part audits may be performed at MKS' site or at Applied Materials. MKS shall identify the failure and respond commitment to contain the part failure with in [**] from notification. MKS shall also perform the root cause analysis of the failure for containment and corrective action. MKS shall agree to inform Applied Materials about the root cause, corrective action, its implementation plan and schedule with in the time period agreed upon.

3.5.4.3 Process audits

When a systemic failure trend is observed in the piece part or assembly supplied, Applied Materials or MKS shall identify the process which are causing the failure and audit the processes at MKS' site. Any deficiencies or opportunities for improvements identified from the audit will be discussed with MKS and a closed loop corrective action will be established, specifying the correction action required with a specified timeline for implementation. MKS shall agree to work on the corrective action and provide closure to all deficiencies within the time period agreed upon.

3.5.4.4 System assessment

Applied Materials, at any time may decide to perform a quality system audit at MKS' site. Any deficiencies or opportunities for improvements identified from the audit will be discussed with MKS and a closed loop corrective action will be established, specifying the corrective action required with a specified timeline for implementation. MKS shall agree to work on the corrective action and provide closure to all deficiencies within the time period agreed upon.

3.5.5 MKS' control over their subcontractors

MKS shall demonstrate control over the selection of subtier suppliers and maintain a controlled Approved Suppliers List that is supported by on site audits and completed corrective actions prior to selection and periodically to ensure the highest quality of procured parts and assemblies. MKS is required to provide Applied Materials with a quality plan for the selection, control and maintenance of subtier suppliers and will include periodic testing performed by MKS to ensure compliance to Applied Materials specifications. Quality records of MKS' subtier suppliers shall be made available, upon request, to Applied Materials for review.

3.5.6 MKS communication

MKS agrees to send a report on their quality performance on either a weekly or monthly basis the frequency and content of which is to be mutually agreed to between the quality engineering representatives from each party. Applied's quality engineer may schedule a periodic meeting with the MKS representative managing the quality to discuss the contents of MKS' quality report, parts containment, closed loop corrective action, audit findings or any other issues related to quality. MKS agrees to develop, with the help and approval of Applied Materials, a pro-active quality road map to improve their part quality to meet the Applied Materials quality goals. And the status of the effectiveness of the implementation plan will be monitored by MKS and reviewed with Applied Materials on a periodic basis.

3.5.7 Formal Quality Plan

A formal quality plan will be developed jointly by MKS and Applied Materials and will contain part and process specific requirements identified to ensure the manufacture of high quality parts. MKS will conform to all requirements of the plan. Periodic assessments of the quality plan will be performed by the Applied supplier quality engineer to ensure conformance to all requirements. The completed plan will be an attachment to this contract.

3.5.8 Pro-active Action Plans

MKS is advised to work with Applied Materials in a pro-active way on the following.

1. Work with the Quality Engineers on the manufacturing floor to receive the DMR parts as soon as possible.

2. Work with the WMO/PBG buyers in reversing the PPMs from MKS fault to Applied Materials' fault in applicable cases.

4. PRICING FRAMEWORK

4.1 PRICING BY PART NUMBER

The pricing for the Items are shown in Attachments 1A (part numbers) and 1B (service and repair). Any modifications to these must be made in accordance with Section 7 of this Agreement. MKS commits to on-going cost improvement during the period of this Agreement in accordance with Section 6.

At the time of the Agreement Effective Date, the remaining balance of undelivered items on all open purchase orders will be revised to the agreement price.

Specific circumstances may result in a review of the agreement terms, including prices. These include, but are not limited to:

Confidential Materials omitted and filed separately with the Securities and Exchange Commission. Asterisks denote omissions.

a. Volume increases resulting in an increase in agreement value of over [**] (subsequent to completion of negotiations on the existing prices);

b. Addition of Items to the agreement increasing the value of the Agreement over [**]

c. Cost reductions(savings over and above those committed in the MKS performance plan.;

d. Price reductions in accordance with Section 6,[**], of Applied's standard Terms and Conditions of Purchase.

4.2 COOPERATIVE PRICING MODELS/FORMULAS

SEE ATTACHMENT 1

4.3 VOLUME

MKS will be provided a range of potential volume that may be purchased. Applied does not commit to buy a specific volume of a part number from a MKS. Applied does not limit its ability to buy the same part number from multiple sources.

4.4 EXPORT PRICING

MKS should quote Applied in unit prices based upon delivery FCA Free carrier. MKS is expected to prepare the export paperwork and be the exporter of record. MKS must utilize Applied's preferred carriers to arrange the export of the goods. Applied will pay the freight charges based on Applied's rates with its preferred carriers. Applied will be responsible for importing the goods into the destination country.

4.5 CURRENCY

All prices are quoted in US dollars; prices for foreign manufactured Items will not be adjusted to reflect changes in the exchange rate. MKS is encouraged to obtain any necessary currency exchange protection it deems appropriate.

Notwithstanding the agreement to quote product in U.S. Dollars, the parties agree that any Applied entity operating in the same country as MKS's manufacturing plant or sales and service depots may issue orders for MKS's products using the local currency for the purposes of effecting payment. The prices will be converted to local currency as follows:

PARTS MANUFACTURED EXCLUSIVELY OUTSIDE OF THE UNITED STATES:

The U.S. Dollar prices in Attachment 1 will be converted to local currency, on a quarterly basis, using the official exchange rate listed in Bloomberg(TM) or Olsen(TM) publications. The exchange rate shall be the mid point between the bid and ask price listed at the close of the following days: January 2nd, April 1st, July 1st, October 1st.

Confidential Materials omitted and filed separately with the Securities and Exchange Commission. Asterisks denote omissions.

PARTS MANUFACTURED EXCLUSIVELY WITHIN THE UNITED STATES:

The various packaging, shipping, export and import costs associated with parts manufactured exclusively within the United States and offered for sale outside the United States will be paid by MKS as part of its normal operating expenses. In consideration for said costs, Applied agrees that MKS may increase the U.S. Dollar prices in Attachment 1 by not more than [**] prior to converting the U.S. price to the local currency price using the official exchange rate listed in Bloomberg(TM) or OIsen(TM) publications. The exchange rate shall be the mid point between the bid and ask price listed at the close of the following days: January 2nd, April 1st, July 1st, October 1st.

4.6 PROTOTYPES

MKS is committed to price all Items consistent with contract prices.

MKS agrees to provide prototype Items priced considering the total value of Applied's business with MKS. This may be accomplished in several ways, including:

a. a specific number of prototype Items may be provided free of charge

b. Items may be priced at production levels

4.7 ADVANCES FOR RAW MATERIALS

Applied does not provide advance payments for the purchase of raw materials.

5. TECHNICAL FRAMEWORK

5.1 ENGINEERING CHANGE ORDERS

Applied may change its drawings, design, and specifications at any time in accordance with Section 25, Changes, of Applied's Standard Terms and Conditions of Purchase. Applied Supplier Engineer will review with MKS all proposed Engineering Change Orders (ECO's) that impact the form, fit, or function of Items. Applied will, in writing, provide approved ECO's (refer to Attachment 12) and state the effective dates of all changes. Unless otherwise notified, Applied Receiving Inspection will inspect to the latest revision in effect at the time of receipt

MKS may request engineering changes via a MKS Problem Sheet (refer to Attachment 13). This form should be submitted to Applied Supplier Engineer. Changes shall not be implemented by MKS until written permission to proceed is given by Applied's authorized purchasing representative and the agreement is modified accordingly. Applied will consider claims for adjustment in the terms of this Agreement if made before the implementation of the changes.

5.2 TOOLING

Unless otherwise agreed to in writing, special dies, tools, patterns and drawings used in the manufacture of Items shall be furnished by and at the expense of, MKS.

5.3 DESIGN CHANGES AND RESOLUTION

For the term of this Agreement, MKS will not make changes to the design of any part that may alter form, fit, function or a significant manufacturing process without a documented engineering change request and prior written approval from Applied's authorized purchasing representative and the agreement is modified accordingly.

If Applied's design changes impact the pricing, delivery, lead-time, or other terms and conditions of this Agreement, and agreement upon alternate terms cannot be reached with MKS, then Applied may remove the subject Items from this Agreement without affecting the remaining Items.

5.4 PROCESS CHANGES AND RESOLUTION

MKS is expected to inform Applied of process and MKS changes to include changes in specifications, manufacturing locations, even when specifications are met. MKS must receive written approval in writing from Applied before implementing changes. MKS must use the specified Applied "approved" list of secondary process suppliers, where designated. The use of Applied approved secondary process suppliers does not relieve MKS of the responsibility for management of the subtier supplier and for ensuring the quality of parts received.

5.5 SUBCONTRACTING

MKS shall not subcontract for completed or substantially completed components and processes supplied to Applied without prior written approval of Applied. MKS will ensure that all subcontractors to MKS that have access (directly or indirectly) to Applied specifications must be covered by a NDA that is similar in form and substance to Applied's NDA.

5.6 FIRST ARTICLES

A new Item, Item with revised drawings, or other changes as delineated above, must have a first article evaluated and accepted by Applied (a "First Article"). An Item will not be authorized for deliveries until acceptance of the First Article by Applied. MKS will maintain First Article qualifications/evidence data file with content as defined by Applied for the specific part. First Article data is to be made available to Applied upon request and shall be retained by MKS during the performance of this Agreement or subsequent agreements.

5.7 OUTSOURCING

Applied may at its discretion elect to outsource an assembly or module to a third party ("Subassembler") and if the selected assembly or module includes any Item under this CSA (an "affected Item"), Applied will advise MKS of the Subassembler, unless precluded from doing so by confidentiality or other requirements. MKS understands that the selection and responsibility for sourcing any affected Items will generally be the responsibility of the Subassembler. If MKS is not selected as the source for an affected Item, any affected items or applicable quantities of affected Items may, at Applied's discretion, be removed from this Agreement.

5.8 PRODUCT SUPPORT

MKS agrees to provide Items, and technical and service support to Applied for all of the Items for a minimum of ten years from the date of final shipment of a part to Applied.

Alternatively, the parties may agree to establish a product support period less than ten years provided that MKS agrees to grant to Applied a non-exclusive license to make, have made, use, sell, and support the Items in a form and on terms acceptable to Applied.

5.9 COMMODITY SPECIFIC ISSUES

Reserved

5.10 TECHNOLOGY ROADMAP

Reserved

6. PERFORMANCE MANAGEMENT

6.1 SUPPLIER PERFORMANCE PLAN

As part of this Comprehensive Supplier Agreement, Applied and MKS agree to jointly develop a Supplier Performance Plan. Attachment 15 outlines the performance plan.

6.2 SUPPLIER PERFORMANCE MANAGEMENT

6.2.1 Metrics and Targets

MKS agrees to target the operational performance targets defined below. Performance targets for FY2000 are listed. Intermediate performance targets are established in the Supplier Performance Management Plan. The following defines how Applied and MKS will measure performance metrics:

Measure	Definition	Calculation	FY 1999 End Target	FY 2000 End Target
Quality ppm	Number of quality discrepancies detected prior to shipping a completed system to an end customer, expressed as parts per million	Quantity of parts with recorded DMR occurrences provided by the supplier over the prior 13-week period, divided by the total quantity of parts received from that supplier over the same period, multiplied by 1 million	[**]	[**]
Supplier Fault DMRs	Number of DMR transactions for part quality discrepancies detected in-house prior to system installation in the field	Number of DMR occurrences recorded against the supplier accumulated over the prior 13-week period	[**]	[**]

Confidential Materials omitted and filed separately with the Securities and Exchange Commission. Asterisks denote omissions.

Measure	Definition	Calculation	FY 1999 End Target	FY 2000 End Target
Late Delivery ppm	Number of parts delivered later than the agreed upon commit date	Quantity of parts received one day or more after the commit date, accumulated for each supplier over a rolling 13-week period, divided by the total quantity of parts received over the same period, multiplied by 1 million	[**]	[**]
Early Delivery ppm	Number of parts received three or more days before the commit date	Quantity of parts received three or more days before the commit date, accumulated over a rolling 13-week period, divided by the total quantity of parts received over the same period, multiplied by 1	[**]	[**]
Average Lead Time of Production Parts (Order Fulfillment Cycle Time)				
Source Cycle Time (supplier reported)	Average of the total times, from placement of an order through receipt at Applied Materials, of parts supplied to volume production (including transportation time)	The average of the number of days between order date and receipt date for all production parts recorded for the supplier, based on Austin volume production activity.	[**]	[**]
Make Cycle Time (supplier reported)	Total cycle time to source all materials required to produce an order, based on contracted parts supplied to volume production	Elapsed time, as determined through process audits and supplier self-assessments	[**]	[**]

Confidential Materials omitted and filed separately with the Securities and Exchange Commission. Asterisks denote omissions.

Measure	Definition	Calculation	FY 1999 End Target	FY 2000 End Target
Cost Reduction	Total production time required to fulfill an order, including manufacturing order release and build time, based on contracted parts supplied to volume production	Elapsed time, as determined through process audits and supplier self-assessments	[**]	[**]
	Percentage difference between the average unit price paid for materials in the prior year and price paid in the current year	Calculated for each contract by the SAT, using the method accepted by the SMO commodity group (see Attachment 17)	[**]	[**]

7. AMENDMENTS AND MODIFICATIONS

This CSA may be revised by the mutual consent of Applied and MKS. Revisions to this CSA must be in writing, signed by both Applied and MKS duly authorized representatives, traced by revision numbers and attached to this original agreement. A change to one attachment of this agreement will constitute a revision level change. The master copy of this CSA and any revisions are to be maintained by Applied.

Updates to Section 2.2, Service levels, and changes may be communicated via memos sent by mail, fax or e-mail.

8. GLOSSARY

TBD

9. ACCEPTANCE

Accepted:

/s/ Michael Berkaw	/s/ Leo Berlinghieri
Applied Materials, Inc.	MKS
Michael Berkaw	Leo Berlinghieri
Contract Specialist	VP of Customer Service
Chemical Delivery SMO	MKS Instruments
Date: 3/13/01	3/13/01

EXHIBIT 1

APPLIED MATERIALS TERMS AND CONDITIONS OF PURCHASE

1 Acceptance

The terms and conditions stated in these Applied Materials Standard Terms and Conditions of Purchase become the agreement between the parties covering the purchase of the goods or services (collectively referred to as "Items") ordered in the Purchase Agreement/Comprehensive Supplier Agreement/Basic Supplier Agreement of which these Terms and Conditions are a part when this Agreement is accepted by acknowledgment or commencement of performance. This Agreement can be accepted only in these terms and conditions. Additional or different terms proposed by Supplier will not be applicable unless accepted in writing by the Buyer. No change, modification, or revision of this Agreement will be effective unless in writing and signed by duly authorized representative of Buyer.

2. Confidential and Proprietary Information

Supplier will observe and is bound by the terms and conditions of any and all Non- Disclosure Agreements (NDAs) executed by Supplier with or for the benefit of Buyer, whether now or hereafter in effect. In addition, all schematics, drawings, specifications and manuals, and all other technical and business information provided to Supplier by Buyer during the term of, or in connection with the negotiation, performance or enforcement of this Agreement shall be deemed included in the definition (subject to any applicable exclusions therefrom) of "Proprietary Information" for purposes of this Agreement.

Supplier may use Buyer's Proprietary Information only for the purpose of providing Items, parts or components of Items or services to Buyer. Supplier will not discuss and further will not use any of Buyer's Proprietary Information, directly or indirectly, for any other purpose including, without limitation, (a) developing, designing, manufacturing, refurbishing, selling or offering for sale parts or components of Items or parts, or providing services, for or to any party other than Buyer, and (b) assisting any third party, in any manner, to perform any of the activities described herein. All Proprietary Information shall (a) be clearly marked by Supplier as Buyer's property and segregated when not in use, and (b) be returned to Buyer promptly upon request.

Supplier acknowledges and agrees that Buyer would suffer irreparable harm for which monetary damages would be an inadequate remedy if Supplier were to breach its obligations under this provision. Supplier further acknowledges and agrees that equitable relief, including injunctive relief, would be appropriate to protect Buyer's rights and interests if such a breach were to arise, or threatened, or were asserted.

Supplier will use reasonable efforts to notify Buyer of any third party requests to engage in any of the activities prohibited by this Article.

3. Intellectual Property

Nothing in this Agreement shall be deemed to grant to Supplier any license or other right under any of Buyer's intellectual property (including, without limitation, Buyer's patents, copyrights, trade and service marks, trade secrets, and Proprietary Information) for Supplier's own benefit or to provide or offer Items to any party other than Buyer.

All Items supplied by Supplier and the sale of Items by Supplier and, as applicable, use thereof by Buyer or its subsequent purchasers or transferees will be free from liability for or claim by any persons of royalties, patent rights, copyright, trademark, mechanics' liens or other encumbrances, and trade secrets or confidential or proprietary intellectual property rights (collectively "rights" and "encumbrances"), and Supplier shall defend, indemnify and hold harmless Buyer against all claims, demands, costs and actions for actual or alleged infringements of patent, copyright, trademark or trade secret rights or other rights and encumbrances in the use, sale or re-sale of any Item which are valid at the time of or after the effective date of this Agreement; except to the extent that the infringement was unavoidably caused by Supplier's compliance with a detailed design furnished and required by Buyer or by Buyer's non-compliance with Supplier's prior written advice or warning of a possible and likely infringement

At the request of Buyer, Supplier will provide to Buyer the most current and complete specifications and drawings (the "Drawings") for each Item manufactured or produced for Buyer that is based on Buyer's design or Drawings showing the complete specifications and design for the Item as manufactured or produced by Supplier. All Drawings are the sole property of Buyer.

Upon termination of this Agreement, Supplier will return all Applied Proprietary Information and documentation to Buyer. Notwithstanding this requirement, Supplier may request Buyer approval to destroy any Proprietary Information of Buyer that has become obsolete or outdated (e.g., financial projections, forecasts, et cetera); provided that Supplier certifies to Buyer the destruction of such Proprietary Information.

4. Patent License

Supplier, as part consideration for this Agreement and without further cost to Buyer, hereby grants to Buyer an irrevocable, non-exclusive, paid-up world-wide right and license to make, have made, use, and sell any inventions derivative works, improvements, enhancements, or intellectual property (the "Inventions"') made by or for Supplier in the performance of this Agreement. Supplier shall cause any employee, consultant, contractor or other persons who provides work for hire to Supplier to assign to Supplier for licensing as above of any such inventions. In addition, Buyer shall be entitled to license Buyer's customers to use such inventions during the operation of Buyer's products.

5. Press Releases/Public Disclosure Not Authorized

Supplier will not, without the prior written approval of Buyer, issue any press releases, advertising, publicity, public statements or in any way engage in any other form of public disclosure that indicates the terms of this Agreement, Buyer's relationship with Supplier or implies any endorsement by Buyer of Supplier or Supplier's products or services. Supplier further agrees not to use, without the prior written consent of Buyer, the name or trademarks (including, but not limited to Buyer's corporate symbol). Any requests under this Section must be made in writing and submitted to the parties designated by Buyer for the review and authorization of such matters.

Confidential Materials omitted and filed separately with the Securities and Exchange Commission. Asterisks denote omissions.

6. [**]

Supplier does not presently sell or offer any Item that is similar in form, fit or function to any Item to any third party for prices and terms and conditions of sale (including, without limitation, warranties, services or other benefits) (collectively, "Benefits") [**] to Buyer in this Agreement. If during the term of this Agreement,[**] for any Item than those available to Buyer under this Agreement (a "Third Party Arrangement"), Supplier will notify Buyer [**], Supplier will notify Buyer [**] and this Agreement will be deemed [**]. However, Buyer, at its option, may [**]. If any [**], Supplier will [**] that Buyer [**] from the effective date [**] shall be [**] of the effective date [**]. In no event shall Supplier quote prices to Buyer that would be unlawfully discriminatory under any applicable law.

7. Duty Drawback

Supplier will provide Buyer with U.S. Customs entry data, including information and receipts for duties paid directly or indirectly on all Items that are either imported or contain imported parts or components, that Buyer determines is necessary for Buyer to qualify for duty drawback ("Duty Drawback Information"). This data will be provided to Buyer within fifteen (15) days after each calendar quarter (or fiscal year quarter of Buyer, and be accompanied by a completed Certificate of Delivery of Imported Merchandise or Certificate of Manufacture and Delivery of Imported Merchandise (Customs Form 331) as promulgated pursuant to 19 CFR 191.

8. ODC Elimination

In the event Supplier's goods are manufactured with or contain Class I ODCs as defined under Section 602 of the Federal Clean Air Act (42 USE Section 7671 a) and implementing regulations, or if Supplier suspects that such a condition exists, Supplier shall notify Buyer prior to performing any work against this Agreement. Buyer reserves the right to: (a) terminate all Agreements for such goods without penalties, (b) to return any and all goods delivered which are found to contain or have been manufactured with Class I ODCs, or (c) to terminate any outstanding Agreements for such goods without penalties. Supplier shall reimburse Buyer all monies paid to Supplier and all additional costs incurred by Buyer in purchasing and returning such goods.

9. Compliance With Laws

Supplier warrants that no law, rule, or ordinance of the United States, a state, any other governmental agency, or that of any country has been violated in supplying the goods or services ordered herein.

10. Equal Employment Opportunity

Supplier represents and warrants that it is in compliance with Executive Agreement 11246, any amending or supplementing Executive Agreements, and implementing regulations unless exempted.

11. Applicable Law, Consent to Jurisdiction, Venue

This Agreement shall be governed by, be subject to, and be construed in accordance with the internal laws of the State of California, excluding conflicts of law rules. The parties agree that any suit arising out of this Agreement, for any claim or cause of action, whether in contract, in tort, statutory, at law or in equity, shall exclusively be brought in the United States District Court for the Northern District of California or in the Superior or Municipal Courts of Santa Clara County, California, or in the United States District Court for the Western District of Texas, Austin Division, or the Texas State District Courts of Travis County, Texas, provided that such court has jurisdiction over the subject matter of the action. Each party agrees that each of the named courts shall have personal jurisdiction over it and consents to such jurisdiction. Supplier further agrees that venue of any suit arising out of this Agreement is proper and appropriate in any of the courts identified above; Supplier consents to such venue therein as Buyer selects and to any transfer of venue that Buyer may seek to any of such courts, without respect to the initial forum.

With respect to transactions to which the 1980 United Nations Convention of Contracts for the International Sale of Goods would otherwise apply, the rights and obligations of the parties under the Agreement, including these terms and conditions, shall not be governed by the provisions of the 1980 United Nations Convention of Contracts for the International Sale of Goods; instead' applicable laws of the State of California, including the Uniform Commercial Code as adopted therein (but exclusive of such 1980 United Nations Convention) shall govern.

12. Notice of Labor Disputes

Whenever an actual or potential labor dispute, or any government embargoes, regulatory or tribunal proceedings relating thereto is delaying or threatens to delay the timely performance of this Agreement, Supplier will immediately notify Buyer of such dispute and furnish all relevant details regardless of whether said dispute arose directly, or indirectly, as a result of an actual or potential dispute within the Supplier's subtier supply base or its own operations.

13. Taxes

Unless otherwise specified, the agreed prices include all applicable federal, state, and local taxes. All such taxes shall be stated separately on Supplier's invoice.

14. Responsibility for Goods; Risk of Loss

Notwithstanding any prior inspections, Supplier shall bear all risks of loss, damage, or destruction to the Items called for hereunder until final acceptance by Buyer at Buyer's facility(s) delivery destination specified in the Agreement, which risk of loss shall not be altered by statement of any at F.O.B. point here. These Supplier responsibilities remain with respect to any Items rejected by Buyer provided, however, that in either case, Buyer shall be responsible for any loss occasioned by the gross negligence of its employees acting within the scope of their employment. Items are not accepted by reason of any preliminary inspection or test, at any location.

