

# Application Notes

## The Principles of M-S Stereo Microphones

As shown at right (Fig 1.a), the CMS-7s MS Stereo Microphone incorporates two capsules: a 'Mid-Mic' with a unidirectional polar pattern (CMS-7s=Cardioid) and a 'Side-Mic' with a figure-8 polar pattern.

When the M and S outputs from both Mid- and Side-Mics are added and subtracted by the switchable matrix box (CMS-MBB), the two outputs (M+S and M-S) reproduce conventional left and right stereo signals (Fig. 1.b).

In addition, the CMS-MBB's width control adjusts the stereo aperture. As the S signal is attenuated, the stereo signal becomes more center-oriented (Fig. 2.a,b).

## Using the CMS-7s

### ■ On-Site M-S Recording and L-R Post-Production Editing

M and S signals are recorded on-site with a portable stereo "field" recorder (Fig 3.a).

At a post-production studio, these signals are fed back to the CMS-MBB (using the SC-74 cable) to edit the stereo aperture or transform the stereo signal to mono.

The CMS-MBB's output is fed directly to the studio's mixing console or recorder (Fig. 3.b).

### ■ Post-Production Using a Mixing Console

As shown in Fig. 3.c, the M and S signals are fed back to four channels of a mixing console.

Phase shifting adds and subtracts these signals to produce L and R signals.

The amplitude control of one of the S signal channels designates stereo aperture.

### ■ On-Site L-R Recording

L and R signals (with selected aperture) are recorded on-site with a stereo recorder (Fig. 3.d).

Fig. 1: M-S Stereo Recording Principles

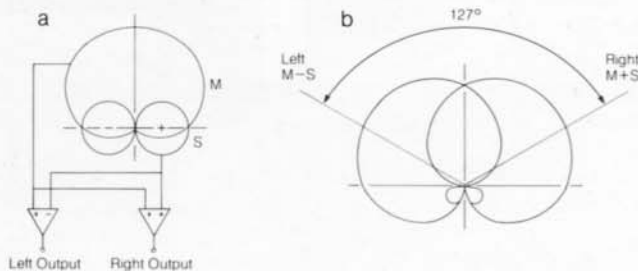


Fig. 2: Stereo Width Control

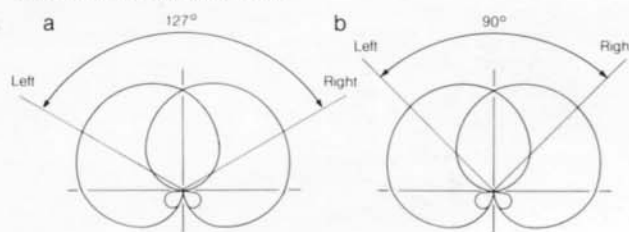
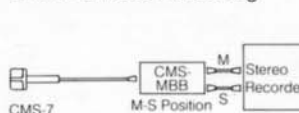
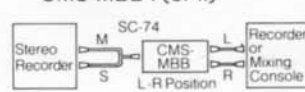


Fig. 3: Connection Diagrams

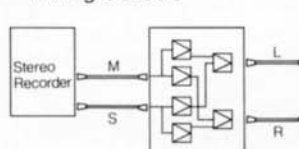
a: M-S On-Site Recording



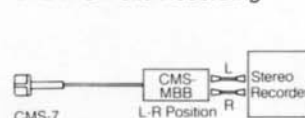
b: Post-Production Using CMS-MBB I (or II)



c: Post-Production Using Mixing Console



d: L-R On-Site Recording



Field recording with the Sanken CMS-7 microphone.

Dealer: