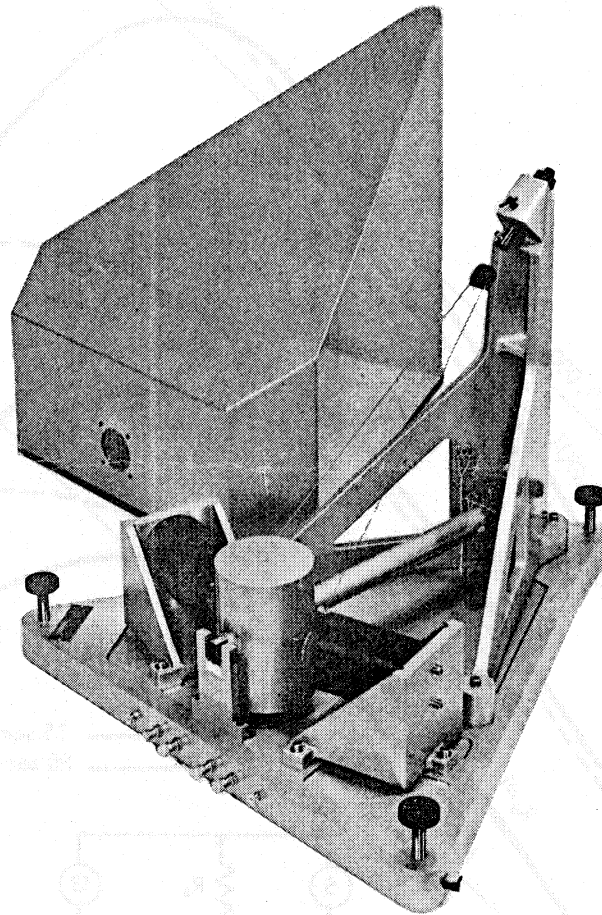


GENERAL DISCRIPTION LONG PERIOD HORIZONTAL SEISMOMETER



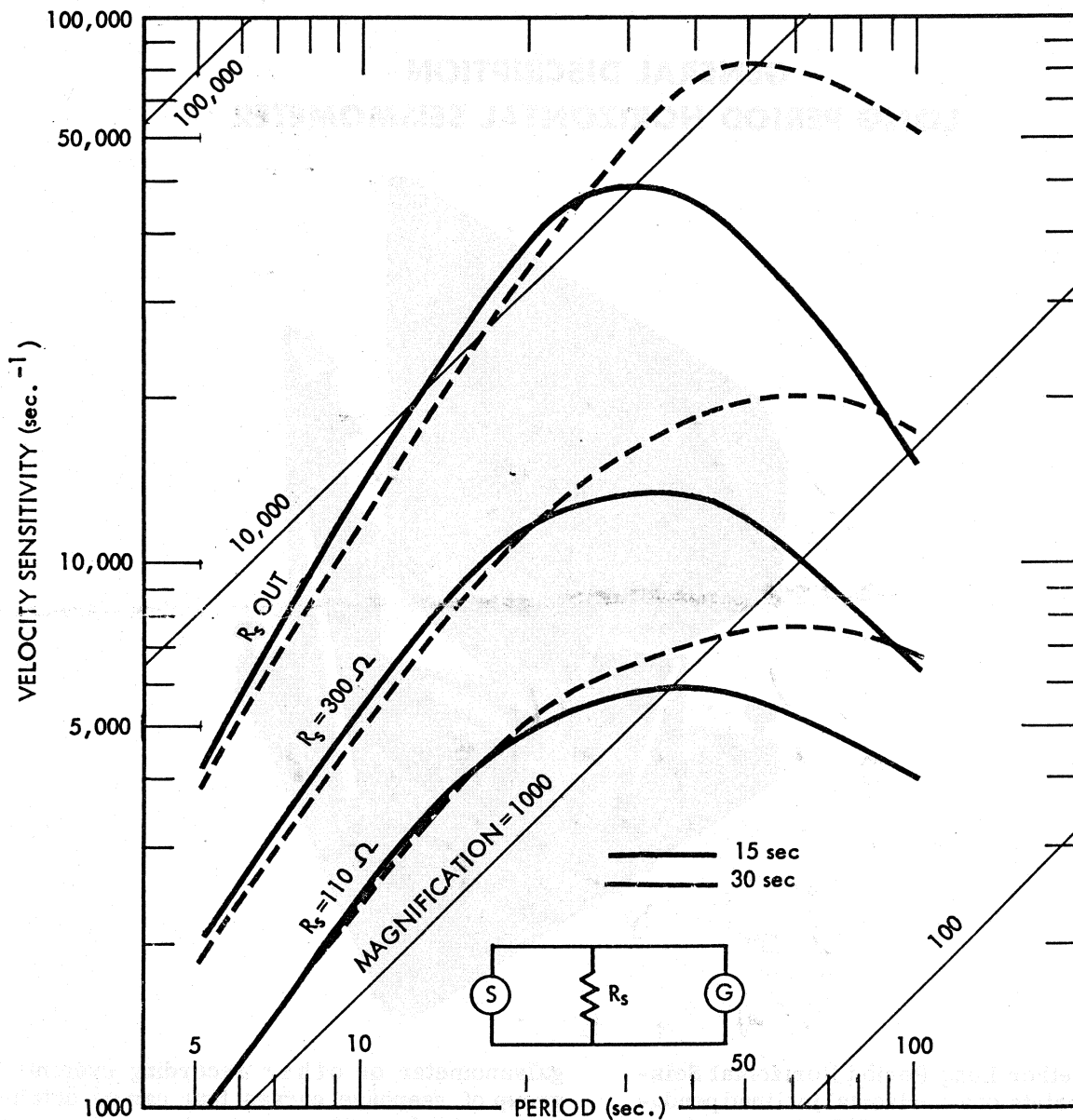
The Sprengnether Long Period Horizontal Seismometer consists of a horizontal inclined pendulum of 10.7 kg. mass with two 500-ohm coils (calibration and other coils on request) operating in a circular magnetic gap. The inertial mass is a solid brass cylinder while the base plate and associated framework are high quality aluminum castings. Suspension is accomplished through a tension hinge plus a supporting yoke. Transducer output and natural period variations with boom position are less than $\pm 1.5\%$ and $\pm 3\%$ respectively over the total 3° range of motion. The transducer electrodynamic constant varies $\pm 1\%$ among instruments. Periods from 6 to 60 seconds can be readily obtained on the instrument. Quiet operation at longer periods may require temperature stabilization to a degree commensurate with the operating period. Heaters are installed inside the covers and styrofoam enclosures for thermal shielding are available if needed.