15. Insurance

A. Supplier shall maintain (i) comprehensive general liability insurance covering bodily injury, property damage, contractual liability, products liability and completed operations, (ii) Workers Compensation and employer's liability insurance, and (iii) auto insurance, in such amounts as are necessary to insure against the risks to Supplier's operations.

B. Minimally, Supplier will obtain and keep in force, insurance of the types and in the amounts set forth below:

Insurance	Minimum Limits of Liability
Worker's Compensation	Statutory
Employer's Liability	$1,000,000
Automobile Liability	$1,000,000 per occurrence
Comprehensive General Liability (including Products Liability)	$1,000,000 per occurrence
Umbrella/Excess Liability	$1,000,000 per occurrence

All policies must be primary and non-contributing, and shall include Buyer as an additional insured. Supplier also waives all rights of subrogation. Supplier will also require and verify that each of its subcontractors carry at least the same insurance coverage and minimum limits or insurance as Supplier carries under this Agreement. Supplier shall notify Buyer at least thirty (30) days prior to the cancellation of or implementation of any material change in the foregoing policy coverage that would affect the Buyer's interests. Upon request, Supplier shall furnish to Buyer as evidence of insurance a certificate of insurance stating that the coverage would not be canceled or materially altered without thirty (30) days prior notice to the Buyer.

16. Change of Control

Supplier will notify Buyer immediately of any change of control or change (including any change in person or persons with power to direct or cause the direction of management or policies of Seller) or any change (35% or more) in the ownership of Supplier, or of any materially adverse change in Supplier's financial condition or in the operation of Supplier's business, including, but not limited to, Supplier's net worth, assets, production capacity, properties, obligations or liabilities (fixed or contingent) (collectively, a "change of control").

17. Assignments

A. No right or obligation under this Agreement shall be assigned by Supplier without the prior written consent of Buyer, and any purported assignment without such consent shall be void.

B. Buyer may assign this Agreement in whole or part at any time if such assignment is considered necessary by Buyer in connection with a sale of Buyer's assets, or a transfer of any of its contracts or obligations under such contracts, or a transfer to a third party of manufacturing activities previously conducted by Buyer.

18. Gratuities

Supplier warrants that it has not offered or given and will not offer or give any gratuity to induce this or any other agreement. Upon Buyer's written request, an officer of Supplier shall certify in writing that Supplier has complied with and continues to comply with this Section. Any breach of this warranty shall be a material breach of each and every agreement and contract between Buyer and Supplier.

19. Insolvency

The insolvency of Supplier, the filing of a voluntary or involuntary petition for relief by or against Supplier under any bankruptcy, insolvency or like law, or the making of an assignment for the benefit of creditors, by Supplier, shall be a material breach hereof and default.

20. Waiver

In the event Buyer fails to insist on performance of any of the terms and conditions, or fails to exercise any of its rights or privileges hereunder, such failure shall not constitute a waiver of such terms, conditions, rights or privileges.

21. Disclaimer and Limitation of Liability

In no event shall Buyer be liable for any special, indirect, incidental, consequential, or contingent damages (the foregoing being collectively called "Damages"), whether or not Buyer has been advised of the possibility of such damages, for any reason. Buyer excludes and Supplier waives any liability of Buyer for any "Damages", as so defined.

22. Indemnity by Supplier

Supplier shall defend, indemnify and hold harmless Buyer from and against, and shall solely and exclusively bear and pay, any and all claims, suits, losses, penalties, damages (whether actual, punitive, consequential or otherwise) and all liabilities and the associated costs and expenses (including attorney's fees, expert's fees, and costs of investigation (all of the foregoing being collectively called "Indemnified Liabilities"), caused in whole or in part by Supplier's breach of any term or provision of this Agreement, or in whole or in any part by any negligent, grossly negligent or intentional acts, errors or omissions by Supplier, its employees, officers, agents or representatives in the performance of this Agreement or that are for, that are in the nature of, or that arise under, strict liability or products liability with respect to or in connection with the Items. The indemnity by Supplier in favor of Buyer shall extend to Buyer, its officers, directors, agents, and representatives and shall include and is intended to include Indemnified Liabilities which arise from or are caused by, in whole or in part, the concurrent negligence, including negligence or gross negligence of Supplier but shall not extend to Indemnified Liabilities to the extent such are caused by the negligence or willful misconduct of Buyer. Supplier assumes no liability under this warranty for system failures, personal injury or property damage resulting from improper operation, improper maintenance, abuse or modifications from the original product specifications or configuration on the part of Buyer, it's customers, agents and other third parties.

23. Force Majeure

A failure by either party to perform due to causes beyond the control and without the fault or negligence of the party is deemed excusable during the period in which the cause of the failure persists. Such causes may include, but not be limited to, acts of God or the public enemy, acts of the Government in either sovereign or contractual capacity, fires, floods, epidemics, strikes, freight embargoes and unusually severe weather. If the failure to perform is caused by the default of a subcontractor, and such default arises out of causes beyond the control of both the Supplier and subcontractor, and without the fault or negligence of either of them, the Supplier will not be liable for any excess cost for failure to perform, unless the supplies or services to be furnished by the subcontractor were obtainable from other sources in sufficient time to permit the Supplier to meet the required delivery releases. When Supplier becomes aware of any potential force majeure condition as described in this Agreement, Supplier shall immediately notify Buyer of the condition and provide relevant details.

24. Changes

Buyer may at anytime, by a written order and without notice to sureties or assignees, suspend performance hereunder, increase or decrease the Agreement quantities, or make changes within the general scope of this Agreement in any one or more of the following:

(a) applicable drawings, designs, or specification;

(b) method of shipment or packing, and/or;

(c) place and date of delivery;

(d) place and date of inspection or acceptance.

If any such change causes an increase or decrease in the cost of or time required for performance of the Agreement, an equitable adjustment shall be made in the Agreement price or delivery schedule, or both, and the Agreement shall be modified in writing accordingly. No claim by Supplier for adjustment hereunder shall be valid unless asserted within thirty (30) days from the date of receipt by Supplier of the notification of change, provided, however, that such period may be extended upon the written approval of Buyer. However, nothing in this clause shall excuse Supplier from proceeding with the Agreement as changed or amended.

25. Termination for Default

(a) Buyer may, by notice, terminate this Agreement in whole or in part (i) if Supplier fails to deliver goods or services on agreed delivery schedules or any installments thereof strictly within the time specified; (ii) if Supplier fails to replace or correct defective goods or services; (iii) if Supplier fails to comply strictly with any provision of, or repudiates this agreement, or (iv) Supplier defaults under, or any event or condition stated to be a default occurs under, any provision of the Agreement, including these Applied Materials Standard Terms and Conditions of Purchase.

(b) In the event of termination pursuant to this Section:

(i) Supplier shall continue to supply any portion of the Items contracted for under this Agreement that are not terminated;

(ii) Supplier shall be liable for additional costs, if any, for the purchase of such similar goods and services to cover such default;

(iii) At Buyer's request Supplier will transfer title and deliver to Buyer (1) any completed goods, (2) any partially completed goods and (3) all unique materials. Prices for partially completed goods and unique materials so accepted shall be negotiated. However, such prices shall not exceed the Agreement price per item.

(c) Buyer's rights and remedies herein or otherwise stated in this Agreement, any Purchase Order, Comprehensive Supplier Agreement or Basic Supplier Agreement are in addition to and shall not limit or preclude resort to any other rights and remedies provided by law or in equity. Termination under this Agreement shall constitute "cancellation" under the Uniform Commercial Code.

26. Termination for convenience

(a) Buyer may terminate, for convenience, work under this Agreement in whole or in part, at any time by written or electronic notice. Upon any such termination Supplier shall, to the extent and at the time specified by Buyer, stop all work on this Agreement, place no further orders hereunder, terminate work outstanding hereunder, assign to Buyer all Supplier's interests under terminated subcontracts and Agreements, settle all claims thereunder after obtaining Buyer's approval, protect all property in which Buyer has or may acquire an interest, and transfer title and make delivery to Buyer of all Items, materials, work in process, or other things held or acquired by Supplier in connection with the terminated portion of this Agreement. Supplier shall proceed promptly to comply with Buyer's directions respecting each of the foregoing without awaiting settlement or payment of its termination claim.

(b) Within six (6) months from such termination, Supplier may submit to Buyer its written claim for termination charges, in the form and with supporting data and detail prescribed by Buyer. Failure to submit such claim within the prescribed time frame and with such items shall constitute a waiver of all claims and a release of all Buyer's liability arising out of such termination.

(c) The parties may agree upon the amount to be paid Supplier for such termination. If they fail to agree, Buyer shall pay Supplier the amount due for Items delivered prior to termination and in addition thereto but without duplication, shall pay the following amounts:

(i) The contract price for all Items completed in accordance with this Agreement and not previously paid for;

(ii) The actual costs for work in process incurred by Supplier which are properly allocable or apportionable under Generally Accepted Accounting Principles (GAAP) to the terminated portion of this Agreement and a sum constituting a fair and reasonable profit on such costs. The Supplier agrees to keep true, complete, and accurate records in compliance with GAAP for the purpose of determining allocability of Suppliers costs under this agreement. Such records shall contain sufficient detail to permit a determination of the accuracy of the costs; Independent nationally recognized accountants (the "Auditor") designated by Buyer and reasonably acceptable to Supplier shall have the right, at Buyer's expense and upon reasonable notice, to conduct audits of all of the relevant books and records of Supplier in order to determine the accuracy and allocability of costs submitted by Supplier to Buyer under this provision.

(iii) The reasonable costs of Supplier in making settlement hereunder and in protecting Items to which Buyer has or may acquire an interest.

(d) Payments made under subparagraphs (c)(i) and (c)(ii) shall not exceed the aggregate price specified in this Agreement, less payment otherwise made or to be made. Buyer shall have no obligation to pay for Items lost, damaged, stolen or destroyed prior to delivery to Buyer.

(e) The foregoing paragraphs (a) to (d) inclusive, shall be applicable only to a termination for Buyer's convenience and shall not affect or impair any right of Buyer to terminate this Agreement for Supplier's default in the performance hereof.

Confidential Materials omitted and filed separately with the Securities and Exchange Commission. Asterisks denote omissions.

ATTACHMENT 1A
FIXED PRICING

PART NO	PART DESCRIPTION	UNIT PRICE
0010-00744	HE PRESSURE CONTROL (20SCCM) ASSY	$ [**]
0010-13150	ASSY, IHC CAMBER D $ SHC (20SCCM)	$ [**]
0010-13152	ASSY, IHC CHAMBERD D & SHC (50 SCCM)	$ [**]
0010-35404	IHC ASSY, 5200 MCVD CENTURA	$ [**]
0010-35650	ASSY, INDEPENDENT HELIUM CONTROL	$ [**]
0010-40240	IHC ASSY,5300 W/RSTR	$ [**]
0010-76952	ASSY, IHC CHAMBER A, B, AND C, (50 SCCM)	$ [**]
0190-18037	ASSEMBLY, DUAL IHC	$ [**]
0224-01921	XDCR, MKS, 0-100 PSI 1/4FVCR 12-32VDC 15P-D 5RA	$ [**]
0224-42759	XDUCER, PRESSUER -MKS 850 5RA G223	$ [**]
0225-10104	1 TORR VCR MONOMETER	$ [**]
0225-10105	100 TR VCR MONOMETER	$ [**]
0225-33295	XDCR, PRESS 0-10TORR, 1/2 VCR	$ [**]
0226-09052	45D BARATRON W/VCR FTG, 10 TORR 10948-1	$ [**]
0226-10754	EXDCR PRESSURE 0-10TORR, 1/2 VCR 0222-	$ [**]
0226-40111	TRANSDUCER,THRU TUBE,MKS TYPE 852,F-F,BENDIX	$ [**]
0226-41024	CABLE METER XDCR 0-100PSI 15PIN-D 27IN.L	$ [**]
0226-41187	XDCR PRESS 0-100 PSIG 1/4 VCR F/F 13-32VDC 10RA	$ [**]
0226-41188	METER XDCR 3-1/2 LCD 0-100 PSIG 13-32VDC 15 PIN-D	$ [**]
05-88029-00	CABLE SHLD W/RT ANG CON	$ [**]

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ATTACHMENT 1A
FIXED PRICING

PART NO	PART DESCRIPTION	UNIT PRICE
0620-01022	CABLE ASSY 12 COND 22AWG SHIELDED MUTLI-COLOR	$ [**]
0620-02563	CABLE ASSY SENSOR HEAD - BARATRON	$ [**]
0690-01954	BRKT SENSOR HEAD MTG	$ [**]
1040-01092	METER XDCR 3-1/2LCD 0-60PSI 12-32VCD 15PIN-D	$ [**]
1350-01005	XDCR PRESS 1TORR 8VCO-F +/-15VDC @ 250MA 45C	$ [**]
1350-01011	XDCR PRESS 0-10 TORR VCO D CONNECTOR	$ [**]
1350-01016	XDCR PRESS 10TORR 8VCO-F +/-15VDC @ 250 MA 45C	$ [**]
1350-01019	XDCR PRESS 0-10TORR 8 VCR WIRE STRIP CONN SP	$ [**]
1350-01021	XDCR PRESS 100MTORR 8VCR-F +/-15VDC @ 250MA 45C	$ [**]
1350-01025	XDCR PRESS 100TORR 8VCR-F +/-14VDC @ 250MA 45C	$ [**]
1350-01035	XDCR PRESS 0-100 TORR VCR D CONN	$ [**]
1350-01036	XDCR PRESS 0-1 TORR VCR D CONNECTOR	$ [**]
1350-01045	XDCR PRESS 10TORR 8VCR-F +/-15VDC @ 250MA 45C	$ [**]
1350-01051	XDCR PRESS BARATRON, HEATED 10 TORR	$ [**]
1350-01052	XDCR PRESS BARATRON, HEATED 100 TORR	$ [**]
1350-01055	XDCR PRESS 10 TORR CAJON 8 VCR FEMALE FTG .12%	$ [**]
1350-01072	XDCR PRESS 1000TORR 8VCR-F +/-15VDC @ 250MA 45C	$ [**]

ATTACHMENT 1A
FIXED PRICING

PART NO	PART DESCRIPTION	UNIT PRICE
1350-01075	XDCR PRESS 0-100TORR SHRT 8FVCR TERM-STRIP +/-15V	$ [**]
1350-01078	XDCR PRESS 0-250PSIA 1/4VCR-M/M 0-10VDC 6'PIGTAIL	$ [**]
1350-01079	XDCR PRESS 2TORR 8VCR-F +/-15VDC @ 250MA 45DED-C	$ [**]
1350-01083	XDCRPRESS 0-60PSIA 1/4VCR-M 12-32VDC 50DEGC 10RA	$ [**]
1350-01086	XDCR PRESS 0-1000TORR 1/4VCR-M 12-32VDC 50C 10RA	$ [**]
1350-01089	XDCR PRESS 100MTORR 1/8FVCR .25%ACC 100C 15-PDSUB	$ [**]
1350-01092	XDCR PRESS 1TORR 1/2FVCR .12%ACC 45DEG-C 15P-DSUB	$ [**]
1350-01098	XDCR PRESS 1TOR 1/2FVCR .25%ACC 100C 150-DSUB	$ [**]
1350-01101	XDCR PRESS 2-100TORR 1/2VCR-F .5%ACC +/-15VDC	$ [**]
1350-01102	XDCR PRESS 10TORR 8FVCR DCONN +/-15VDC@35MA .93"L	$ [**]
1350-01121	XDCR PRESS 0-20TORR 45C 15VDC 15P D-CONN 1/2"VCO	$ [**]
1350-01143	XDCR PRESS 1TORR RF FLTR 8FVCR +/-15VDC@250MA 45C	$ [**]
1400-01217	SNSR HEAD 1 TORR 1/4VCR W/ THERMAL BLANKER	$ [**]
3030-01050	MFC 1159 50SCCM HE 1/4VCR VITON N/C 15P-DSUB SST	$ [**]

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ATTACHMENT 1A

FIXED PRICING

PART NO	PART DESCRIPTION	UNIT PRICE
3030-01172	MFC 1159 20SCCM HE 1/4VCR VITON N/C 9P-DSUB SST	$ [**]
3870-01463	VALVE EXHAUST THROTTLE 1 3/8IDXKF40 W/KEMREZ ORING	$ [**]
3870-02311	VALVE BUTTERFLY THROTTLE W/KF 40 FLANGE	$ [**]

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ATTACHMENT 1A

AUSTIN BUSROUTE

PARTNO	PARTDESC	UNITPRICE
0010-00744	HE PRESSURE CONTROL (20SCCM) ASSY	$ [**]
0010-13150	ASSY, IHC CHAMBER D $ SHC (20SCCM)	$ [**]
0010-13152	ASSY, IHC CHAMBER D & SHC (50SCCM)	$ [**]
0010-35404	IHC ASSY,5200 MCVD CENTURA	$ [**]
0010-35650	ASSY,INDEPENDENT HELIUM CONTROL	$ [**]
0010-37643	ASSY,INDEPENDENT HELIUM CONTROL,DPS WOUT/FILTER	$ [**]
0010-40240	ICH ASSY,5300 W/RSTR	$ [**]
0010-76952	ASSY, IHC CHAMBER A,B, AND C, (50 SCCM)	$ [**]
0190-18037	ASSEMBLY, DUAL IHC	$ [**]
0620-02211	CABLE ASSY TRANSDUCER 27"LG 15P-D CONN	$ [**]
1040-01093	METER XDCR 3.1/2 LCD 0-100 PSI 13032VDC 15PIN-D	$ [**]
1350-01012	XDCR PRESS 0-100 TORR VCO D CONNECTION	$ [**]
1350-01025	XDCR PRESS 100TORR 8VCR-F +/-15VDC @ 250MA 45C	$ [**]
1350-01026	XDCR PRESS 1TORR 8VCR-F +/-15VDC @ 250MA 45C	$ [**]
1350-01027	XDCR PRESS 0-1000 TORR W/FEM #8 VCO D CONN	$ [**]
1350-01028	XDCR PRESS 2-1000 TORR CAJON 8 VCR FEM FTG	$ [**]
1350-01039	XDCR 0-10 TORR CAP MANO 1/2 VCR D-CONN	$ [**]
1350-01045	XDCR PRESS 10TORR 8VCR-F +/-15VDC @ 250MA 45C	$ [**]
1350-01067	XDCR PRESS 100MTORR 45C 15VDC 8VCR FEM FTG VERTCL	$ [**]

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ATTACHMENT 1A

AUSTIN BUSROUTE

PARTNO	PARTDESC	UNITPRICE
1350-01091	XDCR PRESS 100TORR 1/2FVCR .12%ACC 45C 15P-DSUB	$ [**]
1350-01110	XDCR PRESSURE 100TORR 1/2FVCR 15P-DSUB W/OVERPRES	$ [**]
1350-01121	XDCR PRESS 0-20TORR 45C 15VDC 15P D-CONN 1/2" VCO	$ [**]
1350-01124	XDCR PRESS SPEC CALIBRTN 10/100MTORR 1/8FVCR 1%AC	$ [**]
1350-01133	XDCR PRESS 0-100PSI 1/4VCR F/F 15P D 13-32VDC 10RA	$ [**]
1350-01138	XDCR PRESS 0-10TORR 1/2VCR FEMALE 2SET POINTS	$ [**]
1350-01141	XDCR PRESS 0-100TORR 0-10VDC OUT 1/4VCR 1% 9PD	$ [**]
1350-01143	XDCR PRESS 1TORR RF FLTR 8FVCR +/-15VDC@250MA 45C	$ [**]
1350-01212	XDCR PRESS 1TORR 1/2FVCR .12%ACC 45C HORIZ 15P-D	$ [**]
3030-01113	MFC1159 50SCCM HE 1/4VCR VITON N/C 15P-DSUB SST	$ [**]
3030-02284	MFC 1159 2SLM AR 1/4VCR VITON N/C 15P-DSUB SST	$ [**]
3870-02373	VALVE EXH THROT 1-3/9ID X KF40 W/CHMRZ ORING 15P-D	$ [**]
3920-01278	CNTRL PRESS 640 SER 10T 1/4VCR VITON CAJON MALE	$ [**]

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ATTACHMENT 1A

SANTA CLARA BUSROUTE

PARTNO	PARTDESC	UNITPRICE
0010-37643	ASSY,INDEPENDENT HELIUM CONTROL,DPS WOUT/FILTER	$ [**]
0620-02211	CABLE ASSY TRANSDUCER 27"LG 15P-D CONN	$ [**]
0720-03620	CONN ADPTR 15P-D TO 9P-HEX 1FT CABLE	$ [**]
1040-01012	METER SENSOR 0-10VDC 50/60HZMULTI-RANGE	$ [**]
1040-01092	METER XDCR 3-1/2LCD 0-60PSI 12-32VDC 15PIN-D	$ [**]
1040-01093	METER XDCR 3.1/2 LCD 0-100 PSI 13-32VDC 15PIN-D	$ [**]
1270-01803	SW PRESS FLOWTHRU -25TORR GUAGE SP 1/4MVCR 9P-D	$ [**]
1350-01012	XDCR PRESS 0-100 TORR VCO D CONNECTOR	$ [**]
1350-01026	XDCR PRESS 1TORR 8VCR-F +/-15VDC @ 250MA 45C	$ [**]
1350-01027	SDCR PRESS 0-1000 TORR W/FEM #8VCO D CONN	$ [**]
1350-01028	XDCR PRESS 2-1000 TORR CAJON 8 VCR FEM FTG	$ [**]
1350-01035	XDCR PRESS 0-100 TORR VCR D CONN	$ [**]
1350-01039	XDCR 0-10 TORR CAP MANO 1/2 VCR D-CONNN	$ [**]
1350-01054	XDCR PRESS 1000MMHG 1/8FVCR .12%ACC 45C W/SET-PT	$ [**]
1350-01055	XDCR PRESS 10 TORR CAJON 8 VCR FEMALE FTG .12%	$ [**]
1350-01067	XDCR PRESS 100MTORR 45C 15VDC 8VCR FEM FTG VERTCL	$ [**]
1350-01068	XDCR PRESS 1--,TPRR 45C 15VDC 9VCR FE, FTG HORIZT	$ [**]

Confidential Materials omitted and filed separately with the Securities and Exchange Commission. Asterisks denote omissions.

ATTACHMENT 1A

SANTA CLARA BUSROUTE

PARTNO	PARTDESC	UNITPRICE
1350-01090	XDCR PRESS 10TORR 1/8FVCR .25%ACC 100C 15P-DSUB	$ [**]
1350-01093	XDCR PRESS 1000TORR 1/4FVCR +/-12-32V 0-10VDC 9PD	$ [**]
1350-01096	XDCR PRESS 10TORR 1/4VCR-F +/-14VDC 15P-D SET-PT	$ [**]
1350-01097	XDCR PRESS 10-100TORR 1/4VCR-F +/-15VDC 15P-D	$ [**]
1350-01103	XDCR PRESS 0-60PSIA 1/4VCR-F/F 15D 12-32VDC 10RA	$ [**]
1350-01124	XDCR PRESS SPEC CALIBRTN 10/100MTORR 1/8FVCR 1%AC	$ [**]
1350-01131	XDCRPRESS 1000 TORR 1/4VCR 1% 9PIN DSUB	$ [**]
1350-01133	XDCR PRESS 0-100PSI 1/4VCR F/F 15P D 13032VDC 10RA	$ [**]
1350-0113893	XDCR PRESS 0-10TORR 1/2VCR FEMALE 2SET POINTS	$ [**]
1350-01140	XDCR PRESS 10TORR 8VCR-F +/-15VDC @ 35MA 50C	$ [**]
1350-01163	XDCR PRESS 10-100 TORR 1/4VCR-F +/-15VDC	$ [**]
3030-01113	MFC1159 50SCCM HE 1/4VCR VITON N/C 15P-DSUB SST	$ [**]
3030-01172	MFC 1159 20SCCM HE 1/4VCR VITON N/C 9P-DSUB SST	$ [**]
3870-01470	VALVE THROTTLE TVC 100MM SMART NW50 W/CNTRL HITEMP	$ [**]
3870-01512	VALVE THROTTLE TVC 50MM SMART NW50 W/CNTRL HI-TEMP	$ [**]

Confidential Materials omitted and filed separately with the
Securities and Exchange Commission. Asterisks denote omissions.

