

PENTAX—The Complete Solution

a report by

PENTAX Medical Company

Established in 1919, PENTAX Corporation is a diversified global network leading the world in optics and related fields. In addition to the camera and optical divisions, PENTAX Corporation also specializes in the manufacture, development and sale of the following:

- electronic imaging and endoscopic equipment;
- survey instruments;
- industrial equipment;
- computer-aided design (CAD);
- computer-aided manufacturing/methods (CAM);
- computed axial tomography (CAT);
- computer-aided engineering (CAE) systems;
- eyeglass lenses;
- synthetic bone and tooth roots; and
- information services utilizing IT telecommunication networks.

PENTAX Medical Company

In April 2004, PENTAX Corporation of Japan announced the merger of its two US subsidiaries, PENTAX Precision Instrument Corporation (now PENTAX Medical Company), and PENTAX USA, Inc. (now PENTAX Imaging Company), forming PENTAX of America, Inc.

PENTAX Medical Company was founded in 1979 and is an industry leader specializing in the development of video and fiber endoscopy equipment and computer technology/imaging products for diagnostic, therapeutic and research applications in the gastrointestinal (GI), ear, nose and throat (ENT) and pulmonary medical fields. The range of products includes:

- endoscopes;
- video equipment;
- computer hardware;
- computer software for image and data management;
- accessories; and
- carts.

Recent advances include Motion Picture Studio™ (MPS) for full-motion, realtime video capture of procedures, transnasal esophagoscopy (TNE), unsedated transnasal esophagogastroduodenoscopy (TEGD), 360°

ultrasound, and confocal endo-microscopy—an emerging technology that allows cellular and sub-cellular viewing of tissue through an endoscope.

The mission is to achieve undisputed leadership in all focused markets by providing customers with high-quality endoscopes, cutting-edge computer hardware, integrated software platforms, access to emerging technologies, superb customer service, hands-on technical support, and excellence in all areas of their business relationships—offering the complete solution to all their customers' endoscopic needs.

Partnerships

PENTAX Medical Company has partnered with many companies to provide the most comprehensive product offering to its customers. PENTAX's ACTive Solutions Network™ (ASN) provides single-source access to multiple vendors who work together to minimize time and maximize accuracy and efficiency in the endoscopic lab. Building on PENTAX's 17 years of in-house computer software development, the ASN works with a consortium of industry leaders to develop interfaces and services that harness the multiple technologies in the hospital or endoscopy lab to create a seamless flow of data and integrated systems. These systems improve work flow and cost-effectiveness, and bring patient care to the highest level.

Product Overview

PENTAX's endoscopic systems are renowned in the industry for their superior image quality, in particular, image quality-to-size ratios and ease of use. PENTAX has distinguished itself within the market categories it serves, through a consistent commitment to research and development (R&D), easy-to-use and easy-to-clean product design, cutting-edge technology, and dedicated customer service and support.

GI Endoscopes

PENTAX is a pioneer in delivering high-resolution endoscopic imaging to the GI field in fiber and video applications. The full line of upper and lower GI



endoscopes provide varying insertion tube and working channel diameters, which provide maximum versatility in diagnostic and therapeutic applications. PENTAX's new EPK-1000 Digital Color Video Processor and 70K Digital Color Video Endoscope series combine high performance and ergonomic design with Digital Signal Processing (DSP) technology for maximum image clarity and resolution for more efficient endoscopic examinations and diagnoses. All scopes are fully re-processible and offer full-screen imaging on the monitor.

Bronchoscopes and Intubation Scopes

In addition, the company offers a full family of fiber, video, and portable 'bedside' bronchoscopes and intubation scopes that offer superior image quality and a wide range of insertion diameters for diagnostic or therapeutic procedures. PENTAX's scopes provide easy insertion and effective aspiration, making them perfect for a variety of clinical applications. The portable bedside endoscopes utilize a lightweight, self-contained battery-powered light source, making them ideal for routine bedside examinations or in situations where space is limited.

ENT Scopes and Fiberoptic Endoscopic Evaluation of Swallowing (FEES)/Flexible Endoscopic Evaluation of Swallowing with Sensory Testing Systems (FEESST)

From sensory testing laryngoscopes to video esophagoscopes, PENTAX's ENT product line is the most diversified and unique in the industry. PENTAX has pioneered technology in several areas of ENT, including TNE using their ultra-slim video esophagoscope, and flexible endoscopic evaluation of swallowing with sensory testing (FEESST; FEES) for the diagnoses of swallowing disorders. The company's versatile MiniVision portable recordable endoscopy system offers compact, yet comprehensive FEES and FEESST evaluation, diagnosis and treatment in any clinical environment. The recent addition of pulsed dye laser (PDL) and stroboscopy products has expanded PENTAX's ability to provide not only superior image quality, but improved patient care and enhanced efficiency for the ENT field.