The response characteristics of this seismometer will naturally depend on the associated

galvanometer or other recording system. A group of response curves that can be obtained with a standard 90-second galvanometer commonly employed with this instrument are shown on the reverse side of this sheet. Variations in response can be accomplished through changes in coupling networks, galvanometer damping, galvanometer, or amplifier, if used. Calibration is possible through the impulse method using a special calibration coil, i.e., 5 or 10 turns around a standard coil or on a standard coil form; or by the bridge method of Willmore, greatly simplified with knowledge of the coil constant of the seismometer. (See specifications on reverse side.)

Installation is relatively simple and requires only one to two hours. The pendulum is easily removed without damage should the initial installation need to be changed.

Zero position observation and adjustment, as well as period adjustment, are accomplished by leveling screws without removing the cover or otherwise disturbing operation.



TYPICAL RESPONSE CURVES AT 15 AND 30 SECONDS SEISMOMETER PERIODS FOR DIFFERENT COUPLING (SHUNT) RESISTANCES INTO A STANDARD 500 Ω 90 SECOND GALVANOMETER (CDRX=700 Ω)

GENERAL SPECIFICATIONS

Period Range: 6 sec. to 60 sec., standard 500-ohms, linearity $\pm 3\%$ in 3° operating range.

Magnification: Up to 12,000 with 90 sec. galvanometer depending on coupling.

Damping: Electromagnetic.

Transducer: 2 moving coils in circular gaps (500-ohm coils standard — other resistances, or calibration coils on request).

Output: 0.89 volts 1 cm/sec. each coil.

Output non-Linearity: $\pm 1-1/2\%$ in 3° operating range.

Period Non-Linearity: $\pm 3\%$ in 3° operating range

Cover: Light weight aluminum with rubber gasket seal to base.

PHYSICAL SPECIFICATIONS

Length	25"
Width	25"
Height	22"
Net Weight (approx.)	90 lbs.
Shipping Weight (approx.)	155 lbs.