ATTACHMENT 1A

SANTA CLARA BUSROUTE

PARTNO	PARTDESC	UNITPRICE
3870-01817	VALVE EXH THRTL NW160 8.9PDX5.879ID 2CTR-BORE-HOL	$ [**]
3920-01278	CNTRL PRESS 640 SER 107 1/4VCR VITON CAJON MALE	$ [**]

ATTACHMENT 1B

SERVICE AND REPAIR

AMAT PARTNO	ITEM DESCRIPTION	MKS PARTNO	CAL PRICE	REBUILD PRICE
010-00744	HE PRESSURE CONTROL (20SCCM) ASSY	121002-G1	[**]	[**]
010-13150	ASSY, IHC CHAMBER D $ SHC (20SCCM)	121002-G2	[**]	[**]
011l0-13152	ASSY, IHC CHAMBER D & SHC (50 SCCM)	1210-02-G4	[**]	[**]
010-35404	IHC ASSY, 5200 MCVD CENTURA	202407	[**]	[**]
010-35650	ASSY, INDEPENDENT HELIUM CONTROL	202258	[**]	[**]
010-37643	ASSY, INDEPENDENT HELIUM CONTROL, DPS WOUT/FILTER	120657-G2	[**]	[**]
010-40240	IHC ASSY, 5300 W/RSTR	190094-G1	[**]	[**]
010-76952	ASSY, IHC CHAMBER A, B, AND C 50 SCCM)	121002-G3	[**]	[**]
190-18037	ASSEMBLY, DUAL IHC	202406	[**]	[**]
224-01921	XDCR, MKS, 0-100 PSI 1/4FVCR 12-32VDC 15P-5RA	852B-13384	[**]	[**]
224-42759	XDUCER, PRESSURE -MKS 850 5RA G223	850A-12951	[**]	[**]
225-10104	1 TORR VCR MONOMETER	127A-00001B	[**]	[**]
225-10105	100 TR VCR MONOMETER	127A-00100B	[**]	[**]
225-33295	XDCR, PRESS 0-10TO44,1/2VCR	122BA-00010BB	[**]	[**]
226-09052	45D BARATRON W/VCR FTG, 10 TORR 10948-1	127BA-00010BB	[**]	[**]
226-10754	EXDCR PRESSURE 0-10TORR, 1/2VC 0222-	127A-11356	[**]	[**]
226-40111	TRANSDUCER, THRU TUBE, MKS TYPE 852, F-F, BENDIX	852B61PCJ4GH	[**]	[**]
226-41024	CABLE METER XDCR O-100PSI 15PIN-D27IN.L	CB852-5-2.5	[**]	[**]

226-41187	XDCR PRESS 0-100 PSIG 1/4 VCR F/F 13-32VDC 10RA	842B12PCJ2GC	[**]	[**]
226-41188	METER XDCR 3-1/2 LCD 0-100 PSIG 13-32VDC 15 PIN-D	LDM-A12PB2CC1	[**]	[**]
6-88029-00	CABLE SHLD W/RT ANG CON	CB036-11075	[**]	[**]
620-01022	CABLE ASSY 12 COND 22AWG SHIELDED MULTI-COLOR	CB036-11016	[**]	[**]
620-02211	CABLE ASSY TRANSDUCER 27"LG 15P-D CONN	CB852-5-2.5	[**]	[**]
620-02563	CABLE ASSY SENSOR HEAD - BARATRON	CB036-11016	[**]	[**]
690-01954	BRKT SENSOR HEAD MTG		[**]	[**]
720-03620	CONN ADPTR 15P-D TO 9P-HEX 1FT CABLE	CB6551-31-1	[**]	[**]
040-01012	METER SENSOR 0-10VDC 50/60HZMULTI-RANGE	170M-6C	[**]	[**]
040-01092	METER XDCR 3-1/2CD 0-60PSI 12-32VDC 15PIN-D	LDM-A61PA2CC1	[**]	[**]
040-01093	METER XDCR 3.1/2 LCD 0-100 PSI 13-32VDC 15PIN-D	LDM-A12PA2CC1	[**]	[**]
270-01803	SW PRESS FLOWTHRU -25 TORR GAUGE SP 1/4MVCR 9P-D	42A13DCH2AA025	[**]	[**]
350-01005	XDCR PRESS 1TORR 8VCO-F +/-15VDC @ 250MA 45C	127A-00001E	[**]	[**]
350-01011	XDCR PRESS 0-10 TORR VCO D CONNECTOR	122BA-00010EB	[**]	[**]
350-01012	XDCR PRESS 0-100 TORR VCO D CONNECTOR	122BA-0010EB	[**]	[**]
350-01016	XDCR PRESS 10TORR 8VCO-F +/-15VDC @ 250MA 45C	127AA-00010E	[**]	[**]
350-01019	XDCR PRESS 0-10 TORR 8 VCR WIRE STRIP CONN SP	122A-116063	[**]	[**]
350-01021	XDCR PRESS 100MTORR 8VCR-F +/-15VDC @ 250MA 45C	127AA-000.1B	[**]	[**]
350-01025	XDCR PRESS 100TORR 8VCR-F +/-15VDC @ 250MA 45C	127A-00100B	[**]	[**]

350-01026	XDCR PRESS 1TORR 8VCR-F +/- 15VDC @ 250MA 45C	127A-00001B	[**]	[**]
350-01027	XDCR PRESS 0-1000 TORR W/FEM #8 VCO D CONN	122BA-0100EB	[**]	[**]
350-01028	XDCR PRESS 2-1000 TORR CAJON 8 VCR FEM FTG	124AA010000BB	[**]	[**]
350-01035	XDCR PRESS 0-100 TORR VCR D CONN	122BA-00100BB	[**]	[**]
350-01036	XDCR PRESS 0-1 TORR VCR D CONNECTOR	122BA-00001BB	[**]	[**]
350-01039	XDCR 0-10 TORR CAP MANO1/2VCR D-CONN	122B-11411	[**]	[**]
350-01045	XDCR PRESS 10TORR 8VCR-F +/-15 VDC @ 250MA 45C	127A-00010B	[**]	[**]
350-01051	XDCR PRESS BARATRON, HEATED 10 TORR	621C11TBFHC	[**]	[**]
350-01052	XDCR PRESS BARATRON, HEATED 1000 TORR	621C13TBFH	[**]	[**]
350-01054	XDCR PRESS 1000MMHG 1/8FVCR.12%ACC 45C W/SET-PT	624A13TBC	[**]	[**]
350-01055	XDCR 10 TORR CAJON 8 VCR FEMALE FTC.12%	627A11TBC	[**]	[**]
350-01067	XDCR PRESS 100MTORR 45C 15VDC 8VCR FEM FTG VERTCL	627A.1TBD	[**]	[**]
350-01068	XDCR PRESS 100MTORR 45C 15VDC 8VCR FEM FTG HORIZT	627A-11985	[**]	[**]
350-01072	XDCR PRESS 100OTORR 8VCR-F +/-15VDC @ 250MA 45C	127AA-0100B	[**]	[**]
350-01075	XDCR PRESS 0-100TORR SHRT 8FVCR TERM-STRIP +/-15V	122A-11064	[**]	[**]
350-01078	XDCR PRESS 0-250PSIA 1/4VCR-M/M 0-10VDC 6"PIGTAIL		[**]	[**]
350-01079	XDCR PRESS 2TORR 8VCR-F +/-15VDC @ 250MA 45DED-C	127AA-00002B	[**]	[**]
350-01083	XDCR PRESS 0-60PSIA 1/4VCR-M 12-32VDC 50DECG 10RA	852B61PCA2NC	[**]	[**]
350-01086	XDCR PRESS 0-1000TORR 1/4 VCR-M12-32VDC 50C 10RA	852BA13TCA2NC	[**]	[**]

350-01089	XDCR PRESS 100MTORR 1/8FVCR .25%ACC 100C 15P-DSUB	628A.1TBE	[**]	[**]
350-01090	XDCR PRESS 10TORR 1/8FVCR .25%ACC 100C 15P-DSUB	628A12TBC	[**]	[**]
350-01091	XDCR PRESS 100TORR 1/2FVCR .12%ACC 45C 15P-DSUB	627A12TBC	[**]	[**]
350-01092	XDCR PRESS 1TORR 1/2FVCR .12%ACC 45DEG-C 15P-DSUB	627A01TBC	[**]	[**]
350-01093	XDCR PRESS 1000TORR 1/4FVCR +/-12-32V 0-10VDC 9PD	751A-12772	[**]	[**]
350-01096	XDCR PRESS 10TORR 1/4VCR-F +/-15VDC 15P-D SET-PT	R750B11TCD2GC	[**]	[**]
350-01097	XDCR PRESS 10-100TORR 1/RVCR-F +/-15VDC 15P-D	CV7527A-01	[**]	[**]
350-01098	XDCR PRESS 1TOR 1/2FVCR .25%ACC 100C 15P-DSUB	628A01TBE	[**]	[**]
350-01101	XDCR PRESS 2-100TORR 1/2VCR-F .5%ACC +/-15VDC	124AA-00100BB	[**]	[**]
350-01102	XDCR PRESS 10TORR 8FVCR DCONN +/-15VDC@35MA .93"L	122B-12773	[**]	[**]
350-01103	XDCR PRESS 0-60PSIA 1/4VCR-F/F 15D 12-32VDC 15RA	852B61PCJ2GC	[**]	[**]
350-01110	XDCR PRESSURE 100TORR 1/2FVCR 15P-DSUB W/OVERPRE	624A-13092	[**]	[**]
350-01121	XDCR PRESS 0-20TORR 45C 15VDC 15P D-CONN 1/2"VCO	627A-13267	[**]	[**]
350-01124	XDCR PRESS SPEC CALIBRTN 10/100MTORR 1/8FVCR 1%AC	628A-13114	[**]	[**]
350-01131	XDCRPRESS 1000 TORR 1/4VCR 1% SPIN DSUB	750B13TCD2GA	[**]	[**]
350-01133	XDCR PRESS 0-100PSI 1/4VCR F/F 15P D 13-32VDC 10RA	852B12TCJ2GC	[**]	[**]
350-01138	XDCR PRESS 0-10TORR 1/2VCR FEMALE 2SET POINTS	625A-13127	[**]	[**]
350-01140	XDCR PRESS 10TORR 8VCR-F +/-15VDC @ 35MA 50C	626A11TBE	[**]	[**]

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350-01141	XDCR PRESS 0-100TORR 0-10VDC OUT 1/4VCR 1% 9PD	750B12TCD2GA	[**]	[**]
350-01143	XDCR PRESS 1TORR RF FLTR 8FVCR +/-15VDC@250MA 45C	127A-13608	[**]	[**]
350-01163	XDCR PRESS 10-100 TORR 1/4VCR-F +/-15VDC	CV7627A-05	[**]	[**]
350-01212	XDCR PRESS 1TORR 1/2FVCR .125ACC 45C HORIZ 15P-D	627A-14974	[**]	[**]
400-01217	SNSR HEAD 1 TORR 1/4VCR W/THERMAL BLANKER		[**]	[**]
3030-01050	MFC 1159 50SCMM HE 1/4VCR VITON N/C 15P-DSUB SST	1159B-00059SV-S	[**]	[**]
3030-01113	MFC1159 50SCCM HE 1/4VCR VITON N/C 15[-DSUB SST	1159B-00050RV-sp	[**]	[**]
3030-01172	MFC 1159 20SCCM HE 1/4VCR VITON N/C 9[-DSUB SST	1159B-00020RV-S	[**]	[**]
3030-02284	MFC 1159 2SLM AR 1/4VCR VITON N/C 15P-DSUB SST	1159B-02000RV-S	[**]	[**]
3870-01463	VALVE EXHAUST THROTTLE 1 3/8DXKF40 W/KEMREZ ORING	253B-11203	[**]	[**]
3870-01470	VALVE THROTTLE TVC 100MM SMART NW50 W/CINTRL HITEM	153C-1-100-2	[**]	[**]
3870-01512	VALVE THROTTLE TVC 50MM SMART NW50 W/CNTRL HI-TEM	153C-2-50--2	[**]	[**]
3870-01817	VALVE EXH THRTL NW160 8.9ODX5.87691D 2CTR-BORE-HOL	653B-13071	[**]	[**]
3870-02311	VALVE BUTTERFLY THROTTLE W/KF 40 FLANGE	253B-02311	[**]	[**]
3870-02373	VALVE EXH THROT 1-3/81D X KF40 W/CHMRZ ORIGN 15P-D	253B-11203	[**]	[**]
3920-01278	CNTRL PRESS 640 SER 10T 1/4VCR VITON CAJON MALE	640A12TW1V12-S	[**]	[**]

ATTACHMENT 2

APPLIED MATERIALS, Inc.

CORPORATE FISCAL CALENDAR

WK	M	T	W	T	F	S	S	M	T	W	T	F	S	S	WK
					1ST QUARTER							3RD QUARTER			
	NOVEMBER							MAY							
1	27	28	29	30	31	1	2	27	28	29	30	1	2	3	27
2	3	4	5	6	7	8	9	4	5	6	7	8	9	10	28
3	10	11	12	13	14	15	16	11	12	13	14	15	16	17	29
4	17	18	19	20	21	22	23	18	19	20	21	22	23	24	30
5	24	25	26	[27]	[28]	29	30								
	DECEMBER							JUNE							
6	1	2	3	4	5	6	7	[25]	26	27	28	29	30	31	31
7	8	9	10	11	12	13	14	1	2	3	4	5	6	7	32
8	15	16	17	18	19	20	21	8	9	10	11	12	13	14	33
9	22	23	24	[25]	/26/	27	28	15	16	17	18	19	20	21	34
	JANUARY							JULY							
10	/29/	/30/	/31/	[1]	/2/	3	4	22	23	24	25	26	27	28	35
11	5	6	7	8	9	10	11	29	30	1	2	[3]	4	5	36
12	12	13	14	15	16	17	18	6	7	8	9	10	11	12	37
13	19	20	21	22	23	24	25	13	14	15	16	17	18	19	38
								20	21	22	23	24	25	26	39
					2ND QUARTER							4TH QUARTER			
	FEBRUARY							AUGUST							
14	26	27	28	29	30	31	1	27	28	29	30	31	1	2	40
15	2	3	4	5	6	7	8	3	4	5	6	7	8	9	41
16	9	10	11	12	13	14	15	10	11	12	13	14	15	16	42
17	[16]	17	18	19	20	21	22	17	18	19	20	21	22	23	43
	MARCH							SEPTEMBER							
18	23	24	25	26	27	28	1	24	25	26	27	28	29	30	44
19	2	3	4	5	6	7	8	31	1	2	3	4	5	6	45
20	9	10	11	12	13	14	15	[7]	8	9	10	11	12	13	46
21	16	17	18	19	20	21	22	14	15	16	17	18	19	20	47
	APRIL							OCTOBER							
22	23	24	25	26	27	28	29	21	22	23	24	25	26	27	48
23	30	31	1	2	3	4	5	28	29	30	1	2	3	4	49
24	6	7	8	9	10	11	12	5	6	7	8	9	10	11	50
25	13	14	15	16	17	18	19	12	13	14	15	16	17	18	51
26	20	21	22	23	24	25	26	19	20	21	22	23	24	25	52

[ ] = HOLIDAYS (US ONLY) / / = SHUTDOWN (US ONLY) | | = HOLIDAYS (AMJ ONLY)

ATTACHMENT 3

DELIVERY MECHANICS

TYPE 1 PURCHASE ORDER (P.O) RELEASE

Releases against this Agreement will be made by issuing purchase orders. Delivery dates shall refer to dates of receipt at Buyer's facility. Seller will not deliver items more than five (5) calendar days in advance of Buyer's required delivery dates without prior approval.

TYPE 5 JUST-IN-TIME/BUS ROUTE MECHANICS

A. This Agreement authorizes Seller to create and maintain inventory, subject to the terms of this Agreement, for the Bus Route Program in accordance to and subject to Article 5 of the Master Purchase Order and Sales Agreement. Items to be included in the Bus Route Program are found in Attachment 1 of the Master Purchase Order and Sales Agreement.

B. Buyer will notify Seller of requirements via facsimile or EDI transmission. (Requirements may be released twice a day, seven days week, no later than 6:00 a.m. and 3:00 p.m.).

C. Seller will attach all "pick cards" to the requested material prior to shipment for easy identification by Buyer.

D. Seller shall have all items ready for pick up by Buyer's truck within three hours of receipt of requirements. Or. Seller can deliver parts to Buyer by 9:00 a.m. for morning requirements and 6:00 p.m. for afternoon requirements.

E. If the "pick card" requirement cannot be filled, Seller shall return to Buyer the pick card indicating a back order.

F. For back ordered items Seller will receive a new "pick card" the following day which will have "Back Order" written on it. The Seller should attach the material to this "pick card" with a red dot which identifies the item as a filled back order to the Buyer.

G. Seller will be paid based on Buyer's CMR Transaction Summary, and in accordance with the following, depending on Buyer's Bus Route location:

For Austin, Texas Bus Route:

THE END DATE OF EACH TRANSACTION WEEK WILL BE USED AS THE INVOICE NUMBER FOR PAYMENT OF AUSTIN BUS ROUTE INVOICES, I.E. FRIDAY, APRIL 1, 1995 WOULD BE INVOICE #040195A.

For Santa Clara, California Bus Route:

THE PRINT DATE OF THE CMR TRANSACTION SUMMARY DOCUMENT WILL BE USED AS THE INVOICE NUMBER FOR PAYMENT OF SANTA CLARA BUS ROUTE INVOICES, I.E. FRIDAY, APRIL 1, 1995 WOULD BE INVOICE #040195A.

H. Seller will maintain records of all Items shipped to Buyer to verify against Buyer's weekly accumulated usage report which will be faxed to Seller each Monday morning.

I. Buyer will make changes (quantity/price) to the transaction summary of discrepancies that occur and are validated. These changes/adjustments will be reflected on the transaction summary the following week for payment.

1. If discrepancies in pricing or quantity are found, SELLER will modify the report accordingly, and fax the corrected copy to BUYER/PLANNER.

2. If no discrepancies are found, no further action is required by SELLER, and payment will be made accordingly.

J. Buyer shall make payment to Seller in accordance with the terms established in this agreement.

ATTACHMENT 4

SUPPLIER RATING SYSTEM
PPM CALCULATIONS

WHAT THE HECK IS PPM?

The number of parts rejected or delinquent out of every million parts produced.

QUALITY

```
No. of parts rejected   15
(incoming & floor)
Divided by
No. of parts received  147
                       ---
x 1,000,000                 0.1020408 x 1,000,000 = 102,041 PPM
```

DELIVERY

```
No. of parts rec. late  44
(1 or more days)
Divided by
No. of parts received  147
                       ---
x 1,000,000                 0.2993197 x 1,000,000 = 299,320 PPM
```

SUPPLIER RATING INDEX (SRI)

Quality rating + Delivery rating
Based on 50% Quality & 50% Delivery

A number derived to establish a multiplier to use when determining the true "TOTAL COST" of a part.

SUPPLIER A	SUPPLIER B
$10.000 Quoted Price	$12.00 Quoted Price
x 1.452 Unsatisfactory	x 1.004 Outstanding
-------	-------
$14.52 TOTAL COST	$12.05 TOTAL COST

SUPPLIER QUALITY INDEX (SQI)	SUPPLIER DELIVERY INDEX (SDI)
Supplier Quality Performance	Supplier Delivery Performance

C. Lauer

ATTACHMENT 5

AMET
DISCREPANT MATERIAL REPORT (DMR)

(USE BLACK INK, PRESS HARD)

---

1. BILL NO 2. PREV. 3. DESCRIPTION

---

4. PRODUCT 5. _____ 6. WORK ORDER, ACCOUNT, OR WAREHOUSE LOCATION 7. SERIAL NO.

---

8. ORIGINATOR OR PRINT _______ 9. EMPLOYEE NO. 10. DATE

---

11. RCA REQUIRED? YES NO 12. PAGE 13. ZONE 14. DEFECT CODE 15. QTY REACTED 16. TIME

---

17. REQUIREMENTS

---

18. DISCREPANCY

---

19. WHEN FAILURE ________

---

20. DISPOSITION 21. REJECT CODE 22. _________ AMET SUPPLIER 23. HAND EXCHANGE? YES NO

LINE AS IS __________ 24. _________ 28. _________ 31. ___ WORK TIME__ 25. ________ QTY 26. STOCK CHECK YES/NO 27. STOCK LOCATION

____ WORK IN HOUSE

QTY

---

29. ______ LOT NO. 30. RTV____

---

32. SUPPLIER NAME 33. SUPPLIER NO.

---

34. FLOOR ____ (PRINT & ____) 33. EMPLOYEE NO. 36. DATE/TIME

---

39. COMMENTS:

---

40. CIRCLE ONE CONSIGN/DEBIT 41.___ CODE 42.___ P.O. 7 ITEM NO. 42. ____ QTY 43. REORDER P.O.____

SHIP VIA: (1) WILL CALL (2) COMMON (3) UPS (4) FED X (5) AIR (7) OTHER

SERVICE REQUIRED: (0) N/A (1) ONE DAY (2) OVER NIGHT (3) ECONOMY (4) OTHER

FREIGHT CHARGES: (1) PREPAY & BILL (2) PREPAY & ALLOW (3) COLLECT (4) OTHER

FOB: (1) DESTINATION (2) SHIPPING POINT (3) FACTORY (4) OTHER

---

44. ________ NAME DATE 45. ____ NO. 46. P.O. DUE DATE

---

47. ________ P.O. SHIP VIA CODE 48. ____ CODE 49. SHIPPING AUTHORIZATION NO.

---

50. ________ AUTHORIZATION COMMENTS:

---

51. COMMENTS:

---

52. SYSTEM 53. DATED ENTERED 54. ENTERED BY: 55. ACCURATE ____ 56. AUDITOR DATE

	YES	NO

ATTACHMENT 6

NONDISCLOSURE AGREEMENT
Applied Materials, Inc.

APPLIED MATERIALS, INC., a Delaware corporation (including its subsidiaries, "Applied"), having its principal offices in Santa Clara, California and MKS Instruments, Inc., a Massachusetts corporation,("Recipient") having its principal offices in Andover, Massachusetts, hereby agree as follows:

I. IDENTIFICATION OF CONFIDENTIAL INFORMATION

A. Applied may disclose to Recipient the following types of information: SEE ATTACHMENT 1.

B. The information described in A. above shall be deemed "Confidential Information" if:

(1) in the case of a written disclosure, Applied affixes to the document an appropriate legend, such as "Proprietary" or "Confidential", and

(2) in the case of an oral or visual disclosure, Applied makes a contemporaneous oral statement or delivers to Recipient a written statement within thirty (30) days to the effect that such disclosure is confidential or the like.

C. "Confidential Information" does not include information that: (1) becomes a matter of public knowledge through no fault of Recipient, (2) is rightfully received by Recipient from a third party without restriction on disclosure, (3) is independently developed by Recipient without the use of Applied's Confidential Information or (4) is in the possession of Recipient prior to its disclosure by Applied.

D. Each party's Nondisclosure Agreement ("NDA") Coordinator serve as the principal contact for the disclosure or receipt of Confidential Information. Applied's NDA Coordinator will be MICHAEL BERKLAW and Recipient's NDA Coordinator will be LEO BERLINGHIERI.

