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SHIMADZU SINGLE PHOTON EMISSION COMPUTED TOMOGRAPH SET-031.Y.Higashi,N.Yamaoka, T.Nagata,Y.Shimada and J.Ohi.Shimadzu Corporation,Kyoto.

The SET-031 is a single photon emission computed tomograph (for the head) in which detectors are arranged in a circular geometry. Constitution and Specifications.

## 1. Gantry

- (1) Number of detector rings --- 3 (max.)
- (2) Detector --- NaI with photomultiplier tube. 64 pcs./1 ring
- (3) Collimator --- High sensitivity collimator, High resolution collimator.

## 2. Bed

## 3. System rack

- (1) CPU --- ECLIPSE S-120 (256 KB)
- (2) Floppy disk unit --- 1.2 MB x 2

## 4. Console

- (1) Character display
- (2) Color display

## Performance

	High sensitivity collimator	High resolution collimator
Spatial resolution (Center of the field of view, FWMH, mm)	22	11
Slice thickness (Center of the field of view, FWMH, mm)	24	16
Sensitivity (kcps/ $\mu$ Ci/m <sup>2</sup> )	30	7

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SIEMENS SUPERCONDUCTIVE MR-CT "MAGNETOM". K.Fujii,M.Tarui,E.Petersilka.Siemens Medical Systems Ltd.

The first MAGNETOM for clinical use was installed at the Mallinckrodt Institute of Radiology (United States of America) in July 1983. Since then, many MAGNETOM have been installed and are enjoying widespread clinical and/or research use worldwide.

The first clinical trial unit to be introduced in Japan was installed the Department of Radiology of the University of Tokyo Medical Hospital in March 1984.

MAGNETOM has already provided us with a wealth of knowledge about 0.35-0.5T proton imaging and its measuring parameters. Special additional applicational software programs are currently being developed. In this presentation we will demonstrate high resolution images with zoom techniques, high resolution images with surface coils, ECG-gated and respiratory-gated images, flow images and proton chemical shift images. The results of 1.5T high magnetic field strengths will also be exhibited.

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TOSHIBA'S MRI.  
M.Mitomi.Toshiba corporation

In 1979 summer, Toshiba undertook to develop Magnetic Resonance Imaging System (MRI) in cooperation with the Institute for Solid State Physics, the University of Tokyo, and in 1982, started clinical study at the Toshiba Central Hospital, which was the first time in Japan for using a system of Japanese make. And in May 1983, Toshiba obtained the first sanction in Japan of the Yakuji-Hou to manufacture and sell the MRI. The first Toshiba's MRI was delivered to Jikei University School of Medicine, where more than 1000 clinical diagnoses have been done. At present, clinical diagnoses are being done in six hospitals including Okayama University and Toshiba Central Hospital.

## Merits

- 1.All units are of Toshiba make, and have high maintenance and reliability.
- 2.Many functions of image processing.
- 3.Superior operation
- 4.Voluntary section can be imaged exactly.
- 5.High S/N images can be obtained.
- 6.Thoughtful consideration to patients are made, for example the gantry is large 630mm in diameter.
- 7.The image of T1, T2 can be easily obtained.
- 8.Development of the signal acquisition technique using ECG and RESP gating is now in progress, and improvements in ability for diagnosis are constantly being made effort.

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FEATURE OF ASAHI MARK-J.  
Masaaki Ohshima.Planning & Development, Asahi Medical Co., Tokyo.

Technology of Asahi Mark-J (MRI) is based on the vertical type magnet and spin-warp imaging method. The vertical type magnet system is useful to produce the greatest possible signal-to-noise ratio with low magnetic field (0.1 Tesla). The low magnetic field system has the advantage in site preparation and economical cost, compared with the superconductive (high-field) system and the horizontal type magnet. The spin-warp imaging method produces excellent NMR images without the effect from magnetic field non-uniformity and patient movement.

The clinical efficiency of Mark-J was proved over 3,000 patients study in three hospitals.

The general aspects of Asahi Mark-J are

Computer:DEC PDP-11/23 PLUS with 80 MB disk.

Images :SR, IR, SE, T<sub>1</sub>, T<sub>2</sub>.

Through-put:13sec/image (Quick Scan)  
2min/11images (Multi Slice Mode)

Room :6m×12m×2.7m (Standard)

Electricity:90KVA (Maximum)

Weight :3,000kg (magnet)