



phase 90



Musical
Products Group

Operation
Manual

MXR TECHNOLOGY

All products developed by MXR are a result of extensive experience in creative audio engineering. MXR products are designed by individuals who are actively involved in every facet of music, from performance through recording to playback. This sustained awareness of current trends and needs, combined with innovative design and construction techniques, allows MXR to produce carefully thought out products that are unique, versatile, and reliable. New ideas are constantly being tested, and existing products are subject to regular re-evaluation so you can be sure they reflect the latest technology.

There are MXR products to suit the needs of everyone involved with music. A wide variety of effects units, from a

basic stage unit to our highly sophisticated studio signal processors, are available to enhance any musical performance. Also included in the MXR line are products designed to improve the quality of sound in home stereo component systems. MXR is constantly striving to serve all areas of the world of music. The same care and attention is given to all MXR products, whether they are used in the home, in recording studios, or during live musical performances. All MXR products are designed and manufactured in the U.S.A. and carry a full warranty.

INTRODUCTION

The MXR Phase 90 is the classic phasing unit. Designed for use with any electronic musical instrument, the Phase 90 provides low cost, studio-type phasing for on stage use.

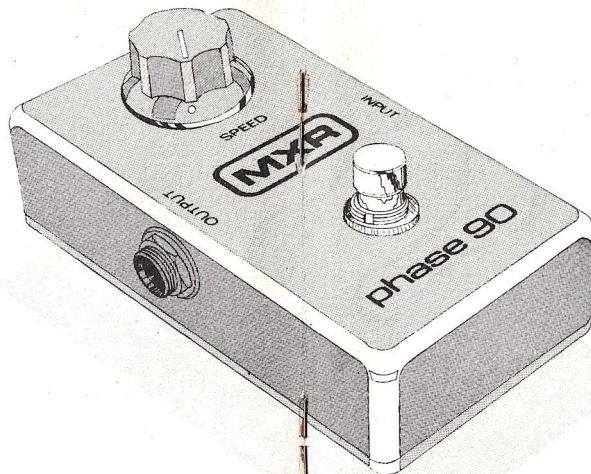
Phase shifting is accomplished by passing an incoming signal through a series of all-pass phase shifting filters. This causes a "phase-lag," which is similar to a time delay. When this phase shifted signal is mixed with the original signal, a series of notches is created in the tonal spectrum. Two filters are required to create each notch. The result is termed a "comb filter response."

OPERATION

The flowing, turning sound of the MXR Phase 90 will add new dimension to the sound of any instrument with which it is used.

The sole control knob on the Phase 90 makes operation straightforward and simple. SPEED regulates the phasing rate, allowing effects ranging from a very slow, mellow sound to a rapidly spinning sound similar to a rotating speaker. By turning the knob clockwise the sweep rate increases.

The FOOTSWITCH allows an effect to be instantaneously switched in or out. When in the out position, the signal is completely independent of circuit function.



SERVICE NOTES

Although the Phase 90 has been designed for low power consumption, the battery will need replacement on occasion depending on frequency of use. The need for replacement is indicated by a general lack of phasing or a restricted "sweep" of phasing. To replace the battery, remove the four screws securing the bottom cover. Replace with a similar 9V transistor radio battery.

Because the unit's input jack is also the power switch, the cord to the input should be unplugged when not in use to insure maximum battery life.

If the unit is to be shipped or stored for a long period of time (months), the battery should be removed to prevent damage from battery leakage.

SPECIFICATIONS

Maximum Input Level	-5 dBV
Maximum Output Level	-2 dBV
Input Impedance	500K ohms
Output Impedance	10K ohms
Equivalent Input Noise	-95 dBV
Phase Shift Range	720 degrees
Power Requirements	9 volt battery, 1.3 ma

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FULL WARRANTY

All products in the MXR Musical Products Group are warranted to function properly for a period of one year from the date of purchase. If any unit fails to function properly within the warranty period, free repair, and the option of replacement or refund in the event MXR is unable to repair the unit, are MXR's only obligations. This warranty does not cover any consequential damages or damage to the unit due to misuse, ac-

cident, or neglect. MXR retains the right to make such determination on the basis of factory inspection. Products returned to MXR must be shipped prepaid. This warranty remains valid only if repairs are performed by MXR and provided that the serial number on the unit has not been defaced or removed. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

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