II. USE OF CONFIDENTIAL INFORMATION

Recipient shall use the Confidential Information only for the purpose of (1) determining whether to enter into a transaction with Applied, (2) purchasing or using products or services supplied by Applied or (3) providing products or services to Applied. Absent a written agreement to the contrary, all information generated or derived by Recipient in connection with any such transaction or provisions of goods or services shall be deemed Confidential Information for purposes of this Agreement.

III. RESPONSIBILITIES OF RECIPIENT

A. Recipient agrees (1) to disclose Confidential Information only to those of its employees who have a need to know such information, are informed of its confidential nature and agree to comply with this Agreement, (2) not to disclose Confidential Information to any third party, except pursuant to a lawful judicial, administrative or governmental order after providing Applied an opportunity to avoid or limit such disclosure, (3) to protect the Confidential Information with at least the degree of care with which it protects its own confidential information, but in no case with less than a reasonable degree of care and (4) to notify Applied promptly of any breach of this Agreement.

B. Within thirty (30) days of a written request by Applied, Recipient shall (1) destroy or return to Applied all documents received from Applied that contain Confidential Information, all documents it may have created that reveal or are based on any Confidential Information, and all copies of the foregoing (except for one copy which may be kept by Recipient's legal department or outside attorneys for archival purposes only), and (2) deliver to Applied a certificate stating that Recipient has complied with such requests.

IV. DISCLOSURE PERIOD AND CONFIDENTIALITY PERIOD

A. The period during which Applied may disclose Confidential Information under this Agreement shall begin on the date of the first disclosure of Confidential Information (which may be prior to the date of this Agreement) and shall end on _______ (if no date is specified, the period shall end three (3) years from the date this Agreement was signed). Either party may terminate the Agreement by giving the other party ten (10) days' written notice.

B. The obligations set forth in Articles II and III shall (1) termination five (5) years from the date of this Agreement and (2) survive the termination or expiration of this Agreement.

V. MISCELLANEOUS

A. Recipient shall not acquire intellectual property rights from Applied other than by a separate written agreement. Nothing in this Agreement shall be deemed to create any obligation to disclose Confidential Information. The Confidential Information is accepted "as is" by Recipient without any warranty of noninfringement or of any other sort by Applied or any of Applied's agents, advisers, consultants or contractors.

B. This Agreement does not create any partnership, joint venture or agency between the parties.

C. Before exporting or reexporting any Confidential Information, Recipient must comply with all applicable regulations of the U.S. Department of Commerce Office of Export Administration and/or other applicable agencies.

D. This Agreement is the complete and exclusive statement of the understanding between the parties regarding the subject matter hereof and supersedes all prior or contemporaneous communications. It may be amended only by a writing signed by both parties.

E. This Agreement shall be interpreted and enforced according to the laws of the State of California (exclusive conflict of law rules).

APPLIED MATERIALS, INC.	MKS INSTRUMENTS, INC. (Print Name of Recipient)
By: /s/ Joe Cestari	By: /s/ Leo Berlinghieri
Name (print) Joe Cestari	Name (print) Leo Berlinghieri
Title: Sr. Director-Chemical Delivery SMO Operations	Title: Corporate VP, Customer Support
Date: 5/3/96	Date: 6/12/96
	Please circle one: Customer Supplier Consultant

Attachment 7

APPLIED MATERIALS CORPORATE ROUTING GUIDE ATTACHMENT A

TRANSPORTATION AND SHIPPING REQUIREMENTS

Applied Materials Corporate Traffic Department has established excellent pricing and service programs with various transportation carriers. Using these approved carrier programs, when Applied Materials is responsible for the freight charges, will contribute to our freight cost reduction goals while continuing to provide a high level of customer satisfaction. Everyone has a responsibility to control and reduce unnecessary expenses.

Requirements for transportation and shipping are as follows:

- All freight collect shipments to Applied Materials must be routed via the appropriate Applied Materials approved carrier, see general routing instructions within the United States.

- An Applied Materials department of division number must be referenced on the carrier documentation.

- All shipments consigned to a third party at the direction of Applied Materials and Applied Materials is paying the freight charges must be routed by an approved Applied Materials carrier. All shipping documentation must indicate billing to third party (Applied Materials).

- For freight routed prepaid by third party, FOB origin, the third party will assume all risk in transit when approved Applied Materials carrier is used.

- Materials must be suitable packaged to withstand normal freight handling and movement while in transit.

- Multiple order shipping by the same carrier and service level, on the same day, must be consolidated into one shipment on one carrier document.

- Material for each purchase order must be packaged separately with it's own packing list.

- Packing lists must be attached to the outside surface of the package and visible from any position (do not hide from view if multiple packages are pelletized).

- When consolidating multiple purchase orders in one overpack carton, all inside orders must be attached to the overpack carton. Overpack carton must be clearly label to indicate multiple orders are packed inside. Each carton within the overpack must be clearly labeled.

Attachment 7

- - DO NOT DECLARE VALUE or request insurance on any freight collect shipment or third party shipments where Applied Materials is paying the freight charges unless specifically authorized.

- - Materials must be shipped in time to meet the due date shown on the purchase order. Materials will not be accepted/received earlier than three (3) days of the due date, unless specifically authorized. Materials shipped earlier will be refused and possibly returned at your expense.

- - Only use air freight at the requested level of service when specifically instructed and authorized in writing by Applied Materials.

- - Suppliers must specifically state or indicate Emergency/Overnight service on the airbill or truck bill of lading to ensure expedited delivery, and only when instructed and authorized in writing by Applied Materials.

- - All shipping documents and package address labels must reference the complete purchase order number(s) for the material included in the package(s) and shipment. When freight codes are provided they must also show on all documents.

- - Any question concerning third party billing or carrier recommendations anywhere within the United States should be addressed to Corporate Traffic Operations:

Santa Clara, California	(408) 235-6053
Outside Santa Clara, California	Toll Free 1-888-TOO-SHIP (1-888-866-7447)

ATTACHMENT 7

APPLIED MATERIALS - ROUTING GUIDE

GENERAL ROUTING INSTRUCTIONS WITHIN THE US

COMMON CARRIER (LTL) TRANSPORTATION UP TO 7,500 LBS.

WEIGHT	AMAT LOCATION OR SERVICE AREA	CARRIER
1-100 lbs.	All points.	Federal Expres - Express Saver
Over 100 lbs.	All interstate shipments.	CF Motor Freight
Over 100 lbs.	Intrastate AZ, CA, & OR	Viking Freight System
Over 100 lbs.	Intrastate Tx, except Augtin & Dallas area	Federal Express - Express Saver Freight
1-50 lbs. Over 50 lbs.	Austin & Dallas area	Sonic Air Federal Express - Express Saver
Over 100 lbs.	Intrastate MA, NY, & PA	Federal Express - Express Saver Freight

Please provide 48 hour advance notice when your shipment is over 7,500 lbs., or on shipments that require special equipment. This will enable sufficient tiem to schedule the carrier that will provide the most economical and timely service. Contact Corporate Traffic 1-888-TOO-SHIP (866-7447).

HIGH VALUE PRODUCTS, AIR RIDE OR PADDED VAN SERVICE

TWI Mayflower	Call traffic (408) 235-6053, for scheduling and transit time details.

NEXT FLIGHT OUT, MESSENGER, AND/OR COURIER SERVICE WITHIN THE US

All weights	Sonic Air call the local office, if no local office call 1-800-528-6070

AIR FREIGHT WITHIN THE US

WEIGHT	SERVICE	CARRIER
1 - 70 lbs.	Priority Overnight - 10:30 AM Next Day Priority Overnight - 3:00 PM Next Day Economy Service - 4:30 PM Second Day	Federal Express
Over 70 lbs.	Priority Overnight - 10:30 AM Next Day Standard Overnight - 4:00 PM Next Day Two Day - 4:00 PM Second Day Deferred Air - 3-5 day delivery	Eagle USA Air Freight

GENERAL ROUTING INSTRUCTIONS FOR ALL INTERNATIONAL LOCATIONS

WEIGHT	SERVICE	CARRIER
1 - 50 Kgs.	Regular Air	Federal Express
All Weights	Next Flight Out or Courier Service	Schencker International*
Over 50 Kgs.	Regular Air or Consolidation	

* Shipments over 50 Kgs. to or from Japan must be routed via Nippon Express.

ATTACHMENT 7

TRANSIT TIMES FOR U.S. CARRIERS

SELECT CARRIER BY REFERING TO GUIDANCE PROVIDED ON PAGE ONE. USE TABLE BELOW TO ENSURE TRANSIT TIME OF SERVICE MEETS DELIVERY REQUIREMENTS.

US TIMETABLE	SHIPMENT SIZE	SAME-DAY	1 DAY	2 DAYS	3 DAYS	4 DAYS	5 DAYS	6 DAYS
Sonicair Courier Next Flight Out	All - see f.	Nationwide	Nationwide					
Sonicair Ground Courier Local	All - see e.	50 miles of AMAT Sites						
Federal Express Express Saver	1-100 lbs, see d.		Up to 350 miles of origin	350 to 1,000 miles of origin	Over 1,000 miles of origin			
Federal Express Express Saver Freight	Over 151 lbs., see d.		Up to 350 miles of origin	350 to 1,000 miles of origin	Over 1,000 miles of origin		Federal Express Express Saver Service commitment by 4:30 PM or by close of business.	
Viking Freight Sys. Between CA, AZ, OR.	Over 100 lbs.		All points in CA ex Calexico. Reno, NV	CA to metro areas in AZ, NV, OR, Denver, CO	Colorado Springs, CO			
CF Motor Freight Between Santa Clara and States	Over 100 lbs.				AZ, ID, NV, OR, WA	CO, MT, NM, UT	IL, IN, KS, KY, LA, MI, MN, MO, ND, NE, OH, OK, SD, TN, WI, WY	DC, DE, FL, GA, LA, MA, MD, ME, MS, NC, NH, NJ, NY, PA, RI, SC, TX, VA, VT, WV
CF Motor Freight between Austin and States	Over 100 lbs.				AR, LA, NM, OK	AL, CO, FL, GA, IA, IL, IN, KS, KY, MI, MS, NC, SC, UT, WI, WY	AZ, CT, DC, DE, ID, MA, MD, ME, MN, MO, MT, ND, NE, NH, NJ, NV, NY, OH, OR, PA, RI, SD, TN, VA, VT, WA, MV	

a. General guidelines call 1-888-TOSHIP for additional information.
b. Viking Freight Systems use for all intrastate California LTL. Can be used for Western States Listed.
c. Express Saver Freight Program should be used for all appropriate non-local intra Texas shipments.
d. Express Saver program should be used for appropriate packages under 100 lbs.
e. Sonic Ground Courier Service can be used for sameday shipments in local area of AMAT sites in Santa Clara, Milpitas, Austin, Dallas, Phoenix, and Boston.
f. Next Flight Out service is used for extremely urgent shipments. Check with carrier for delivery commitment. Consider Federal Express or Eagle if commitment is after 10:30 AM next day.

Attachment 8

Intentionally Omitted

Attachment 9

Intentionally Omitted

ATTACHMENT 10

Applied Materials Incorporated

PRELIMINARY QNRR FORM

SUPPLIER NAME: ________________________________ DATE: _______________________

P/N: ____ SQE: ________________________

==

QNRR Number: ________________________________

==

Levels: Please check one	1.	Critical	[ ]
	2.	Major	[ ]
See Page 3 of 3 for level descriptions	3.	Minor	[ ]

==

Brief Description:

____

____

____

==

* This QNR requires corrective action (CA). Please return this form with signature to within ________ working days.

1. CA Approved: [ ]; Applied Materials must sign page 2 of 3 to confirm approval.

2. CA Disapproved: [ ]; Explain below

   Applied Materials Explain Briefly:

____

____

____

____

____

____

* Applied Materials to review CA and Approve or Disapprove based on fact. Applied Materials must inform supplier by returning this form with status checked and explained within fourteen working days.

==

==
CA to correct Discrepancy: Explain

____

____

____

____

____

____

____

==
Preventative Measures Described:

____

____

____

____

____

____

____

==
Scheduled Completion Date: ____________________________________

Supplier Signature: ____________________________________

Applied Materials Approval Signature: ____________________________________

==

ATTACHMENT 10

Applied Materials Incorporated

LEVELS OF CORRECTIVE ACTION

LEVEL		NATURE
1.	CRITICAL	HAZARDOUS TO HUMAN SAFETY; OR VITAL TO FUNCTIONALITY OF END PRODUCT THUS NON-CONFORMANCE IN MEETING THE REQUIRED SPECIFICATIONS AND CONTRACTUAL AGREEMENTS. EXAMPLES: IMPROPER HEAT TREATEMENT OF CERAMIC MECHNICAL MOTOR MECHANISM, INOPERATIVE BRAKING SYSTEM, EXPLOSIVE COMPONENTS, ETC.
2.	MAJOR	A NON-CONFORMANCE RELATED TO THE REQUIRED FUNCTIONALITY SPECIFICATIONS AND/OR NON-CONFORMANCE TO CONTRACTUAL AGREEMENTS. EXAMPLES: CHEMICAL REACTION (RUST), INOPERATIVE MECHANISM, PCBAS.
3.	MINOR	A NON-CONFORMANCE TO THE FUNCTIONALITY OF PARTS/MECHANISMS WHICH ARE NOT SHOW STOPPERS. EXAMPLES: CHEMICAL REACTION (RUST), DENTS, SCRATCHES, LOOSE HINGE.