Speech and Voice Analysis Products

PENTAX's laryngeal imaging products are complemented by a full line of speech analysis and biofeedback products for the ENT and speech clinic. These include acoustic, airflow, and electroglottography (EGG) instruments for comprehensive assessment and treatment of patients with voice disorders. Objective parameters from these

instruments assist in quantifying patient performance before and after medical intervention.

Ultrasound and Specialty Endoscopes

In conjunction with Hitachi Medical Corporation, PENTAX developed the world's first electronic convex linear array ultrasound endoscope. These linear array endoscopic ultrasonography (EUS) endoscopes are unique because they offer ultrasound guided fine needle aspiration (FNA) biopsy, color Doppler, and advanced image processing that are not available with older mechanically designed EUS endoscopes. In addition, the PENTAX radial array ultrasound endoscope was the first non-mechanical, all-electronic EUS endoscope to provide a transverse anatomical view. Both linear and radial array EUS endoscopes are compatible with the Hitachi line of processors, giving the added advantage of one processor for both scopes. In addition, PENTAX has developed a growing family of specialty scopes in the fields of gastroenterology, urology, and general surgery, including:

- cystoscopes;
- ureteroscopes;
- choledochoscopes;
- cysto-nephroscopies;
- enteroscopes;
- duodenoscope-assisted cholangiopancreatoscopes (DACPs); and
- zoom gastro and colonoscopes.

Video Equipment

By incorporating 10-bit A/D and D/A converters in digital image processing technology, PENTAX is able to deliver video color resolution that is comparable with broadcasting equipment, for unrivaled high-resolution endoscopic images. These high-resolution images are able to produce a color resolution of about one billion colors. Combined with image enhancement capabilities and contrast, PENTAX video equipment enables users to recognize even the most subtle color differences and/or structural changes in tissue.

Computer Software, Data & Image Management Systems

PENTAX offers a wide range of robust, integrated computer software packages for the endoscopy lab. The company develops state-of-the-art endoscope and computer imaging technologies based on the ever-changing needs of the medical industry. The current product profile includes:

endoPRO®

An indispensable tool that allows complete management of endoscopic needs including patient scheduling, administration, networking, quality assurance, and image review and reporting.

Doc-U-Scribe™

An endoscopy reporting system used with endoPRO that assists with patient management and reporting needs. It combines templates for computer-generated procedural notes, and allows printable images to accompany notes and reports. Doc-U-Scribe is also a valuable tool for statistical analysis.

Nursing Notes

An add-on module to endoPRO and Doc-U-Scribe that permits paperless documentation and realtime entering of nursing notes into the patient record at the point of care.

MPS

Another add-on module to endoPRO that enables the physician to capture full motion video endoscopic data that can be recorded in realtime and saved for subsequent review and editing.

Ancillary Equipment, Light Sources, Add-On Cameras and Carts

PENTAX also offers a wide range of ancillary equipment that enables customers to maximize their investment in its products.

KayPENTAX

In March 2005, PENTAX Medical Company increased their presence in the ENT, voice and speech markets by announcing the acquisition of all of the operating assets of the Kay Elemetrics Corporation. Kay's operations were continued as a division of PENTAX Medical Company under the name 'KayPENTAX'. As the world leader in speech, voice and swallowing instrumentation, KayPENTAX continues to revolutionize the industry by developing unique techniques and technologies that provide superior image quality, improved patient care, and enhanced efficiency for the ENT, voice and speech practitioner.

Microline PENTAX, Inc.

In December 2004, PENTAX Corporation completed the acquisition of Microline, Inc., an industry leader in the development and manufacture of laparoscopic

surgical instruments. Microline PENTAX is a wholly owned subsidiary of PENTAX Corporation, and is focusing on expanding the product line of the Medical Accessory Division to include laparoscopic surgical instruments and accessories.

PENTAX Imaging Company

PENTAX Imaging Company is an innovative leader in the production of digital and film cameras, binoculars, spotting scopes, eyepieces, lenses, mobile printers, scanners, and Internet cameras. For more than 80 years, PENTAX technology has developed durable, reliable products that meet the needs of consumers and businesses. Based in Golden, Colorado, they are the US imaging division of PENTAX of America, Inc. ■

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