ATTACHMENT 12

```
- -------------------------------------------------------------------------------------------------------------------------------
  Applied Materials                                 ENGINEERING CHANGE NOTICE                          ECN No.
     COMMODITY:
- -------------------------------------------------------------------------------------------------------------------------------
                             MODEL No.    CHARGE No.   CONTRACT No.      PROGRAM NAME                          Sheet 1 of
                             -----------------------------------------------------------------------------------------------------
                                                                                          ECN             CLASS
- ----------------------------------------------------------------------------------------          ----------------------------------
DATA ENTRY REQUIRED             REASON FOR CHANGE      ECP No.             Requester      TYPE    I [ ]      II [ ]   RCD [ ]
- -------------------------------------------------------------------------------------------------------------------------------
Doc [ ]   Bom [ ]   Part [ ]                                                             Routine  Incorporate
- -----------------------------                         -----------------------------------------
DATA ENTRY REQUIRED                                    Customer Approval     Date         Urgent  Changes by
- -----------------------------                         -----------------------------------------  ----------------------------------
Doc [ ]   Bom [ ]   Part [ ]                                                           Emergency
- -------------------------------------------------------------------------------------------------------------------------------
                                                                                        Parts Disposition Codes
                                                                           ----------------------------------------------------
          DOCUMENT(S) AFFECTED                        PART(S) AFFECTED     1.       Use part as is (no action)

                                                                           2.       Rework part/build to change

                                                                           3.       Scrap part (do not use)

                                                                           4.       See special instruction
- -------------------------------------------------------------------------------------------------------------------------------
                                                      Change
                                                      Effectivity
Document   Current    New    L/U            Part      (S/N, Qty,
Number     Rev        Rev    Rev    TITLE   Number    Dates)               FP/RR           OPEN (OP)       Comp (CP) Cloased (CL)
- -------------------------------------------------------------------------------------------------------------------------------
                                                                           Not Started   In Kitting  10 Mfg.  In Stock    Shipped
- -------------------------------------------------------------------------------------------------------------------------------

- -------------------------------------------------------------------------------------------------------------------------------

- -------------------------------------------------------------------------------------------------------------------------------

- -------------------------------------------------------------------------------------------------------------------------------

=================================================================================================================================

DESCRIPTION OF CHANGE

- -------------------------------------------------------------------------------------------------------------------------------
                    Project Engineer    Date    Mfg. Engineer   Date   Production Control    Date    ECN Checked by          Date
                    -----------------------------------------------------------------------------------------------------------

REQUIRED                                                                                              ------------------------------
                                                                                                      Incorporated by         Date
                    -----------------------------------------------------------------------------------------------------------
APPROVALS           Quality Engineer    Date    Configuration   Date   Program Manager       Date
                                                                                                      Incorporation ck'd by   Date
                                                                                                      ------------------------------

- -------------------------------------------------------------------------------------------------------------------------------
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ATTACHMENT 13

APPLIED MATERIALS SUPPLIER PROBLEM SHEET 95-0957

Date	Vendor	Originator	Telephone No.

Part Number	Part Description

Contract/Spot Buy (circle one)	Purchase Order No.

PROBLEM

-
-
-
-

APPLIED ACTION

-
-
-
-
-

PROBLEM WILL BE RESOLVED BY:	NAME	DATE	RETURN RESPONSE TO ORIGINATOR WITHIN 24 HOURS

Attachment 14

Intentionally Omitted

Attachment 15

Intentionally Omitted

Attachment 16

CERTIFICATE OF CONFORMANCE

"I certify that on _________________________ the ____________________ furnished the supplies or services called for under the Applied Materials' Purchase Contract Number ________________________________ via _______________________ on ____ in accordance with all applicable requirements. I further certify that the supplies or services are of the quality specified and conform in all respects with the contract requirements, including specifications, drawings, preservation, packaging, packing, marking requirements and physical item identification (part number), and are in the quantity shown on this or on the attached acceptance document."

Date of Execution:

Signature:

Name & Title:

****

Instructions:

The _____ signed certificate shall be attached to or included on the top copy of the inspection or receiving report provided to Applied Materials ar the time of delivery. In addition, a copy of the signed completed certificate shall also be maintained at the ______ facility and will be made available to Applied Materials' representatives upon request.

Confidential Materials omitted and filed separately with the Securities and Exchange Commission. Asterisks denote omissions.

Attachment 17

[**] CALCULATION

[**]

EXHIBIT 13.1

SELECTED CONSOLIDATED FINANCIAL DATA
(in thousands, except per share data)

	Year Ended December 31				
	2000	1999	1998	1997	1996
STATEMENT OF INCOME DATA					
Net sales	$326,955	$187,083	$139,763	$188,080	$170,862
Gross profit	150,375	79,855	55,979	80,474	68,854
Income from operations	72,179	27,611	9,135	23,963	16,068
Net income	$ 46,234	$ 24,037	$ 7,186	$ 20,290	$ 12,503
Historical net income per share - Diluted	$ 1.76	$ 1.00	$ 0.38	$ 1.10	$ 0.69
PRO FORMA STATEMENT OF INCOME DATA (1)					
Pro forma net income		$ 18,412	$ 5,044	$ 13,806	$ 8,248
Pro forma net income per share - Diluted		$ 0.77	$ 0.27	$ 0.76	$ 0.46
BALANCE SHEET DATA					
Cash and cash equivalents	$ 44,675	$ 35,714	$ 11,188	$ 2,511	$ 3,815
Working capital	111,768	87,088	31,493	30,321	22,404
Total assets	266,383	174,605	96,232	106,536	95,000
Short-term obligations	17,705	20,828	12,819	13,852	16,124
Long-term obligations, less current portion	4,176	5,662	13,786	15,624	18,899
Stockholders' equity	198,935	119,169	54,826	52,848	45,498

	Quarter Ended			
	Mar 31	Jun 30	Sep 30	Dec 31
2000				
STATEMENT OF INCOME DATA				
Net sales	$ 65,556	$ 77,701	$ 87,636	$ 96,062
Gross profit	30,043	36,002	40,586	43,744
Income from operations	14,616	17,872	19,420	20,271
Net income	9,331	11,286	12,436	13,181
Historical net income per share - Diluted	$ 0.36	$ 0.43	$ 0.47	$ 0.50
1999				
STATEMENT OF INCOME DATA				
Net sales	$ 37,910	$ 44,209	$ 50,621	$ 54,343
Gross profit	15,353	18,659	21,745	24,098
Income from operations	3,541	5,907	7,999	10,164
Net income	3,129	7,576	6,037	7,295
Historical net income per share - Diluted	$ 0.16	$ 0.30	$ 0.24	$ 0.28
PRO FORMA STATEMENT OF INCOME DATA (1)				
Pro forma net income	$ 2,150	$ 3,806	$ 5,677	$ 6,779
Pro forma net income per share - Diluted	$ 0.11	$ 0.15	$ 0.22	$ 0.26

(1) Data is computed on the same basis as Note 2 of Notes to Consolidated Financial Statements. The historical net income per share data does not include provisions for federal income taxes because prior to its initial public offering in 1999, MKS was treated as an S corporation for federal income tax purposes. The Pro Forma Statement of Income Data for 1996-1999 presents net income and net income per share data as if MKS had been subject to federal income taxes as a C corporation during the periods presented.

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

When used in this Annual Report, including this Management's Discussion and Analysis, the words "believes," "anticipates," "plans," "expects" and similar expressions are intended to identify forward-looking statements. These forward-looking statements reflect management's current opinions and are subject to certain risks and uncertainties that could cause actual results to differ materially from those stated or implied. MKS Instruments, Inc. ("MKS" or the "Company") assumes no obligation to update this information. Risks and uncertainties include, but are not limited to, those discussed in the section entitled "Management's Discussion and Analysis - Trends, Risks and Uncertainties."

OVERVIEW. MKS was founded in 1961. MKS develops, manufactures and supplies instruments and components used to measure, control and analyze gases in semiconductor manufacturing and similar industrial manufacturing processes. During 2000, MKS estimates that approximately 76% of its net sales were to semiconductor capital equipment manufacturers and semiconductor device manufacturers. MKS expects that sales to such customers will continue to account for a substantial majority of its sales. MKS's customers include semiconductor capital equipment manufacturers, semiconductor device manufacturers, industrial manufacturing companies and university, government and industrial research laboratories. In 2000, 1999 and 1998, sales to MKS's top five customers accounted for approximately 42%, 33% and 24%, respectively, of MKS's net sales. During 2000, Applied Materials, Inc. accounted for approximately 25% of MKS's net sales.

A significant portion of MKS's sales are to operations in international markets. International sales by MKS's foreign operations, located in Japan, Korea, Europe, Singapore and Taiwan, were 29.4% and 31.3% of net sales for 2000 and 1999, respectively. Sales by MKS's Japan subsidiary comprised 15.3% and 16.4% of net sales in 2000 and 1999, respectively. MKS does not classify export sales made directly by MKS as international sales. Such export sales have generally been less than 10% of net sales. MKS currently uses, and plans to continue to use, forward exchange contracts and local currency purchased options to reduce currency exposure arising from foreign currency denominated intercompany sales of inventory. Gains and losses on derivative financial instruments that qualify for hedge accounting are classified in cost of sales. Gains and losses on derivative financial instruments that do not qualify for hedge accounting are marked-to-market and recognized immediately in other income. See Note 3 of Notes to Consolidated Financial Statements.

MKS was treated as an S corporation for federal income tax purposes prior to its initial public offering in 1999. MKS's S corporation status terminated upon the closing of the offering, at which time MKS became subject to federal, and certain state, income taxation as a C corporation. The pro forma net income reflects a pro forma effective tax rate of 38.0% in 1998 and 37.1% in 1999 to reflect federal and state income taxes which would have been payable had MKS been taxed as a C corporation for each period.

On April 5, 1999 MKS closed the initial public offering of its Common Stock. In connection with this offering and the exercise of an over-allotment option by the underwriters, the Company sold 6,375,000 shares of Common Stock at a price of $14.00 per share. The net proceeds to the Company were approximately $82,000,000. Offering costs were approximately $1,000,000.

On April 5, 1999 MKS distributed $40,000,000, which was the estimated amount of the Company's undistributed S Corporation earnings as of the day prior to the closing of the offering.

MKS completed several acquisitions in fiscal 2000, all of which have been accounted for under the purchase method of accounting. Accordingly, the results of operations for each acquired company have been included in the MKS consolidated results of operations from the date of purchase. On March 10, 2000 MKS acquired Compact Instrument Technology, LLC, or Compact Instrument, a start-up company with proprietary technology in process monitoring for semiconductor manufacturing and other manufacturing processes. The purchase price was $8,700,000 and consisted of $8,400,000 in MKS common stock and $300,000 in assumed net liabilities. On May 5, 2000 MKS acquired Telvac Engineering, Ltd., or Telvac, a UK-based, privately held manufacturer of vacuum subsystems. The purchase price was $1,600,000, and consisted of $750,000 in cash, $750,000 in debt and $100,000 in other acquisition expenses. On July 21, 2000 MKS acquired Spectra International, LLC, or Spectra, a privately held company with products and technology in process monitoring. The purchase price consisted of $9,700,000 cash; 183,293 shares of MKS common stock valued at $6,500,000; fully vested options to purchase 83,675 shares of MKS common stock valued at $2,400,000; and $400,000 in acquisition costs. On September 6, 2000 MKS acquired D.I.P., Inc., or D.I.P., a privately held company with products and technology in digital process control. The purchase price was $6,900,000 cash; 231,392 shares of MKS common stock valued at $6,800,000; and $300,000 in acquisition costs. See Note 12 of "Notes to Consolidated Financial Statements".

RESULTS OF OPERATIONS. The following table sets forth for the periods indicated the percentage of total net sales of certain line items included in MKS's consolidated statement of income data:

Year Ended December 31	2000	1999	1998
Net sales	100.0%	100.0%	100.0%
Cost of sales	54.0	57.3	59.9
Gross profit	46.0	42.7	40.1
Research and development	7.0	7.1	8.7
Selling, general and administrative	15.6	20.8	24.9
Amortization of goodwill and acquired intangible assets	1.2	--	--
Purchase of in-process technology	0.1	--	--
Income from operations	22.1	14.8	6.5
Interest income (expense), net	0.6	0.4	(0.8)
Other income (expense), net	(0.1)	0.4	0.1
Income before income taxes	22.6	15.6	5.8
Provision for income taxes	8.5	2.8	0.7
Net income	14.1%	12.8%	5.1%
PRO FORMA DATA:			
Historical income before income taxes		15.6%	5.8%
Pro forma provision for income taxes		5.8	2.2
Pro forma net income		9.8%	3.6%

YEAR ENDED 2000 COMPARED TO 1999

NET SALES. Net sales increased 74.8% to $327.0 million for the year ended December 31, 2000 from $187.1 million in the same period of 1999. International net sales were approximately $96.1 million for the year ended December 31, 2000 or 29.4% of net sales and $58.5 million for the year ended December 31, 1999 or 31.3% of net sales. The increase in net sales was due to increased worldwide sales volume of MKS's existing products which resulted primarily from increased sales to the Company's semiconductor capital equipment manufacturer and semiconductor device manufacturer customers, and an increase of approximately $11.1 million from the companies acquired during 2000.

GROSS PROFIT. Gross profit as a percentage of net sales increased to 46.0% for the year ended December 31, 2000 from 42.7% for the same period of 1999. The increase was primarily due to fuller utilization of existing manufacturing capacity as a result of increased net sales and other manufacturing efficiencies.

RESEARCH AND DEVELOPMENT. Research and development expense increased 73.9% to $23.0 million or 7.0% of net sales for the year ended December 31, 2000 from $13.2 million or 7.1% of net sales for the same period of 1999 due to increased compensation of $4.2 million, increased spending for development materials related to projects in process of $3.7 million and increased spending on other costs related to development work.

SELLING, GENERAL AND ADMINISTRATIVE. Selling, general and administrative expenses increased 30.4% to $50.9 million or 15.6% of net sales for the year ended December 31, 2000 from $39.0 million or 20.8% of net sales for the same period of 1999 due primarily to increased compensation expense of $6.1 million, earnout payments of $1.2 million related to the acquisition of Spectra International, LLC, increased professional fees and other selling, general and administrative expenses.

AMORTIZATION OF GOODWILL AND ACQUIRED INTANGIBLE ASSETS. Amortization of goodwill and acquired intangible assets of $4.0 million for the year ended December 31, 2000, represents the amortization of goodwill and other intangibles resulting from the acquisitions completed by MKS during the year.

PURCHASE OF IN-PROCESS TECHNOLOGY. In July, 2000 the Company acquired Spectra International LLC in a transaction accounted for as a purchase. The purchase price was allocated to the assets acquired, including intangible assets, based on their estimated fair values. The intangible assets include approximately $0.3 million for acquired in-process technology for projects that did not have future alternative uses. This allocation represents the estimated fair value based on risk-adjusted cash flows related to the in-process technology projects. At the date of the acquisition, the development of these projects had not yet reached technological feasibility, and the technology in progress had no alternative future uses. Accordingly, these costs were expensed in the three months ended September 30, 2000.

INTEREST INCOME (EXPENSE), NET. During the years ended December 31, 2000 and 1999, the Company generated net interest income of $2.0 million and $0.8 million, respectively, primarily from the invested net proceeds of our initial public offering, offset by interest expense on outstanding debt.

OTHER INCOME (EXPENSE), NET. Other expense of $0.2 million in the year ended December 31, 2000 represents expenses related to the preparation of the registration statement for the Company's follow-on public stock offering. The Company decided not to proceed with the follow-on offering, and has converted the registration statement to a shelf registration statement. Other income of $0.8 million in the year ended December 31, 1999 represents a distribution from one of MKS's mutual insurance carriers upon the initial public offering of the insurance carrier and gains recorded from foreign exchange contracts which did not qualify for hedge accounting.

PROVISION FOR INCOME TAXES. Prior to the closing of its initial public offering in April, 1999 MKS was treated as an S corporation for tax purposes. As an S corporation, MKS was not subject to federal, and certain state, income taxes. Upon the closing of its initial public offering on April 5, 1999, MKS's status as an S corporation was terminated and it became subject to taxes as a C corporation. The pro forma provision for income taxes in 1999 reflects the estimated tax expense MKS would have incurred had it been subject to federal and state income taxes as a C corporation. The pro forma provision differs from the federal statutory rate due primarily to the effects of state and foreign taxes and certain tax credits. The 2000 provision for income taxes of 37.5% differs from the pro forma provision for 1999 due to higher nondeductible expenses, primarily goodwill.

YEAR ENDED 1999 COMPARED TO 1998

NET SALES. Net sales increased 33.9% to $187.1 million for 1999 from $139.8 million for 1998. International net sales were approximately $58.5 million in 1999 or 31.3% of net sales and $45.3 million in 1998 or 32.4% of net sales. The increase in net sales was primarily due to increased sales volume of MKS's existing products in the United States and in Asia which resulted primarily from increased sales to the Company's semiconductor capital equipment manufacturer and semiconductor device manufacturer customers.

GROSS PROFIT. Gross profit as a percentage of net sales increased to 42.7% for 1999 from 40.1% in 1998. The increase was primarily due to fuller utilization of existing manufacturing capacity as a result of increased net sales.

RESEARCH AND DEVELOPMENT. Research and development expenses increased 9.0% to $13.2 million or 7.1% of net sales for 1999 from $12.1 million or 8.7% of net sales for 1998. The increase was due to increased spending for development materials.

SELLING, GENERAL AND ADMINISTRATIVE. Selling, general and administrative expenses increased 12.4% to $39.0 million or 20.8% of net sales from $34.7 million or 24.9% of net sales for 1998. The increase was due primarily to increased incentive compensation expense of $3.3 million, professional fees, and other selling expenses.

INTEREST INCOME (EXPENSE), NET. During 1999, the Company generated net interest income of $0.8 million primarily from the invested net proceeds of the initial public offering, offset by interest expense on outstanding debt. Net interest expense of $1.2 million for 1998 represents interest on outstanding loans, offset by interest income earned on cash and cash equivalents and short-term investments.

OTHER INCOME (EXPENSE), NET. Other income of $0.8 million for 1999 includes a distribution of $0.7 million from one of MKS's mutual insurance carriers upon the initial public offering of the insurance carrier, and also includes gains recorded from foreign exchange contracts which did not qualify for hedge accounting. Other income of $0.2 million in 1998 primarily represents foreign exchange translation gains on intercompany payables of $1.0 million offset by $0.7 million for costs associated with MKS's planned initial public offering in early 1998.

Effective April 1, 1999 MKS adopted Statement of Financial Accounting Standards (SFAS) No. 133, "Accounting for Derivative Instruments and Hedging Activities." SFAS No. 133 requires that all derivative instruments be recorded on the balance sheet at their fair value. Changes in the fair value of derivatives are recorded each period in current earnings or other comprehensive income, depending on whether a derivative is designated as part of a hedge transaction and, if it is, the type of hedge transaction. The adoption of SFAS No. 133 did not have a material impact on MKS's financial position or results of operations. The derivative instruments currently held by MKS which have been designated as hedges, including forward exchange contracts, local currency purchased options, and an interest rate swap, qualify for hedge accounting under SFAS No. 133, and changes in their fair value will be recorded as a component of other comprehensive income until the hedged transaction occurs.

PRO FORMA PROVISION FOR INCOME TAXES. Prior to the closing of its initial public offering in April, 1999 MKS was treated as an S corporation for tax purposes. As an S corporation, MKS was not subject to federal, and certain state, income taxes. Upon the closing of its initial public offering on April 5, 1999, MKS's status as an S corporation was terminated and it became subject to taxes as a C corporation. The pro forma provision for income taxes reflects the estimated tax expense MKS would have incurred had it been subject to federal and state income taxes as a C corporation. The pro forma provision differs from the federal statutory rate due primarily to the effects of state and foreign taxes and certain tax credits. The pro forma provision for 1999 reflects a pro forma tax rate of 37.1%. This rate differs from the pro forma tax rate of 38% for 1998 due to increased tax credits and lower nondeductible expenses in 1999.

LIQUIDITY AND CAPITAL RESOURCES

MKS has financed its operations and capital requirements through a combination of cash provided by operations, long-term real estate financing, capital lease financing and short-term lines of credit. On April 5, 1999 the Company completed the initial public offering of its Common Stock. In connection with this offering and the exercise of an over-allotment option by the underwriters, the Company sold 6,375,000 shares of Common Stock at a price of $14.00 per share. The net proceeds to the Company were approximately $82,000,000 and were received in the second quarter of 1999. Underwriting discounts and commissions were approximately $6,200,000, and other offering costs were approximately $1,000,000. On April 5, 1999 MKS distributed $40,000,000, which was the estimated amount of its undistributed S Corporation earnings as of the day prior to the closing of the offering.

Operations provided cash of $34.0 million for 2000 primarily from generating net income. This cash flow was impacted by depreciation and changes in the levels of accounts payable, accrued expenses, accounts receivable and a non-cash deferred tax credit. Investing activities utilized cash of $19.6 million for 2000 primarily from the purchases of Telvac, Spectra and D.I.P., and the purchases of property and equipment, offset by proceeds from selling short-term investments. Financing activities utilized cash of $5.0 million primarily for payments on long-term debt.

Working capital was $111.8 million as of December 31, 2000, an increase of $24.7 million from December 31, 1999. MKS has a combined $40.0 million line of credit with two banks, expiring April 30, 2001, all of which is available.

Prior to its initial public offering, the Company entered into a Tax Indemnification and S Corporation Distribution Agreement with its then existing stockholders (the "Pre-IPO stockholders"). The agreement includes provisions for the payment, with interest, by the Pre-IPO stockholders or MKS, as the case may be, for the difference between the $40,000,000 distributed as an estimate of the amount of the accumulated adjustments account as of April 4, 1999, which is the date the Company's S Corporation status was terminated, and the actual amount of the accumulated adjustments account on that day. The actual amount of the accumulated adjustments account was $41,416,619. Accordingly, the Company made an additional distribution of $1,416,619, plus interest of $177,524, to the Pre-IPO stockholders during the three months ended September 30, 2000. The amount of the additional distribution payable had been estimated to be $3,350,000. This estimated amount was charged directly to retained earnings during 1999 and had no impact on net income or earnings per share. The difference between the actual additional distribution and the estimated additional distribution was credited directly to retained earnings during the three months ended September 30, 2000 and had no impact on net income or earnings per share. The amount of the accumulated adjustments account can be affected by future income tax audits of MKS. If any audit increases or decreases the accumulated adjustments account, MKS or the Pre-IPO stockholders, as the case may be, will also be required to make a payment, with interest, of such difference to the other party. No shareholders, other than the Pre-IPO stockholders, are parties to the Tax Indemnification and S Corporation Distribution Agreement.

MKS believes that its working capital, together with the cash anticipated to be generated from operations and funds available from existing credit facilities, will be sufficient to satisfy its estimated working capital and planned capital expenditure requirements through at least the next 24 months.

RECENTLY ISSUED ACCOUNTING PRONOUNCEMENTS

In December 1999, the Securities and Exchange Commission issued Staff Accounting Bulletin No 101 ("SAB 101"), "Revenue Recognition". SAB 101 summarizes the staff's view in applying generally accepted accounting principles to revenue recognition. The Company adopted SAB 101 in fiscal year 2000. The adoption did not have a material affect on its financial statements.

RECENT DEVELOPMENTS. On January 26, 2001 the Company closed its acquisition of Applied Science and Technology, Inc. or ASTeX, a Wilmington, Massachusetts based company that designs, develops, and manufactures precision reactive gas solutions. Under the terms of the agreement, each outstanding share of ASTeX common stock was exchanged for 0.7669 newly issued shares of common stock of MKS, resulting in the issuance of approximately 11.2 million shares of common stock of MKS, representing 30% of MKS's then outstanding shares. This acquisition will be accounted for under the pooling of interests method of accounting.

TRENDS, RISKS AND UNCERTAINTIES

FACTORS THAT MAY AFFECT FUTURE RESULTS

MKS' BUSINESS DEPENDS SUBSTANTIALLY ON CAPITAL SPENDING IN THE SEMICONDUCTOR INDUSTRY WHICH IS CHARACTERIZED BY PERIODIC FLUCTUATIONS THAT MAY CAUSE A REDUCTION IN DEMAND FOR MKS' PRODUCTS. MKS estimates that approximately 66% of its sales during 1999 and 76% of its sales in 2000 were to semiconductor capital equipment manufacturers and semiconductor device manufacturers, and it expects that sales to such customers will continue to account for a substantial majority of its sales. MKS' business depends upon the capital expenditures of semiconductor device manufacturers, which in turn depend upon the demand for semiconductors. Periodic reductions in demand for the products manufactured by semiconductor capital equipment manufacturers and semiconductor device manufacturers may adversely affect MKS' business, financial condition and results of operations. Historically, the semiconductor market has been highly cyclical and has experienced periods of overcapacity, resulting in significantly reduced demand for capital equipment. For example, in 1996 and 1998, the semiconductor capital equipment industry experienced significant declines, which caused a number of MKS customers to reduce their orders. The downturn in capital spending by semiconductor manufacturers also reduced ASTeX's sales during portions of 1998 and 1999, resulting in significant losses. More recently, in the first quarter of 2001, MKS has announced that there has been a reduction in demand from OEM customers, and that it expects lower gross margins due to reduced absorption of manufacturing overhead at the lower revenue levels and a higher proportion of lower margin products. In addition, many semiconductor manufacturers have operations and customers in Asia, a region which in recent years has experienced serious economic problems including currency devaluations, debt defaults, lack of liquidity and recessions. MKS cannot be certain that semiconductor downturns will not recur. A decline in the level of orders as a result of any future downturn or slowdown in the semiconductor capital equipment industry could have a material adverse effect on MKS' business, financial condition and results of operations.

MKS' QUARTERLY OPERATING RESULTS HAVE VARIED, AND ARE LIKELY TO CONTINUE TO VARY SIGNIFICANTLY. THIS MAY RESULT IN VOLATILITY IN THE MARKET PRICE FOR MKS' SHARES. A substantial portion of MKS' shipments occur shortly after an order is received and therefore MKS operates with a low level of backlog. As a result, a decrease in demand for MKS' products from one or more customers could occur with limited advance notice and could have a material adverse effect on MKS' results of operations in any particular period.

A significant percentage of MKS' expenses are relatively fixed and based in part on expectations of future net sales. The inability to adjust spending quickly enough to compensate for any shortfall would magnify the adverse impact of a shortfall in net sales on MKS' results of operations. Factors that could cause fluctuations in MKS' net sales include:

* the timing of the receipt of orders from major customers;
* shipment delays;
* disruption in sources of supply;
* seasonal variations of capital spending by customers;
* production capacity constraints; and
* specific features requested by customers.

For example, MKS was in the process of increasing its production capacity when the semiconductor capital equipment market began to experience a significant downturn in 1996. This downturn had a material adverse effect on MKS' operating results in the second half of 1996 and the first half of 1997. After an increase in business in the latter half of 1997, the market experienced another downturn in 1998, which had a material adverse effect on MKS' 1998 and first quarter 1999 operating results. As a result of the factors discussed above, it is likely that MKS will in the future experience quarterly or annual fluctuations and that, in one or more future quarters, its operating results will fall below the expectations of public market analysts or investors. In any such event, the price of MKS' common stock could decline significantly.

THE LOSS OF NET SALES TO ANY ONE OF MKS' MAJOR CUSTOMERS WOULD LIKELY HAVE A MATERIAL ADVERSE EFFECT ON MKS. MKS' five largest customers accounted for approximately 42% of its net sales in 2000, 33% of its net sales in 1999 and 24% of its net sales in 1998. The loss of a major customer or any reduction in orders by these customers, including reductions due to market or competitive conditions, would likely have a material adverse effect on MKS' business, financial condition and results of operations. During 2000 and 1999, one customer, Applied Materials, accounted for approximately 25% and 22%, respectively, of MKS' net sales. In addition, Applied Materials accounted for approximately 50% of the revenues of ASTeX in its fiscal year 2000. MKS' purchase contract with Applied Materials expires in April 2001. While MKS and Applied Materials are currently negotiating a new agreement, there can be no assurance that negotiations will be successful. None of MKS' significant customers, including Applied Materials, has entered into an agreement requiring it to purchase any minimum quantity of MKS' products. The demand for MKS' products from its semiconductor capital equipment customers depends in part on orders received by them from their semiconductor device manufacturer customers.

Attempts to lessen the adverse effect of any loss or reduction through the rapid addition of new customers could be difficult because prospective customers typically require lengthy qualification periods prior to placing volume orders with a new supplier. MKS' future success will continue to depend upon:

* its ability to maintain relationships with existing key customers;
* its ability to attract new customers; and
* the success of its customers in creating demand for their capital equipment products which incorporate MKS' products.

AS PART OF MKS' BUSINESS STRATEGY, MKS HAS ENTERED INTO AND MAY ENTER INTO OR SEEK TO ENTER INTO BUSINESS COMBINATIONS AND ACQUISITIONS THAT MAY BE DIFFICULT TO INTEGRATE, DISRUPT ITS BUSINESS, DILUTE STOCKHOLDER VALUE OR DIVERT MANAGEMENT ATTENTION. MKS acquired Compact Instrument in March 2000, Telvac in May 2000, Spectra in July 2000, D.I.P in September 2000 and ASTeX in January 2001. As a part of its business strategy, MKS may enter into additional business combinations and acquisitions. Acquisitions are typically accompanied by a number of risks, including the difficulty of integrating the operations and personnel of the acquired companies, the potential disruption of MKS' ongoing business and distraction of management, expenses related to the acquisition and potential unknown liabilities associated with acquired businesses.

If MKS is not successful in completing acquisitions that it may pursue in the future, it may be required to reevaluate its growth strategy and MKS may have incurred substantial expenses and devoted significant management time and resources in seeking to complete proposed acquisitions that will not generate benefits for it. In addition, with future acquisitions, MKS could use substantial portions of its available cash as all or a portion of the purchase price. MKS could also issue additional securities as consideration for these acquisitions, which could cause significant stockholder dilution. MKS' acquisitions of Compact Instrument, Telvac, Spectra, D.I.P. and ASTeX and any future acquisitions may not ultimately help MKS achieve its strategic goals and may pose other risks to MKS.

AN INABILITY TO CONVINCE SEMICONDUCTOR DEVICE MANUFACTURERS TO SPECIFY THE USE OF MKS' PRODUCTS TO MKS' CUSTOMERS, WHO ARE SEMICONDUCTOR CAPITAL EQUIPMENT MANUFACTURERS, WOULD WEAKEN MKS' COMPETITIVE POSITION. The markets for MKS' products are highly competitive. Its competitive success often depends upon factors outside of its control. For example, in some cases, particularly with respect to mass flow controllers, semiconductor device manufacturers may direct semiconductor capital equipment manufacturers to use a specified supplier's product in their equipment. Accordingly, for such products, MKS' success will depend in part on its ability to have semiconductor device manufacturers specify that MKS' products be used at their semiconductor fabrication facilities. In addition, MKS may encounter difficulties in changing established relationships of competitors that already have a large installed base of products within such semiconductor fabrication facilities.

IF MKS' PRODUCTS ARE NOT DESIGNED INTO SUCCESSIVE NEW GENERATIONS OF ITS CUSTOMERS' PRODUCTS, MKS WILL LOSE SIGNIFICANT NET SALES DURING THE LIFESPAN OF THOSE PRODUCTS. New products designed by semiconductor capital equipment manufacturers typically have a lifespan of five to ten years. MKS' success depends on its products being designed into new generations of equipment for the semiconductor industry. MKS must develop products that are technologically current so that they are positioned to be chosen for use in each successive new generation of semiconductor capital equipment. If MKS products are not chosen by its customers, MKS' net sales may be reduced during the lifespan of its customers' products. In addition, MKS must make a significant capital investment to develop products for its customers well before its products are introduced and before it can be sure that it will recover its capital investment through sales to the customers in significant volume. MKS is thus also at risk during the development phase that its product may fail to meet its customers' technical or cost requirements and may be replaced by a competitive product or alternative technology solution. If that happens, MKS may be unable to recover MKS' development costs.

THE SEMICONDUCTOR INDUSTRY IS SUBJECT TO RAPID DEMAND SHIFTS WHICH ARE DIFFICULT TO PREDICT. AS A RESULT, MKS' INABILITY TO EXPAND ITS MANUFACTURING CAPACITY IN RESPONSE TO THESE RAPID SHIFTS MAY CAUSE A REDUCTION IN ITS MARKET SHARE. MKS' ability to increase sales of certain products depends in part upon its ability to expand its manufacturing capacity for such products in a timely manner. If MKS is unable to expand its manufacturing capacity on a timely basis or to manage such expansion effectively, its customers could implement its competitors' products and, as a result, its market share could be reduced. Because the semiconductor industry is subject to rapid demand shifts which are difficult to foresee, MKS may not be able to increase capacity quickly enough to respond to a rapid increase in demand in the semiconductor industry. Additionally, capacity expansion could increase MKS' fixed operating expenses and if sales levels do not increase to offset the additional expense levels associated with any such expansion, its business, financial condition and results of operations could be materially adversely affected.

SALES TO FOREIGN MARKETS CONSTITUTE A SUBSTANTIAL PORTION OF MKS' NET SALES; THEREFORE, MKS NET SALES AND RESULTS OF OPERATIONS COULD BE ADVERSELY AFFECTED BY DOWNTURNS IN ECONOMIC CONDITIONS IN COUNTRIES OUTSIDE OF THE UNITED STATES. International sales, which include sales by MKS' foreign subsidiaries, but exclude direct export sales (which were less than 10% of MKS' total net sales), accounted for approximately 29% of net sales in 2000, 31% of net sales in 1999 and 32% of net sales in 1998. In addition, international sales accounted for 20% of revenues in ASTeX's fiscal year 2000, 20% of revenues in its fiscal year 1999, and 23% of revenues in its fiscal year 1998. MKS anticipates that international sales will continue to account for a significant portion of MKS' net sales. In addition, certain of MKS' key domestic customers derive a significant portion of their revenues from sales in international markets. Therefore, MKS' sales and results of operations could be adversely affected by economic slowdowns and other risks associated with international sales.

UNFAVORABLE CURRENCY EXCHANGE RATE FLUCTUATIONS MAY LEAD TO LOWER GROSS MARGINS, OR MAY CAUSE MKS TO RAISE PRICES WHICH COULD RESULT IN REDUCED SALES. Currency exchange rate fluctuations could have an adverse effect on MKS' net sales and results of operations and MKS could experience losses with respect to its hedging activities. Unfavorable currency fluctuations could require MKS to increase prices to foreign customers which could result in lower net sales by MKS to such customers. Alternatively, if MKS does not adjust the prices for its products in response to unfavorable currency fluctuations, its results of operations could be adversely affected. In addition, sales made by MKS' foreign subsidiaries are denominated in the currency of the country in which these products are sold and the currency it receives in payment for such sales could be less valuable at the time of receipt as a result of exchange rate fluctuations. MKS enters into forward exchange contracts and local currency purchased options to reduce currency exposure arising from intercompany sales of inventory. However, MKS cannot be certain that its efforts will be adequate to protect it against significant currency fluctuations or that such efforts will not expose it to additional exchange rate risks.

COMPETITION FOR PERSONNEL IN THE SEMICONDUCTOR AND INDUSTRIAL MANUFACTURING INDUSTRIES IS INTENSE. MKS' success depends to a large extent upon the efforts and abilities of a number of key employees and officers, particularly those with expertise in the semiconductor manufacturing and similar industrial manufacturing industries. The loss of key employees or officers could have a material adverse effect on MKS' business, financial condition and results of operations. MKS believes that its future success will depend in part on its ability to attract and retain highly skilled technical, financial, managerial and marketing personnel. Competition for such personnel is intense, and MKS cannot be certain that it will be successful in attracting and retaining such personnel.

MKS' PROPRIETARY TECHNOLOGY IS IMPORTANT TO THE CONTINUED SUCCESS OF ITS BUSINESS. MKS' FAILURE TO PROTECT THIS PROPRIETARY TECHNOLOGY MAY SIGNIFICANTLY IMPAIR MKS' COMPETITIVE POSITION. As of December 31, 2000, MKS owned 55 U.S. patents and 56 foreign patents and had 27 pending U.S. patent applications and 90 pending foreign patent applications. Although MKS seeks to protect its intellectual property rights through patents, copyrights, trade secrets and other measures, it cannot be certain that:

* MKS will be able to protect its technology adequately;
* competitors will not be able to develop similar technology independently;
* any of MKS' pending patent applications will be issued;
* intellectual property laws will protect MKS' intellectual property rights; or
* third parties will not assert that MKS' products infringe patent, copyright or trade secrets of such parties.

PROTECTION OF MKS' INTELLECTUAL PROPERTY RIGHTS MAY RESULT IN COSTLY LITIGATION. Litigation may be necessary in order to enforce MKS' patents, copyrights or other intellectual property rights, to protect its trade secrets, to determine the validity and scope of the proprietary rights of others or to defend against claims of infringement. For example, on November 30, 2000, ASTeX brought suit in federal district court in Delaware against Advanced Energy Industries, Inc. for infringement of ASTeX's patent related to its Astron product. Such litigation could result in substantial costs and diversion of resources and could have a material adverse effect on MKS' business, financial condition and results of operations.

THE MARKET PRICE OF MKS' COMMON STOCK HAS FLUCTUATED AND MAY CONTINUE TO FLUCTUATE FOR REASONS OVER WHICH MKS HAS NO CONTROL. The stock market has from time to time experienced, and is likely to continue to experience, extreme price and volume fluctuations. Recently, prices of securities of technology companies have been especially volatile and have often fluctuated for reasons that are unrelated to the operating performance of the companies. The market price of shares of MKS' common stock has fluctuated greatly since its initial public offering and could continue to fluctuate due to a variety of factors. In the past, companies that have experienced volatility in the market price of their stock have been the objects of securities class action litigation. If MKS were the object of securities class action litigation, it could result in substantial costs and a diversion of MKS' management's attention and resources.

MKS'S DEPENDENCE ON SOLE AND LIMITED SOURCE SUPPLIERS COULD AFFECT ITS ABILITY TO MANUFACTURE PRODUCTS AND SYSTEMS. MKS relies on sole and limited source suppliers for a few of its components and subassemblies that are critical to the manufacturing of MKS's products. This reliance involves several risks, including the following:

* the potential inability to obtain an adequate supply of required components;
* reduced control over pricing and timing of delivery of components; and
* the potential inability of its suppliers to develop technologically advanced products to support MKS's growth and development of new systems.

MKS believes that in time MKS could obtain and qualify alternative sources for most sole and limited source parts. Seeking alternative sources of the parts could require MKS to redesign its systems, resulting in increased costs and likely shipping delays. MKS may be unable to redesign its systems, which could result in further costs and shipping delays. These increased costs would decrease MKS' profit margins if it could not pass the costs to its customers. Further, shipping delays could damage MKS' relationships with current and potential customers and have a material adverse effect on MKS' business and results of operations.

MKS IS SUBJECT TO GOVERNMENTAL REGULATIONS. MKS is subject to federal, state, local and foreign regulations, including environmental regulations and regulations relating to the design and operation of MKS' power supply products. MKS must ensure that these systems meet certain safety standards, many of which vary across the countries in which MKS' systems are used. For example, the European Union has published directives specifically relating to power supplies. MKS must comply with these directives in order to ship MKS' systems into countries that are members of the European Union. MKS believes it is in compliance with current applicable regulations, directives and standards and has obtained all necessary permits, approvals, and authorizations to conduct MKS' business. However, compliance with future regulations, directives and standards could require it to modify or redesign certain systems, make capital expenditures or incur substantial costs. If MKS does not comply with current or future regulations, directives and standards:

* MKS could be subject to fines;
* MKS' production could be suspended; or
* MKS could be prohibited from offering particular systems in specified markets.

ONE STOCKHOLDER, ALONG WITH MEMBERS OF HIS FAMILY, CONTINUES TO HAVE A SUBSTANTIAL INTEREST IN MKS. As of January 31, 2001, John R. Bertucci, chairman and chief executive officer of MKS, and members of his family, in the aggregate, beneficially owned approximately 41.4% of MKS' outstanding common stock. As a result, these stockholders, acting together, are able to exert substantial influence over actions of MKS.

SOME PROVISIONS OF MKS' RESTATED ARTICLES OF ORGANIZATION, MKS' BY-LAWS AND MASSACHUSETTS LAW COULD DISCOURAGE POTENTIAL ACQUISITION PROPOSALS AND COULD DELAY OR PREVENT A CHANGE IN CONTROL OF MKS. Anti-takeover provisions could diminish the opportunities for stockholders to participate in tender offers, including tender offers at a price above the then current market value of the common stock. Such provisions may also inhibit increases in the market price of the common stock that could result from takeover attempts. For example, while MKS has no present plans to issue any preferred stock, MKS' board of directors, without further stockholder approval, may issue preferred stock that could have the effect of delaying, deterring or preventing a change in control of MKS. The issuance of preferred stock could adversely affect the voting power of the holders of MKS' common stock, including the loss of voting control to others. In addition, MKS' By-Laws provide for a classified board of directors consisting of three classes. The classified board could also have the effect of delaying, deterring or preventing a change in control of MKS.

MARKET RISK AND SENSITIVITY ANALYSIS

FOREIGN EXCHANGE RATE RISK. MKS enters into forward exchange contracts and local currency purchased options to reduce currency exposure arising from intercompany sales of inventory. The potential fair value loss for a hypothetical 10% adverse change in forward currency exchange rates on MKS's forward exchange contracts at December 31, 2000 and 1999 would be $146,000 and $502,000, respectively. The potential loss in each year was estimated by calculating the fair value of the forward exchange contracts at December 31 and comparing that with those calculated using the hypothetical forward currency exchange rates.

The value of the local currency purchased options at December 31, 2000 and 1999 was immaterial.

At December 31, 2000, MKS had $15,719,000 related to short-term borrowings denominated in Japanese yen. The carrying value of these short-term borrowings approximates fair value due to their short period to maturity. Assuming a hypothetical 10% adverse change in the Japanese yen to U.S. dollar year end exchange rate, the fair value of these short-term borrowings would increase by $1,746,000. The potential increase in fair value was estimated by calculating the fair value of the short-term borrowings at December 31, 2000 and comparing that with the fair value using the hypothetical year end exchange rate.

At December 31, 1999, MKS had $12,423,000 related to short-term borrowings denominated in Japanese yen. The carrying value of these short-term borrowings approximated fair market value due to their short period to maturity. Assuming a hypothetical 10% adverse change in the Japanese yen to U.S. dollar year end exchange rate in 1999, the fair value of these short-term borrowings would have increased by $1,381,000. The potential increase in fair value was estimated by calculating the fair value of the short-term borrowings at December 31, 1999 and comparing that with the fair value using the hypothetical year end exchange rate.

INTEREST RATE RISK. MKS is exposed to fluctuations in interest rates in connection with its variable rate term loans. In order to minimize the effect of changes in interest rates on earnings, MKS entered into an interest rate swap that fixed the interest rate on its variable rate term loans. Under the swap agreement, MKS pays a fixed rate of 5.85% on the notional amount and receives LIBOR. At December 31, 2000 and 1999, the notional amount of the interest rate swap was equal to the principal amount of the variable rate term loans. The potential increase in the fair value of term loans resulting from a hypothetical 10% decrease in interest rates, after adjusting for the interest rate swap, was not material.

Due to its short-term duration, the fair value of the Company's cash and investment portfolio at December 31, 2000 and 1999 approximated its carrying value. Interest rate risk was estimated as the potential decrease in fair value resulting from a hypothetical 10% increase in interest rates for securities contained in the investment portfolio. The resulting hypothetical fair value was not materially different from the year-end carrying values.

SUPPLEMENTAL STOCKHOLDER INFORMATION

PRICE RANGE OF COMMON STOCK. The Common Stock of MKS is traded on the Nasdaq National Market under the symbol MKSI. On February 28, 2001, the closing price of the Company's Common Stock, as reported on the Nasdaq National Market, was $17.50 per share. The following table sets forth for the periods indicated the high and low sales prices per share of the Common Stock as reported by the Nasdaq National Market.

Price Range of Common Stock	2000		1999	
	High	Low	High	Low
First Quarter	62.2500	30.5000	14.5000	13.3750
Second Quarter	57.0000	31.8750	19.7500	11.8750
Third Quarter	40.7500	16.8125	22.5000	17.7500
Fourth Quarter	25.8125	14.2500	36.5000	19.2500

On February 28, 2001, MKS had approximately 276 stockholders of record.

DIVIDEND POLICY. MKS currently intends, subject to its contractual obligations under the Tax Indemnification and S Corporation Distribution Agreement, to retain earnings for the continued development of our business. Restrictions or limitations on the payment of dividends may be imposed in the future under the terms of credit agreements or under other contractual provisions. In the absence of such restrictions or limitations, the payment of any dividends will be at the discretion of the Board of Directors.

REPORT OF INDEPENDENT ACCOUNTANTS

To Board of Directors and Stockholders of MKS Instruments, Inc.:

In our opinion, the accompanying consolidated balance sheets and the related consolidated statements of income, stockholders' equity and cash flows present fairly, in all material respects, the financial position of MKS Instruments, Inc. and its subsidiaries at December 31, 2000 and 1999, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2000 in conformity with accounting principles generally accepted in the United States of America. These financial statements are the responsibility of the Company's management; our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits of these statements in accordance with auditing standards generally accepted in the United States of America, which require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

PricewaterhouseCoopers LLP

Boston, Massachusetts
January 26, 2001

CONSOLIDATED BALANCE SHEETS
(in thousands, except share data)

December 31	2000	1999
ASSETS		
Current assets:		
Cash and cash equivalents	$ 44,675	$ 35,714
Short-term investments	5,731	28,132
Trade accounts receivable, net of allowance for doubtful accounts of $1,197 and $934 at December 31, 2000 and 1999, respectively	62,113	36,857
Inventories	49,218	27,650
Deferred tax asset	7,493	4,119
Other current assets	3,630	3,378
Total current assets	172,860	135,850
Property, plant and equipment, net	37,290	32,826
Long-term investments	13,100	1,063
Goodwill and acquired intangibles assets	36,709	---
Other assets	6,424	4,866
Total assets	$ 266,383	$174,605
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Short-term borrowings	$ 15,741	$ 12,423
Current portion of long-term debt	1,354	7,346
Current portion of capital lease obligations	610	1,059
Accounts payable	16,851	7,683
Accrued compensation	12,902	9,202
Other accrued expenses	7,608	6,314
Income taxes payable	6,026	1,385
Distribution payable	---	3,350
Total current liabilities	61,092	48,762
Long-term debt	3,229	4,340
Long-term portion of capital lease obligations	947	1,322
Deferred tax liability	1,663	522
Other liabilities	517	490
Commitments and contingencies (Note 7)		
Stockholders' equity:		
Preferred Stock, $0.01 par value, 2,000,000 shares authorized; none issued and outstanding	---	---
Common Stock, no par value, 50,000,000 shares authorized; 25,604,049 and 24,632,849 shares issued and outstanding at December 31, 2000 and 1999	113	113
Additional paid-in capital	116,267	84,713
Retained earnings	81,333	33,166
Shareholder receivable	---	(856)
Accumulated other comprehensive income	1,222	2,033
Total stockholders' equity	198,935	119,169
Total liabilities and stockholders' equity	$ 266,383	$174,605

The accompanying notes are an integral part of the consolidated financial statements.

CONSOLIDATED STATEMENTS OF INCOME
(in thousands, except per share data)

Year Ended December 31	2000	1999	1998
Net sales	$326,955	$187,083	$139,763
Cost of sales	176,580	107,228	83,784
Gross profit	150,375	79,855	55,979
Research and development	23,011	13,230	12,137
Selling, general and administrative	50,888	39,014	34,707
Amortization of goodwill and acquired intangible assets	3,987	---	---
Purchase of in-process technology	310	---	---
Income from operations	72,179	27,611	9,135
Interest expense	1,390	1,346	1,483
Interest income	3,369	2,154	296
Other income (expense), net	(209)	849	187
Income before income taxes	73,949	29,268	8,135
Provision for income taxes (Note 9)	27,715	5,231	949
Net income	$ 46,234	$ 24,037	$ 7,186
Historical net income per share:			
Basic	$ 1.84	$ 1.05	$ 0.40
Diluted	$ 1.76	$ 1.00	$ 0.38
Historical weighted average common shares outstanding:			
Basic	25,175	22,784	18,053
Diluted	26,296	23,954	18,720
Pro forma data (unaudited):			
Historical income before income taxes		$ 29,268	$ 8,135
Pro forma provision for income taxes assuming C corporation tax		10,856	3,091
Pro forma net income		$ 18,412	$ 5,044
Pro forma net income per share:			
Basic		$ 0.81	$ 0.28
Diluted		$ 0.77	$ 0.27
Pro forma weighted average common shares outstanding:			
Basic		22,784	18,053
Diluted		23,786	18,538

The accompanying notes are an integral part of the consolidated financial statements.

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
For the years ended December 31, 2000, 1999 and 1998
(in thousands, except share data)

	Common Stock					
	Class A		Class B		Common Stock	
	Shares	Amount	Shares	Amount	Shares	Amount
Balance at December 31, 1997	7,766,910	$ 40	10,286,255	$ 73		
Distributions to stockholders						
Issuance of common stock			2			
Comprehensive income:						
Net income						
Other comprehensive income, net of taxes						
Foreign currency translation adjustment						
Unrealized loss on investments						
Comprehensive income						
Balance at December 31, 1998	7,766,910	40	10,286,257	73		
Distributions to stockholders						
Distributions payable to stockholders						
Conversion to Common Stock	(7,766,910)	(40)	(10,286,257)	(73)	18,053,167	113
Issuance of common stock from Initial Public Offering					6,375,000	
Issuance of common stock from exercise of stock options and Employee Stock Purchase Plan					204,682	
Tax benefit from exercise of stock options						
Stock options compensation						
Shareholder receivable						
Comprehensive income:						
Net income						
Other comprehensive income, net of taxes:						
Non-recurring deferred tax charge to comprehensive income (Note 9)						
Impact of adopting SFAS No. 133						
Changes in value of financial instruments designated as cash flow hedges						
Foreign currency translation adjustment						
Unrealized gain (loss) on investments						
Comprehensive income						
Balance at December 31, 1999	--	--	--	--	24,632,849	113
Adjustment to Distributions payable to stockholders						
Issuance of common stock from exercise of stock options and Employee Stock Purchase Plan					419,385	
Tax benefit from exercise of stock options						
Stock and stock options issued in acquisition of businesses					551,815	
Shareholder receivable						
Comprehensive income:						
Net income						
Other comprehensive income, net of taxes:						
Changes in value of financial instruments designated as cash flow hedges						
Foreign currency translation adjustment						
Unrealized gain (loss) on investments						
Comprehensive income						
Balance at December 31, 2000	--	$ --	--	$ --	25,604,049	$ 113

	Additional Paid-In Capital	Retained Earnings	Shareholder Receivable	Accumulated Other Comprehensive Income	Comprehensive Income	Total Stockholders' Equity
Balance at December 31, 1997	$ 48	$ 51,443		$1,244		$52,848
Distributions to stockholders		(6,150)				(6,150)
Issuance of common stock						
Comprehensive income						
Net income		7,186			$ 7,186	7,186
Other comprehensive income, net of taxes						
Foreign currency translation adjustment				992	992	992
Unrealized loss on investments				(50)	(50)	(50)
Comprehensive income					$ 8,128	
Balance at December 31, 1998	48	52,479		2,186		54,826
Distributions to stockholders		(40,000)				(40,000)
Distributions payable to stockholders		(3,350)				(3,350)
Conversion to Common Stock						
Issuance of common stock from Initial Public Offering	82,062					82,062
Issuance of common stock from exercise of stock options and Employee Stock Purchase Plan	1,230					1,230
Tax benefit from exercise of stock options	1,112					1,112
Stock options compensation	261					261

Shareholder receivable			(856)			(856)
Comprehensive income:						
Net income		24,037			24,037	24,037
Other comprehensive income, net of taxes:						
Non-recurring deferred tax charge to comprehensive income (Note 9)				(660)	(660)	(660)
Impact of adopting SFAS No. 133				(16)	(16)	(16)
Changes in value of financial instruments designated as cash flow hedges				(212)	(212)	(212)
Foreign currency translation adjustment				(80)	(80)	(80)
Unrealized gain (loss) on investments				815	815	815
Comprehensive income					$ 23,884	
Balance at December 31, 1999	84,713	33,166	(856)	2,033		119,169
Adjustment to Distributions payable to stockholders		1,933				1,933
Issuance of common stock from exercise of stock options and Employee Stock Purchase Plan	3,340					3,340
Tax benefit from exercise of stock options	4,078					4,078
Stock and stock options issued in acquisition of businesses	24,136					24,136
Shareholder receivable			856			856
Comprehensive income:						
Net income		46,234			46,234	46,234
Other comprehensive income, net of taxes:						
Changes in value of financial instruments designated as cash flow hedges				603	603	603
Foreign currency translation adjustment				(765)	(765)	(765)
Unrealized gain (loss) on investments				(649)	(649)	(649)
Comprehensive income					$ 45,423	
Balance at December 31, 2000	$116,267	$ 81,333	$ --	$1,222		$ 198,935

The accompanying notes are an integral part of the consolidated financial statements.

CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)

Year Ended December 31	2000	1999	1998
Cash flows from operating activities:			
Net income	$ 46,234	$ 24,037	$ 7,186
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	10,524	6,209	6,242
(Gain) loss on disposal of property, plant and equipment	62	(181)	48
Deferred taxes	(3,137)	(266)	(32)
Non-recurring deferred tax credit	---	(3,770)	---
Other	231	257	253
Forward exchange contract loss (gain) realized	---	9	(1,211)
Purchase of in-process research and development	310	---	---
Stock option compensation	---	261	---
Changes in operating assets and liabilities, net of effects of businesses acquired:			
Trade accounts receivable	(23,059)	(15,922)	12,908
Inventories	(18,402)	(2,908)	6,479
Other current assets	410	(1,000)	554
Accrued compensation	3,700	5,217	(3,516)
Accrued expenses	2,357	1,019	(1,602)
Accounts payable	6,197	4,022	(3,682)
Income taxes payable	8,607	106	(647)
Net cash provided by operating activities	34,034	17,090	22,980
Cash flows from investing activities:			
Purchases of short-term and long-term investments	(29,795)	(45,999)	---
Maturities and sales of short-term and long-term investments	39,044	18,654	---
Purchases of property, plant and equipment	(10,996)	(5,505)	(3,137)
Proceeds from sale of property, plant and equipment	65	318	60
Business combinations, net of cash acquired	(17,539)	---	---
Increase in other assets	(411)	(853)	(270)
Cash received (used) to settle forward exchange contracts	---	(9)	1,211
Net cash used in investing activities	(19,632)	(33,394)	(2,136)
Cash flows from financing activities:			
Proceeds from short-term borrowings	42,124	11,250	15,242
Payments on short-term borrowings	(37,226)	(9,825)	(17,569)
Principal payments on long-term debt	(10,800)	(2,424)	(2,057)
Proceeds from issuance of common stock, net of issuance costs	---	82,062	---
Proceeds from exercise of stock options and Employee Stock Purchase Plan	3,340	1,230	---
Cash distributions to stockholders	(1,417)	(40,000)	(6,150)
Principal payments under capital lease obligations	(1,064)	(1,050)	(1,257)
Net cash provided by (used in) financing activities	(5,043)	41,243	(11,791)
Effect of exchange rate changes on cash and cash equivalents	(398)	(413)	(376)
Increase in cash and cash equivalents	8,961	24,526	8,677
Cash and cash equivalents at beginning of period	35,714	11,188	2,511
Cash and cash equivalents at end of period	$ 44,675	$ 35,714	$11,188
Supplemental disclosure of cash flow information:			
Cash paid during the period for:			
Interest	$ 1,416	$ 1,377	$ 1,526
Income taxes	$ 20,332	$ 10,017	$ 1,608
Supplemental schedule of noncash investing and financial activities:			
Capital lease obligations incurred for the purchase of new equipment	$ ---	$ 762	$ 1,138
Acquisitions			
Fair value of assets acquired	$ 51,678	$ ---	$ ---
Less: Liabilities assumed	8,449	---	---
Stock and options issued	24,136	---	---
Debt issued	752	---	---
Cash acquired	802	---	---
Acquisitions, net of cash acquired	$ 17,539	$ ---	$ ---

The accompanying notes are an integral part of the consolidated financial statements.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Tables in thousands, except per share data)

1) DESCRIPTION OF BUSINESS.
MKS Instruments, Inc. (the "Company" or "MKS") is a worldwide developer, manufacturer, and supplier of instruments and components that are used to measure, control and analyze gases in semiconductor manufacturing and similar industrial manufacturing processes. The Company's products include pressure and flow measurement and control instruments; vacuum gauges, valves and components; gas analysis instruments; and digital process control network products. The Company is subject to risks common to companies in the semiconductor industry including, but not limited to, the highly cyclical nature of the semiconductor industry leading to recurring periods of over supply, development by the Company or its competitors of new technological innovations, dependence on key personnel and the protection of proprietary technology.

2) SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES.

BASIS OF PRESENTATION. The consolidated financial statements include the accounts of the Company and its subsidiaries. All significant intercompany accounts and transactions have been eliminated in consolidation.

HISTORICAL AND PRO FORMA (UNAUDITED) NET INCOME PER SHARE. The Company computes basic and diluted earnings per share in accordance with Statement of Financial Accounting Standards No. 128 ("SFAS 128") "Earnings per Share." SFAS 128 requires both basic earnings per share, which is based on the weighted average number of common shares outstanding, and diluted earnings per share, which is based on the weighted average number of common shares outstanding and all dilutive potential common equivalent shares outstanding. The dilutive effect of options is determined under the treasury stock method using the average market price for the period. Common equivalent shares are included in the per share calculations where the effect of their inclusion would be dilutive.

Historical net income per share in 1999 and 1998 is not meaningful because of the Company's conversion from an S corporation to a C corporation upon the closing of its initial public offering in 1999. Historical net income has been adjusted for the pro forma provision for income taxes calculated assuming the Company was subject to income taxation as a C corporation, at a pro forma tax rate of 38.0% in 1998, and at a pro forma tax rate of 37.1% in 1999.

The following is a reconciliation of basic to diluted pro forma and historical net income per share:

For the Year Ended December 31,	2000	1999		1998	
	Historical	Pro forma	Historical	Pro forma	Historical
Net income	$46,234	$18,412	$24,037	$ 5,044	$ 7,186
Shares used in net income per common shares - basic	25,175	22,784	22,784	18,053	18,053
Effect of dilutive securities:					
Employee and director stock options	1,121	1,002	1,170	485	667
Shares used in net income per common share - diluted	26,296	23,786	23,954	18,538	18,720
Net income per common share - basic	$ 1.84	$ 0.81	$ 1.05	$ 0.28	$ 0.40
Net income per common share - diluted	$ 1.76	$ 0.77	$ 1.00	$ 0.27	$ 0.38

For purposes of computing diluted earnings per share, weighted average common share equivalents do not include stock options with an exercise price greater than the average market price of the common shares during the period. Options to purchase 308,708, 33,500, and 24,643 shares of common stock were outstanding during 2000, 1999 and 1998, respectively, but were not included in the calculation of diluted net income per common share because the option price was greater than the average market price of the common shares during the period.

FOREIGN EXCHANGE. The functional currency of the Company's foreign subsidiaries is the applicable local currency. For those subsidiaries, assets and liabilities are translated to U.S. dollars at year-end exchange rates. Income and expense accounts are translated at the average exchange rates prevailing for the year. The resulting translation adjustments are included in accumulated other comprehensive income in consolidated stockholders' equity.

REVENUE RECOGNITION. Revenue from product sales is generally recognized upon shipment provided that persuasive evidence of an arrangement exists, the sales price is fixed or determinable, collectibility is reasonably assured and title and risk of loss have passed to the customer. The Company has no obligations to customers after the date products are shipped other than pursuant to warranty obligations. The Company provides for the estimated costs to fulfill customer warranty and other contractual obligations upon the recognition of the related revenue. Shipping and handling fees, if any, billed to customers are recognized as revenue. The related costs are recognized in cost of sales.

CASH AND CASH EQUIVALENTS AND INVESTMENTS. All highly liquid investments with an original maturity of three months or less at the date of purchase are considered to be cash equivalents.

Cash equivalents consist of the following:

December 31,	2000	1999
Cash and Money Market Instruments	$ 34,175	$ 22,156
Commercial Paper	---	5,558
Federal Government and Government Agency Obligations	---	6,000
State and Municipal Government Obligations	2,000	---
Corporate Obligations	8,500	2,000
	$ 44,675	$ 35,714

Short-term available-for-sale investments maturing within one year consist of the following:

December 31,	2000	1999
Federal Government and Government Agency Obligations	$ 4,101	$ 16,245
Corporate Obligations	1,000	5,501
Commercial Paper	---	4,641
Equity Securities	630	1,745
	$ 5,731	$ 28,132

Long-term available-for-sale investments consist of the following:

December 31,	2000	1999
Federal Government and Government Agency Obligations	$ ---	$ 1,063
State and Municipal Government Obligations	13,100	---
	$ 13,100	$ 1,063

The appropriate classification of investments in debt and equity securities is determined at the time of purchase. Debt securities that the Company has both the intent and ability to hold to maturity are carried at amortized cost. Debt securities that the Company does not have the intent and ability to hold to maturity or equity securities are classified either as "available-for-sale" or as "trading" and are carried at fair value. Marketable equity securities are carried at fair value and classified either as available-for-sale or trading. Unrealized gains and losses on securities classified as available-for-sale are included in accumulated other comprehensive income in consolidated stockholders' equity. Unrealized gains and losses on securities classified as trading are reported in earnings. The cost of securities sold is based on the specific identification method.

INVENTORIES. Inventories are stated at the lower of cost or market. Cost is determined on the first-in, first-out method.

PROPERTY, PLANT AND EQUIPMENT. Property, plant and equipment are stated at cost. Equipment acquired under capital leases is recorded at the present value of the minimum lease payments required during the lease period. Expenditures for major renewals and betterments that extend the useful lives of property, plant and equipment are capitalized. Expenditures for maintenance and repairs are charged to expense as incurred. When assets are sold or otherwise disposed of, the cost and related accumulated depreciation are eliminated from the accounts and any resulting gain or loss is recognized in earnings.

Depreciation is provided on the straight-line method over the estimated useful lives of 20 years for buildings and three to five years for machinery and equipment. Leasehold improvements are amortized over the shorter of the lease term or the estimated useful life of the leased asset.

INTANGIBLE ASSETS. Intangible assets resulting from the acquisitions of entities accounted for using the purchase method of accounting are estimated by management based on the fair value of assets received. These include acquired customer lists, workforce, technology, patents, trade name, covenants not to compete and goodwill. Intangible assets are amortized from three to seven years on a straight-line basis which represents the estimated periods of benefit.

IMPAIRMENT OF LONG-LIVED ASSETS. The Company evaluates the recoverability of its long-lived assets in accordance with Statement of Financial Accounting Standards "SFAS" No. 121, "Accounting for the Impairment of Long-Lived Assets and for Long-Lived Assets to be Disposed Of." SFAS No. 121 requires recognition of impairment of long-lived assets in the event the net book value of such assets exceeds the future undiscounted cash flows attributable to such assets.

RESEARCH AND DEVELOPMENT. Research and development costs are expensed as incurred.

NEW ACCOUNTING PRONOUNCEMENTS. In December 1999, the Securities and Exchange Commission issued Staff Accounting Bulletin No 101 ("SAB 101"), "Revenue Recognition". SAB 101 summarizes the staff's view in applying generally accepted accounting principles to revenue recognition. The Company adopted SAB 101 in fiscal year 2000. The adoption did not have a material affect on its financial statements.

USE OF ESTIMATES. The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the dates of the financial statements and the reported amounts of revenues and expenses during the reporting periods. Actual results could differ from those estimates.

3) FINANCIAL INSTRUMENTS AND RISK MANAGEMENT.

FOREIGN EXCHANGE RISK MANAGEMENT. The Company adopted the provisions of SFAS No.133 effective April 1,1999. The impact of adopting SFAS No. 133 was the recording of an unrealized loss of $16,000, net of taxes, in other comprehensive income. The Company hedges a portion of its forecasted foreign currency denominated intercompany sales of inventory, over a maximum period of fifteen months, using forward exchange contracts and currency options primarily related to Japanese and European currencies. These derivatives are designated as cash-flow hedges, and changes in their fair value are carried in accumulated other comprehensive income until the underlying forecasted transaction occurs. Once the underlying forecasted transaction is realized, the appropriate gain or loss from the derivative designated as a hedge of the transaction is reclassified from accumulated other comprehensive income to cost of sales. The Company utilizes an interest rate swap to fix the interest rate on certain variable term loans in order to minimize the effect of changes in interest rates on earnings. During 2000 and 1999, net realized gains of $6,000 and net realized losses of $104,000, respectively, were recorded in earnings. As of December 31, 2000 the amount that will be reclassified from accumulated other comprehensive income to earnings over the next twelve months is an unrealized gain of $375,000, net of taxes. The ineffective portion of the derivatives is primarily related to option premiums, is recorded in cost of sales, and was $304,000 in 2000.

Prior to the adoption of SFAS No. 133, the Company entered into forward exchange contracts and local currency purchased options to hedge a portion of its probable anticipated, but not firmly committed transactions. The anticipated transactions whose risks were being hedged were the intercompany sales of inventory by the U.S. parent to the foreign subsidiary payable in the foreign subsidiary's local currency. The time period of the anticipated transactions that were hedged generally approximated one year. The Company also used forward exchange contracts to hedge firm commitments. Market value gains and losses on forward exchange contracts were recognized immediately in earnings unless a firm commitment existed. Market value gains and premiums on local currency purchased options on probable anticipated transactions and market value gains and losses on forward exchange contracts hedging firm commitments were recognized when the hedged transaction occurred. These contracts, which related primarily to Japanese and European currencies generally had terms of twelve months or less. Forward exchange contracts received hedge accounting on firmly committed transactions when they were designated as a hedge of the designated currency exposure and were effective in minimizing such exposure. Options received hedge accounting on probable anticipated transactions when they were designated as a hedge of the currency exposure and were effective in minimizing such exposure.

Realized and unrealized gains and losses on forward exchange contracts and local currency purchased option contracts that do not qualify for hedge accounting are recognized immediately in earnings. The cash flows resulting from forward exchange contracts and local currency purchased options that qualify for hedge accounting are classified in the statement of cash flows as part of cash flows from operating activities. Cash flows resulting from forward exchange contracts and local currency purchased options that do not qualify for hedge accounting are classified in the statement of cash flows as investing activities. The company does not hold or issue derivative financial instruments for trading purposes.

Forward exchange contracts with notional amounts totaling $1,500,000, $4,000,000 and $8,000,000 to exchange foreign currencies for U.S. dollars were outstanding at December 31, 2000, 1999 and 1998, respectively. Of such forward exchange contracts, $1,500,000, $4,000,000 and $7,800,000 to exchange Japanese yen for U.S. dollars, were outstanding at December 31, 2000, 1999 and 1998, respectively. Local currency purchased options with notional amounts totaling $25,390,000, $11,800,000 and $10,221,000 to exchange foreign currencies for U.S. dollars were outstanding at December 31, 2000, 1999 and 1998, respectively.

Foreign exchange gains of $37,000 and $415,000 and foreign exchange losses of $168,000 on forward exchange contracts which did not qualify for hedge accounting were recognized in earnings during 2000, 1999 and 1998, respectively, and are classified in Other income, net. Gains and losses on forward exchange contracts and local currency purchased options that qualify for hedge accounting are classified in cost of goods sold and totaled a gain of $6,000, a loss of $104,000 and a gain of $310,000 for the years ended December 31, 2000, 1999 and 1998, respectively.

The fair values of forward exchange contracts at December 31, 2000 and 1999, determined by applying period end currency exchange rates to the notional contract amounts, amounted to an unrealized gain of $164,000 and an unrealized loss of $547,000, respectively. The fair values of local currency purchased options at December 31, 2000 and 1999, which were obtained through dealer quotes were immaterial.

The Company recorded a foreign exchange translation gain on intercompany payables of $1,000,000 in Other income, net in 1998. The Company has hedged certain intercompany payables with currency options. Since these derivatives hedge existing amounts that are denominated in foreign currencies, the options do not qualify for hedge accounting under SFAS No.133.

The market risk exposure from forward exchange contracts is assessed in light of the underlying currency exposures and is controlled by the initiation of additional or offsetting foreign currency contracts. The market risk exposure from options is limited to the cost of such investments.

INTEREST RATE RISK MANAGEMENT. The Company utilizes an interest rate swap to fix the interest rate on certain variable rate term loans in order to minimize the effect of changes in interest rates on earnings. In 1998, the Company entered into a four-year interest rate swap agreement on a declining notional amount basis which matches with the scheduled principal payments with a major financial institution for the notional amount of $10,528,000 equal to the term loans described in Note 6. Under the agreement, the Company pays a fixed rate of 5.85% on the notional amount and receives LIBOR. The interest differential payable or accruable on the swap agreement is recognized on an accrual basis as an adjustment to interest expense. The criteria used to apply hedge accounting for this interest rate swap is based upon management designating the swap as a hedge against the variable rate debt combined with the terms of the swap matching the underlying debt including the notional amount, the timing of the interest reset dates, the indices used and the paydates. At December 31, 2000, the fair value of this interest rate swap, which represents the amount the Company would receive or pay to terminate the agreement, is not material, based on dealer quotes. The variable rate received on the swap at December 31, 2000 was 6.82125%.

The market risk exposure from the interest rate swap is assessed in light of the underlying interest rate exposures. Credit risk exposure from the swap is minimized as the agreement is with a major financial institution. The Company monitors the credit worthiness of this financial institution and full performance is anticipated.

CONCENTRATIONS OF CREDIT RISK. The Company's significant concentrations of credit risk consist principally of cash and cash investments, forward exchange contracts, and trade accounts receivable. The Company maintains cash and cash equivalents with financial institutions including the bank it has borrowings with. The Company maintains cash investments primarily in U.S. Treasury and government agency securities and corporate debt securities, rated AA or higher, which have minimal credit risk. The Company places forward currency contracts with high credit-quality financial institutions in order to minimize credit risk exposure. Concentrations of credit risk with respect to accounts receivable are limited due to the large number of diverse and geographically dispersed customers. Credit is extended for all customers based on financial condition and collateral is not required.

FAIR VALUE OF FINANCIAL INSTRUMENTS. The fair value of the term loans, including the current portion, approximates its carrying value given its variable rate interest provisions. The fair value of marketable securities is based on quoted market prices. The fair value of mortgage notes is based on borrowing rates for similar instruments and approximates its carrying value. For all other balance sheet financial instruments, the carrying amount approximates fair value because of the short period to maturity of these instruments.

4) INVENTORIES.

Inventories consist of the following:

December 31,	2000	1999
Raw material	$12,060	$6,644
Work in process	14,703	7,026
Finished goods	22,455	13,980
	$49,218	$27,650

5) PROPERTY, PLANT AND EQUIPMENT.

Property, plant and equipment consist of the following:

December 31,	2000	1999
Land	$ 8,677	$ 9,100
Buildings	25,003	26,081
Machinery and equipment	32,787	30,175
Furniture and fixtures	15,554	12,968
Leasehold improvements	2,142	1,966
	84,163	80,290
Less: accumulated depreciation and amortization	46,873	47,464
	$37,290	$32,826

Depreciation and amortization of property, plant and equipment totaled $6,537,000, $6,209,000 and $6,242,000 for the years ended December 31, 2000, 1999 and 1998, respectively. During the year ended December 31, 2000, MKS retired $6,727,000 of fully depreciated property, plant and equipment.

6) DEBT.

CREDIT AGREEMENTS AND SHORT-TERM BORROWINGS. In February 1996, the Company entered into loan agreements with two banks, which provided access to a revolving credit facility. The revolving credit facility provided for uncollateralized borrowings up to $30,000,000, and expired on December 31, 1999. Interest on borrowings was payable quarterly at either the banks' base rate or the LIBOR Rate, as defined in the agreement, at the Company's option. At December 31, 1999, the Company had no borrowings under this revolving credit facility.

Effective January 1, 2000, the Company entered into a loan agreement with the same two banks, which provides access to a revolving credit facility. The revolving credit facility provides for uncollateralized borrowings up to $40,000,000, and expires April 30, 2001. Interest on borrowings is payable quarterly at either the banks' base rate, or the LIBOR Rate, as defined in the agreement.

Additionally, certain of the Company's foreign subsidiaries have lines of credit and short-term borrowing arrangements with various financial institutions which provide for aggregate borrowings as of December 31, 2000 of up to $17,533,000, which generally expire and are renewed at six month intervals. At December 31, 2000 and 1999, total borrowings outstanding under these arrangements were

$15,719,000 and $12,423,000, respectively, at interest rates ranging from 1.350% to 1.875% and 1.2% to 1.7%, respectively. A portion of the foreign short-term borrowings are guaranteed by a domestic bank.

LONG-TERM DEBT. Long-term debt consists of the following:

December 31,	2000	1999
Term loans	$2,620	$ 8,862
Mortgage notes	1,963	2,824
Total long-term debt	4,583	11,686
Less: current portion	1,354	7,346
Long-term debt less current portion	$3,229	$ 4,340

On November 1, 1993, the Company entered into a term loan agreement with a bank, which provided for borrowings of $10,000,000. The final principal amount on this term loan was paid in November 2000. The loan was collateralized by certain land, buildings, and equipment. Interest was payable monthly at either the bank's base rate, at a rate based on the long-term funds rate, or at the LIBOR Rate, as defined in the agreement, at the Company's option. On October 31, 1995, the Company also entered into a term loan agreement with the same bank, which provided additional uncollateralized borrowings of $7,000,000. Principal payments are payable in equal monthly installments of $83,000 through June 1, 2002, with the remaining principal payment due on June 30, 2002. Interest is payable monthly at either the bank's base rate or at the LIBOR Rate, as defined in the agreement, at the Company's option.

In connection with the purchase of Telvac Engineering, Ltd., the Company issued term loans of $752,000. Principal payments of $51,000 are due on an annual basis through December 1, 2004 with the remaining principal due on May 1, 2005. Interest is payable semi-annually at the UK base rate.

At December 31, 2000, the interest rates in effect for the outstanding term loan borrowings ranged from 6.0% to 7.51625% and was 7.40% at December 31, 1999.

The terms of the revolving credit facility and term loan agreements, as amended, contain, among other provisions, requirements for maintaining certain levels of tangible net worth and other financial ratios. The agreement also contains restrictions with respect to acquisitions. Under the most restrictive covenant, the operating cash flow to debt service ratio for a fiscal quarter shall not be less than 1.25 to 1.0. In the event of default of these covenants or restrictions, any obligation then outstanding under the loan agreement shall become payable upon demand by the bank.

The Company has loans outstanding from various foreign banks in the form of mortgage notes at interest rates ranging from 2.0% to 6.1%. Principal and interest are payable in monthly installments through 2010. The loans are collateralized by mortgages on certain of the Company's foreign properties.

Aggregate maturities of long-term debt over the next five years are as follows:

Year ending December 31,	Aggregate Maturities
2001	$1,354
2002	1,324
2003	410
2004	414
2005	713
Thereafter	368
	$4,583

7) COMMITMENTS AND CONTINGENCIES.

The Company leases certain of its facilities and machinery and equipment under capital and operating leases expiring in various years through 2002 and thereafter. Generally, the facility leases require the Company to pay maintenance, insurance and real estate taxes. Rental expense under operating leases totaled $3,037,000, $2,950,000 and $2,388,000, for the years ended December 31, 2000, 1999 and 1998, respectively.

Minimum lease payments under operating and capital leases are as follows:

Year ending December 31,	Operating Leases	Capital Leases
2001	$2,823	$ 675
2002	1,654	614
2003	1,464	291
2004	1,316	106
2005	1,062	---
Thereafter	1,574	---
Total minimum lease payments	$9,893	1,686
Less: amounts representing interest		129
Present value of minimum lease payments		1,557
Less: current portion		610
Long-term portion		$ 947

Prior to its initial public offering, the Company entered into a Tax Indemnification and S Corporation Distribution Agreement with its then existing stockholders (the "Pre-IPO stockholders"). The agreement includes provisions for the payment, with interest, by the Pre-IPO stockholders or MKS, as the case may be, for the difference between the $40,000,000 distributed as an estimate of the amount of the accumulated adjustments account as of April 4, 1999, which is the date the Company's S Corporation status was terminated, and the actual amount of the accumulated adjustments account on that day. The actual amount of the accumulated adjustments account was $41,416,619. Accordingly, the Company made an additional distribution of $1,416,619, plus interest of $177,524, to the Pre-IPO stockholders during the three months ended September 30, 2000. The amount of the additional distribution payable had been estimated to be $3,350,000. This estimated amount was charged directly to retained earnings during 1999 and had no impact on net income or earnings per share. The difference between the actual additional distribution and the estimated additional distribution was credited directly to retained earnings during the three months ended September 30, 2000 and had no impact on net income or earnings per share. The amount of the accumulated adjustments account can be affected by future income tax audits of MKS. If any audit increases or decreases the accumulated adjustments account, MKS or the Pre-IPO stockholders, as the case may be, will also be required to make a payment, with interest, of such difference to the other party. No shareholders, other than the Pre-IPO stockholders, are parties to the Tax Indemnification and S Corporation Distribution Agreement.

8) STOCKHOLDERS' EQUITY.

COMMON STOCK. In March 1999, the Company amended its Articles of Organization to: i) eliminate the authorized shares of Class A Common Stock and Class B Common Stock; ii) increase the authorized number of shares of Common Stock to 50,000,000 shares; iii) authorize 2,000,000 shares of Preferred Stock, $0.01 par value per share; and iv) provide that each outstanding share of Class A Common Stock and Class B Common Stock be converted into one share of Common Stock.

On April 5, 1999 the Company closed the initial public offering of its Common Stock. In connection with this offering and the exercise of an over-allotment option by the underwriters, the Company sold

6,375,000 shares of Common Stock at a price of $14.00 per share. The net proceeds to the Company were approximately $82,000,000. Underwriting discounts and commissions were approximately $6,200,000 and other offering costs were approximately $1,000,000.

On April 5, 1999 the Company distributed $40,000,000, which was the estimated amount of the Company's undistributed S corporation earnings as of the day prior to the closing of the offering.

STOCK PURCHASE PLANS. The Company's 1999 Employee Stock Purchase Plan (the "Purchase Plan") authorizes the issuance of up to an aggregate of 450,000 shares of Common Stock to participating employees. Offerings under the Purchase Plan commence on June 1 and December 1 and terminate, respectively, on November 30 and May 31. Under the Purchase Plan, eligible employees may purchase shares of Common Stock through payroll deductions of up to 10% of their compensation. The price at which an employee's option is exercised is the lower of (1) 85% of the closing price of the Common Stock on the NASDAQ National Market on the day that each offering commences or (2) 85% of the closing price on the day that each offering terminates. During 2000 and 1999 the Company issued 83,118 and 36,520 shares, respectively, of Common Stock to employees who participated in the Purchase Plan at exercise prices of $21.04 and $12.86 in 2000 and at an exercise price of $12.94 per share in 1999. As of December 31, 2000 there were 330,362 shares reserved for issuance.

The Company's Amended and Restated 1999 Foreign Employee Stock Purchase Plan (the "Foreign Purchase Plan") authorizes the issuance of up to an aggregate of 50,000 shares of Common Stock to participating employees. The initial offering under the Foreign Purchase Plan commenced on March 1, 2000 and terminated May 31, 2000. Additional offerings under the Foreign Purchase Plan commence on June 1 and December 1 and terminate, respectively, on November 30 and May 31. Under the Foreign Purchase Plan, eligible employees may purchase shares of Common Stock through payroll deductions of up to 10% of their compensation. The price at which an employee's option is exercised is the lower of (1) 85% of the closing price of the Common Stock on the NASDAQ National Market on the day that each offering commences or (2) 85% of the closing price on the day that each offering terminates. During 2000, the Company issued 7,248 shares of Common Stock to employees who participated in the Foreign Purchase Plan at exercise prices of $33.47 and $12.86 per share. As of December 31, 2000 there were 42,752 shares reserved for issuance.

STOCK OPTION PLANS. On January 9, 1998, the stockholders of the Company approved the following: (1) an increase in the number of shares that may be granted under the 1995 Stock Incentive Plan to 3,750,000 shares of common stock; (2) the adoption of the 1997 Director Stock Option Plan pursuant to which options may be granted to purchase up to an aggregate of 300,000 shares of common stock; (3) the adoption of the 1997 Employee Stock Purchase Plan pursuant to which the Company may issue up to an aggregate of 450,000 shares of common stock; and (4) that 3,750,000 shares, 300,000 shares, and 450,000 shares of common stock be reserved for issuance under the 1995 Stock Incentive Plan, the 1997 Director Stock Option Plan, and the 1997 Employee Stock Purchase Plan, respectively. The 1997 Employee Stock Purchase Plan was amended and restated on April 22, 1999, and the Plan's name was changed to the Amended and Restated 1999 Employee Stock Purchase Plan.

In May 2000, the stockholders of the Company approved an annual increase in the number of shares that may be granted under the 1995 Stock Incentive Plan of 4% of the total shares of the Company's stock on July 1 of each year. The annual increase will occur until such time as the aggregate number of shares which may be issued under the Plan is 9,750,000 shares, subject to adjustment for certain changes in MKS' capitalization.

The Company grants options to employees under the 1995 Stock Incentive Plan (the "Plan") and to directors under the 1996 Director Stock Option Plan and the 1997 Director Stock Option Plan (the "Director Plans").

At December 31, 2000, 1,428,846 options to purchase shares of the Company's common stock were reserved for issuance under the Plan. At December 31, 2000, under the Director Plans, options to purchase 210,000 shares of common stock were reserved for issuance. Stock options are granted at 100% of the fair value of the Company's common stock. Generally, stock options granted under the Plan prior to 2000 vest 20% after one year and 5% per quarter thereafter, and expire 10 years after the grant date. Generally, stock options granted under the Plan in 2000 vest 25% after one year and 6.25% per quarter thereafter, and expire 10 years after the grant date. Under the Director Plans, certain options granted in 1999 vest immediately. The remainder of the options granted in 1997 and later vest at the earlier of (1) the next annual meeting, (2) 13 months from date of grant, or (3) the effective date of an acquisition as defined in the Director Plans.

The following table presents the activity for options under the Plan:

Year Ended December 31,	2000		1999		1998	
	Options	Weighted Average Exercise Price	Options	Weighted Average Exercise Price	Options	Weighted Average Exercise Price
Outstanding-- beginning of period	2,552,223	$ 8.21	2,098,207	$ 5.20	1,564,449	$4.50
Granted	637,092	27.91	678,971	16.40	629,969	6.80
Exercised	(303,927)	5.25	(168,162)	4.56	(2)	4.43
Forfeited or Expired	(32,508)	15.78	(56,793)	5.76	(96,209)	4.43
Outstanding-- end of period	2,852,880	$12.84	2,552,223	$ 8.21	2,098,207	$5.20
Exercisable at end of period	1,423,935	$ 6.64	1,047,748	$ 4.82	778,473	$4.46

The following table summarizes information with respect to options outstanding and exercisable under the Plan at December 31, 2000:

	Options Outstanding			Options Exercisable	
	Number of Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life (In Years)	Number of Shares	Weighted Average Exercise Price
$4.43 - $8.92	1,653,117	$ 5.50	6.66	1,223,622	$ 5.18
$11.98 - $14.50	509,646	$14.09	8.32	169,188	$13.97
$17.94 - $30.44	282,200	$23.76	9.26	31,125	$24.30
$32.00 - $61.50	407,917	$33.43	9.12	---	---
	2,852,880	$12.84	7.57	1,423,935	$ 6.64

The following table presents activity for options under the Director Plans:

Year Ended December 31,	2000		1999		1998	
	Options	Weighted Average Exercise Price	Options	Weighted Average Exercise Price	Options	Weighted Average Exercise Price
Outstanding-- beginning of period	100,368	$10.95	34,368	$ 4.81	30,748	$4.43
Granted	24,000	44.88	66,000	14.15	3,620	8.00
Exercised	(25,092)	10.95	---	---	---	---
Outstanding-- end of period	99,276	$19.15	100,368	$10.95	34,368	$4.81
Exercisable at end of period	75,276	$10.95	76,368	$ 9.86	26,228	$4.43

The following table summarizes information with respect to options outstanding and exercisable under the Director Plans at December 31, 2000:

	Options Outstanding			Options Exercisable	
	Number of Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life (In Years)	Number of Shares	. Weighted Average Exercise Price
$4.43 - $8.00	25,776	$ 4.87	5.85	25,776	$ 4.81
$14.00 - $14.40	49,500	$14.15	8.20	49,500	$14.15
$44.875	24,000	$44.88	9.38	---	---
	99,276	$19.15	7.87	75,276	$10.95

The Company has adopted the disclosure-only provisions of Statement of Financial Accounting Standards No. 123 (SFAS No. 123), "Accounting for Stock-Based Compensation." The Company has chosen to continue to account for stock-based compensation using the intrinsic value method prescribed in Accounting Principles Board Opinion No. 25, "Accounting for Stock Issued to Employees" and related interpretations. The Company is required to disclose pro forma net income and net income per common share amounts had compensation cost for the Company's stock based compensation plans been determined based on the fair value at the grant date for awards under the plans. Had compensation expense for the stock based compensation plans been consistent with the method of SFAS No. 123, the amounts reported for 2000 would have been:

	2000		1999	
	As Reported	Pro forma for SFAS No. 123	As Reported	Pro forma for SFAS No. 123
Historical net income				
Historical net income per share:	$46,234	$42,946	$24,037	$23,098
Basic	$ 1.84	$ 1.71	$ 1.05	$ 1.01
Diluted	$ 1.76	$ 1.63	$ 1.00	$ 0.96
Pro forma net income				
Pro forma net income per share:			$18,412	$17,559
Basic			$ 0.81	$ 0.77
Diluted			$ 0.77	$ 0.74

The weighted average fair value of options at the date of grant was estimated using the Black-Scholes model and was $22.74 with the following assumptions in 2000: expected life of 5 years, weighted average interest rate of 6.37%, expected volatility of 88%, and no dividend yield. In 1999, the weighted average fair value of options at the date of grant was $9.54, with the following assumptions: expected life of 5 years, weighted average interest rate of 5.49%, expected volatility of 64%, and no divided yield. Had the fair value based method prescribed in SFAS No. 123 been used to account for stock-based compensation cost in 1998, there would have been no change in net income and net income per share from that reported based on the following assumptions: dividend yield of 8%, interest rate of 5.44% and an expected life of 8 years.

The fair value of purchase rights granted in 2000 and 1999 under the Purchase Plan was $7.64 and $5.11, respectively. The fair value of the employees' purchase rights was estimated using the Black-Scholes model with the following assumptions in 2000: expected life of 6 months, interest rate of

5.57%, expected volatility of 88%, and no dividend yield, and the following assumptions in 1999: expected life of 6 months, interest rate of 4.87%, expected volatility of 64%, and no dividend yield.

ACCUMULATED OTHER COMPREHENSIVE INCOME. The balance of accumulated other comprehensive income was comprised of the following:

	Cumulative Translation Adjustments	Unrealized Gain on Investments	Financial Instruments Designated as Cash Flow Hedges	Accumulated Other Comprehensive Income
Balance at December 31, 1998	$1,875	$ 311	---	$2,186
Non-recurring deferred tax charge	(497)	(163)	---	(660)
Foreign currency translation adjustment, net of taxes of $(55)	(80)	---	---	(80)
Unrealized gain on investments, net of taxes of $377	---	815	---	815
Changes in value of financial instruments designated as cash flow hedges, net of taxes of $(232)	---	---	(228)	(228)
Balance at December 31, 1999	$1,298	$ 963	$(228)	$2,033
Foreign currency translation adjustment, net of taxes of $(464)	(765)			(765)
Unrealized gain on investments, net of taxes of $(421)		(649)		(649)
Changes in value of financial instruments designated as cash flow hedges, net of taxes of $379			603	603
Balance at December 31, 2000	$ 533	$ 314	$ 375	$1,222

9) INCOME TAXES.

Prior to its initial public offering in 1999, the Company was treated as an S corporation for federal income tax purposes. As an S corporation, the Company was not subject to federal, and certain state, income taxes. The Company terminated its S corporation status upon the closing of its initial public offering in 1999 and became subject to taxes at C corporation tax rates. This change in tax status and tax rates resulted in a non-recurring, non-cash deferred tax credit to net income of $3,770,000 and a deferred tax charge to other comprehensive income of $660,000 in 1999.

The Pre-IPO stockholders are liable for individual Federal, and certain state, income taxes on their allocated portions of the Company's taxable income as an S corporation. For the tax year ending December 31, 1999, the Pre-IPO stockholders were allocated a portion of the Company's 1999 taxable income. A reconciliation of the Company's 2000 and 1999 effective tax rate to the U.S. federal statutory rate follows:

	2000	1999
U.S. Federal income tax statutory rate	35.0%	35.0%
Non-recurring deferred tax credit	---	(12.8)
Pre-IPO stockholder 1999 allocated taxable income	---	(6.8)
State income taxes, net of federal benefit	3.2	2.5
Effect of foreign operations taxed at various rates	.9	2.1
Foreign sales corporation tax benefit	(1.6)	(1.6)
Other	---	(0.5)
	37.5%	17.9%

As the Company was not subject to Federal income taxes in 1998, a reconciliation of the effective tax rate to the Federal statutory rate is not meaningful for that year.

The components of income before income taxes and the historical related provision for income taxes consist of the following:

Year Ended December 31,	2000	1999	1998
Income before income taxes:			
United States	$65,493	$25,590	$6,169
Foreign	8,456	3,678	1,966
	73,949	29,268	8,135
Current taxes:			
United States Federal	23,230	6,269	---
State	3,925	1,192	197
Foreign	3,697	1,806	784
	30,852	9,267	981
Deferred taxes:			
United States Federal	(2,930)	(4,025)	---
State	(207)	(27)	(39)
Foreign	---	16	7
	(3,137)	(4,036)	(32)
Provision for income taxes	$27,715	$ 5,231	$ 949

At December 31, 2000 and 1999 the components of the deferred tax asset and deferred tax liability were as follows:

	2000	1999
Deferred tax assets (liabilities):		
Inventories	$2,186	$1,434
Intercompany profits	2,572	1,362
Depreciable assets	911	746
Compensation	921	362
Investment booked under the equity method	(753)	(557)
Other	(7)	250
Total	$5,830	$3,597

10) EMPLOYEE BENEFIT PLANS.

The Company has a 401(k) profit-sharing plan for U.S. employees meeting certain requirements in which eligible employees may contribute from 1% up to 12% of their compensation. The Company, at its discretion, may provide a matching contribution which will generally match up to the first 2% of each participant's compensation, plus 25% of the next 4% of compensation. At the discretion of the Board of Directors, the Company may also make additional contributions for the benefit of all eligible employees. The Company's contributions are generally paid annually, and were $2,285,000 and $1,182,000 for the years ended December 31, 1999 and 1998. Approximately $2,980,000 has been accrued as the estimated Company contribution for the year ended December 31, 2000 and is included in accrued compensation.

The Company maintains a bonus plan which provides cash awards to key employees, at the discretion of the Compensation Committee of the Board of Directors, based upon operating results and employee performance. Bonus expense to key employees was $5,085,000, $3,213,000, and none for the years ended December 31, 2000, 1999 and 1998, respectively.

11) GEOGRAPHIC FINANCIAL INFORMATION AND SIGNIFICANT CUSTOMER. See Note 1 for a brief description of the Company's business. The Company is organized around three similar product lines domestically and by geographic locations internationally and has three reportable segments: North America, Far East, and Europe. Net sales to unaffiliated customers are based on the location in which the sale originated. Transfers between geographic areas are at negotiated transfer prices and have been eliminated from consolidated net sales. Income from operations consists of total net sales less operating expenses and does not include either interest income, interest expense or income taxes. The Company had one customer comprising 25%, 22% and 16% of net sales for the years ended December 31, 2000, 1999 and 1998, respectively. This data is presented in accordance with SFAS 131, "Disclosures About Segments of an Enterprise and Related Information."

Year Ended December 31, 2000	North America	Far East	Europe	Total
Net sales to unaffiliated customers	$230,839	$66,903	$29,213	$326,955
Intersegment net sales	65,743	1,323	1,249	68,315
Depreciation and amortization	9,892	226	406	10,524
Income from operations	64,315	4,770	3,094	72,179
Segment assets	210,154	39,436	16,793	266,383
Long-lived assets	70,723	5,703	3,997	80,423
Capital expenditures	10,217	154	625	10,996

Year Ended December 31, 1999	North America	Far East	Europe	Total
Net sales to unaffiliated customers	$128,562	$38,734	$19,787	$187,083
Intersegment net sales	36,884	706	986	38,576
Depreciation and amortization	5,543	252	414	6,209
Income from operations	24,608	1,413	1,590	27,611
Segment assets	132,971	31,272	10,362	174,605
Long-lived assets	29,656	6,524	2,575	38,755
Capital expenditures	5,013	241	251	5,505

Year Ended December 31, 1998	North America	Far East	Europe	Total
Net sales to unaffiliated customers	$ 95,607	$23,902	$20,254	$139,763
Intersegment net sales	26,657	290	1,015	27,962
Depreciation and amortization	5,627	210	405	6,242
Income from operations	6,319	1,298	1,518	9,135
Segment assets	65,560	20,768	9,904	96,232
Long-lived assets	28,960	5,655	3,084	37,699
Capital expenditures	2,635	179	323	3,137

Included in North America are the United States and Canada. Net sales to unaffiliated customers from the United States were $230,839,000, $128,560,000 and $94,449,000 for the years ended December 31, 2000, 1999 and 1998, respectively. Long-lived assets within the United States amounted to $70,723,000, $28,729,000 and $28,902,000 at December 31, 2000, 1999 and 1998, respectively.

Included in the Far East are Japan, Korea, Singapore and Taiwan. Included in Europe are Germany, France and the United Kingdom. Net sales to unaffiliated customers from Japan were $50,187,000, $30,696,000 and $21,153,000 for the years ended December 31, 2000, 1999 and 1998, respectively. Long-lived assets within Japan amounted to $5,460,000, $6,266,000 and $5,431,000 at December 31, 2000, 1999 and 1998, respectively.

12) ACQUISITIONS.

MKS completed several acquisitions in fiscal 2000, all of which have been accounted for under the purchase method of accounting. Accordingly, the results of operations for each acquired company have been included in the MKS consolidated results of operations from the date of purchase. On March 10, 2000 the Company acquired Compact Instrument Technology, LLC ("Compact Instrument"), a start-up company with proprietary technology in process monitoring for semiconductor manufacturing and other manufacturing processes. The acquisition has been accounted for by the purchase method of accounting. The purchase price was $8,700,000 and consisted of $8,400,000 in MKS common stock and $300,000 in assumed net liabilities. The purchase price was allocated to the assets acquired based upon their estimated fair values. This allocation resulted in goodwill of $7,600,000 and acquired technology of $1,600,000, which are being amortized on a straight-line basis over 5 years and 3 years, respectively.

On May 5, 2000 the Company acquired Telvac Engineering, Ltd., a UK-based, privately held manufacturer of vacuum subsystems. The acquisition has been accounted for by the purchase method of accounting. The purchase price was $1,600,000, and consisted of $750,000 in cash, $750,000 in debt and $100,000 in other acquisition expenses. The purchase price was allocated to the assets acquired based on their estimated fair values. This allocation resulted in goodwill of $800,000, which is being amortized on a straight-line basis over 5 years.

On July 21, 2000 the Company acquired Spectra International, LLC, a privately held company with products and technology in process monitoring. The purchase price consisted of $9,700,000 cash; 183,293 shares of MKS common stock valued at $6,500,000; fully vested options to purchase 83,675 shares of MKS common stock valued at $2,400,000, calculated at an exchange ratio of 0.4768 shares of MKS common stock per share of Spectra common stock; and $400,000 in acquisition costs. The transaction also includes contingent earnout payments of up to an aggregate of $12,000,000 over 5 years, which will be treated as compensation expense as it is earned. The purchase price was allocated to the assets acquired based on their estimated fair values. Goodwill, acquired technology and other intangible assets are being amortized on a straight-line basis over 5 to 7 years. The allocation of the purchase price is as follows:

Current assets	$ 5,400
Acquired intangibles	7,900
Acquired technology	3,700
Goodwill	6,100
Other assets	400
Liabilities and debt assumed	(4,500)
	$19,000

The intangible assets include approximately $0.3 million for acquired in-process technology for projects that did not have future alternative uses. This allocation represents the estimated fair value based on risk-adjusted cash flows related to the in-process technology projects. At the date of the acquisition, the development of these projects had not yet reached technological feasibility, and the technology in progress had no alternative future uses. Accordingly, these costs were expensed in the three months ended September 30, 2000.

On September 6, 2000 the Company acquired D.I.P., Inc., a privately held company with products and technology in digital process control. The purchase price was $6,900,000 cash; 231,392 shares of

MKS common stock valued at $6,800,000; and $300,000 in acquisition costs. The purchase price was allocated to the assets acquired based on their estimated fair values. Goodwill, acquired technology and other intangibles are being amortized on a straight-line basis over 3 to 5 years. The allocation of the purchase is as follows:

Current assets	$ 3,000
Acquired intangibles	1,700
Acquired technology	7,200
Goodwill	4,300
Other assets	200
Liabilities assumed	(2,400)
	$14,000

The following unaudited pro forma information presents a summary of the historical results of operations of the Company as if the acquisitions had occurred at the beginning of each year.

Year Ended December 31,	2000	1999
Net sales	$339,474	$205,508
Net income	$ 43,979	$ 19,248
Net income per share:		
Basic	$ 1.69	$ 0.82
Diluted	$ 1.65	$ 0.79

These unaudited pro forma results have been prepared for comparative purposes only and do not purport to be indicative of the results of operations which actually would have resulted had the acquisitions occurred at the beginning of the period, or which may result in the future.

13) INTANGIBLE ASSETS.
Intangible assets include the following at December 31, 2000:

(in thousands)	2000	Useful Lives
Patents, Proprietary technology and other acquired intangibles	$21,912	3 - 7 years
Goodwill	18,784	5 - 7 years
	$40,696	
Less: accumulated amortization	(3,987)	
	$36,709	

14) SUBSEQUENT EVENT.
On January 26, 2001 the Company closed its acquisition of Applied Science and Technology, Inc. (ASTeX), a Wilmington, Massachusetts based company that designs, develops, and manufactures precision reactive gas solutions.

Under the terms of the agreement, each outstanding share of ASTeX common stock was exchanged for 0.7669 newly issued shares of common stock of MKS, resulting in the issuance of approximately 11.2 million shares of common stock of MKS, representing approximately 30% of MKS's then outstanding shares. This acquisition will be accounted for under the pooling of interests method of accounting.

CORPORATE INFORMATION

BOARD OF DIRECTORS

John R. Bertucci, Chairman and Chief Executive Officer,
MKS Instruments, Inc.

Richard S. Chute, Esquire, Hill & Barlow,
a Professional Corporation

Owen W. Robbins, Executive Vice President (retired),
Teradyne, Inc.

Robert J. Therrien, President and Chief Executive Officer,
Brooks Automation, Inc.

Louis P. Valente, Chairman and Chief Executive Officer,
Palomar Medical Technologies, Inc.

Robert R. Anderson, Chairman and Chief Executive Officer,
Yield Dynamics, Inc. (retired)

Hans-Jochen Kahl, Managing Director, Leybold AG (retired)

MANAGEMENT

John R. Bertucci, Chairman and Chief Executive Officer

Dr. Peter R. Younger, President and Chief Operating Officer

Ronald C. Weigner, Vice President and Chief Financial Officer

William P. Donlan, Vice President, Treasurer and Corporate Controller

Paul Blackborow, Vice President, Corporate Marketing

Richard Post, Vice President, Business Development

William D. Stewart, Vice President and General Manager,
HPS Products

Robert L. Klimm, Vice President and General Manager,
Materials Delivery and Analysis Products

F. Thomas McNabb, Vice President and General Manager,
Pressure Measurement and Control Products

John E. Ross, Vice President and General Manager,
ASTeX Products

Leo Berlinghieri, Vice President, Global Sales and Service

Gerald G. Colella, Vice President, Global Business Operations

Donald K. Smith, Vice President and Chief Technical Officer

George E. Manning, Vice President, Global Human Resources

Richard J. Arndt, Director of Acquisition Integration

BUSINESS OPERATIONS

MKS Instruments, Inc.
Pressure Measurement and Control Products
Andover, Massachusetts

MKS Instruments, Inc.
Materials Delivery and Analysis Products
Methuen, Massachusetts

MKS Instruments, Inc.
ASTeX Products
Wilmington, Massachusetts
Colorado Springs, Colorado
Berlin, Germany

MKS Instruments, Inc.
Advanced Technology Group
Woburn, Massachusetts

MKS Instruments, Inc.
HPS Products, Boulder, Colorado

MKS Instruments, Inc.
Austin, Texas
Richardson, Texas

MKS Instruments, Inc.
Santa Clara, California

MKS Instruments, Inc.
D.I.P. Products, Riverside, California

MKS Instruments, Inc.
Spectra Products
Morgan Hill, California
Crewe, England

MKS Instruments France s.a.
Le Bourget, France

MKS Instruments Deutschland GmbH
Munich, Germany

MKS Instruments Benelux
Delft, The Netherlands

MKS Instruments, U.K. Ltd.
Altricham, England
Livingston, Scotland
Kildare, Republic of Ireland

MKS Insturments, Inc.
Telvac Engineering, Telford, England

MKS Japan, Inc.
Tokyo, Japan

MKS Korea Co., Ltd.
Seoul, Korea

MKS Instruments, Inc. Singapore
Singapore

MKS Instruments, Inc. Taiwan
Hsinchu, Taiwan

SHAREHOLDER INFORMATION
Stock Listing: NASDAQ National Market, Symbol: MKSI

TRANSFER AGENT AND REGISTRAR
EquiServe, Canton, Massachusetts

INDEPENDENT AUDITORS
PricewaterhouseCoopers LLP, Boston, Massachusetts

OUTSIDE COUNSEL
Hale and Dorr, LLP, Boston, Massachusetts

Hill & Barlow, a Professional Corporation, Boston, Massachusetts

INQUIRIES CONCERNING THE COMPANY
Stockholder inquiries or requests for copies of this report, the annual Form 10-K or other financial information about MKS Instruments may be addressed to Ronald C. Weigner, Vice President and Chief Financial Officer, Six Shattuck Road, Andover, MA 01810; or inquiries may be sent through the MKS website at: www.mksinst.com.

ANNUAL MEETING
The Company's 2001 Annual Meeting of the shareholders will be held at 10:00 a.m. on May 16, 2001 at the Andover Country Club, 60 Canterbury Street, Andover, Massachusetts 01810.

Exhibit 21.1

Subsidiary	Place of Organization
MKS International, Inc.	Massachusetts
MKS Instruments Deutschland GmbH	Germany
MKS Instruments France S.A.	France
MKS Instruments Canada Ltd.	Canada
MKS Instruments, U.K. Ltd.	United Kingdom
MKS East, Inc.	Massachusetts
MKS Japan, Inc.	Japan
Spectra International Japan Co. Ltd.	Japan
MKS Korea Co., Ltd.	Korea
MKS FSC, Inc.	Barbados
D.I.P., Inc.	Ohio
MKS MSC, Inc.	Massachusetts
Telvac Engineering Ltd.	United Kingdom
MKS Taiwan	Taiwan
MKS Singapore	Singapore
Spectra Sensortech, Ltd.	United Kingdom
Applied Science and Technology, Inc.	Delaware
ASTeX CPI, Inc.	Massachusetts
ASTeX Plasmaquest, Inc.	Texas
ASTeX Realty Corporation	Massachusetts

ASTeX Securities Corporation	Massachusetts
Newton Engineering Services, Inc.	Massachusetts
Klee Corporation	Delaware
Shamrock Technology Corporation	Delaware
ETO, Inc.	Nevada
ASTeX GmbH	Germany

Exhibit 23.2

CONSENT OF INDEPENDENT ACCOUNTANTS

We hereby consent to the incorporation by reference in the Registration Statements on Form S-8 (No. 333-78069, 333-78071, 333-78073, 333-31224, 333-54486, 333-54488, and 333-54490) and Form S-3 (No. 333-34450) of MKS Instruments, Inc. of our report dated January 26, 2001 relating to the financial statements, which appears in the Annual Report to Shareholders, which is incorporated in this Annual Report on Form 10-K. We also consent to the incorporation by reference of our report dated January 26, 2001 relating to the financial statement schedule, which appears in this Form 10-K.

PricewaterhouseCoopers LLP

Boston, Massachusetts
March 28, 2001