

PDS1700 DIGITAL STEREO CHORUS/FLANGER



 Digitech

## INTRODUCTION

The PDS1700 is a full bandwidth digital flanger/chorus featuring stereo outputs, a 12 to 1 sweep ratio, and up to 51 milliseconds of delay. Digitech's unique dual foot-switch system makes changing between the flange and chorus settings easy. Either flange or chorus can be alternately selected by pressing the left footswitch; no controls need to be adjusted. The right footswitch alternately switches the effect in and out. There are seven controls: three

for chorus—speed, depth, and delay time; four for flange—speed, depth, delay time, and regeneration. A single 9V battery, which is accessible from the top of the unit, powers the PDS-1700. The PDS1500 battery eliminator can be used to power the unit from 110 volts.

Whether you want to have a flange sound for heavy metal guitar or to add a gentle chorus to a flute, the PDS1700 has the bandwidth and performance to do the job.

## DESCRIPTION

In order to get the most out of the PDS1700, it is important to understand how flange and chorus effects are generated. Flanging and chorusing are similar short delay effects which use a varying delay time. Flanging uses very short delay times (1 to 12ms) and usually a lot of depth at a slow speed. Depth refers to the ratio of longest to shortest delay time; the more depth the higher the ratio. Speed refers to how fast the delay time changes. A fast speed

is used for vibrato and shimmer type sounds, while a slow speed is used for smooth, sweeping type sounds. The flanger's characteristic sound comes from mixing the dry and delayed signal together. At some frequencies the signals combine, and at others they cancel, creating a series of peaks and troughs in the frequency response. These peaks and troughs are commonly referred to as a comb filter. Regeneration makes the comb

filter effect more pronounced, adding a resonant flavor to the sound.

Chorus uses longer delay times, (4 to 50 ms) less depth, and no regeneration. When using delay times in this range, varying the delay time will cause the pitch of the delayed signal to be changed. Mixing the delayed signal with the dry signal also causes notches and peaks in the frequency response. However, in this range of delay times the notches and peaks are close enough together that any coloration is very subtle. Varying the delay time causes the notches and peaks to slide up and

down in frequency. This, combined with the mild pitch shift, is what gives chorus its characteristic sound. Personal preference plays a big part in setting up a chorus, as there are many different settings that sound good. A general philosophy in setting up a chorus is first to set the speed control to the desired modulation rate. Second, adjust the delay time longer for a thicker sound or shorter for a more colored sound. Finally, turn up the depth until the desired modulation is obtained without introducing excessive pitch change.

## **C**ONTROL **D**ESCRPTIONS

### **CHORUS MODE**

**SPEED:** The SPEED control adjusts the speed of the sweep; it has no effect when the DEPTH control is fully counterclockwise.

**DELAY TIME:** The DELAY TIME control sets the average delay of the chorus; it can be adjusted from 4 to 51 milliseconds.

**DEPTH:** The DEPTH control adjusts the amount of variation in the delay time. When fully counterclock-

wise the delay time is set only by the DELAY TIME control. When fully clockwise the delay time changes over a 4 to 1 ratio.

### **FLANGE MODE**

**SPEED:** Same as in the chorus mode (above).

**DELAY TIME:** The DELAY TIME control sets the average delay of the flanger; it can be adjusted from 1 to 12.8 milliseconds. When the DEPTH

control is fully clockwise the DELAY TIME control has no effect.

DEPTH: The DEPTH control adjusts the amount of variation in the delay time. When fully counterclockwise the delay time is set only by the DELAY TIME control. When fully clockwise the DELAY TIME control has no effect and the delay time will vary over a 12 to 1 ratio.

REGEN: The REGEN control adjusts the amount of delayed signal to be mixed with the input signal and delayed again. Turning up the REGEN control results in a more pronounced comb filter effect which gives the flanger its characteristic sound. The REGEN control has effect only in the flange mode.

## APPLICATIONS

The PDS1700 is an excellent choice for adding varying delay effects to virtually any electronic instru-

ment; some of the more popular applications are listed below.

Guitar:

Chorus

Chorus double

Flanging

Jet flanging

Bass guitar:

Chorus double

Comb filter

Keyboards:

Chorus

Leslie vibrato

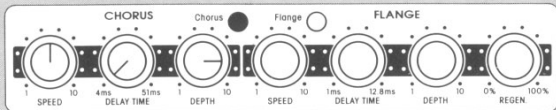
Flanging

## INDICATOR LEDS

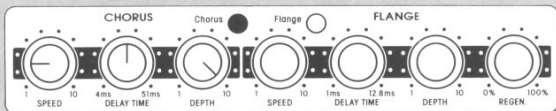
The CHORUS and FLANGE indicator LEDs indicate the status of the unit. If chorus is selected but bypassed, the CHORUS LED will flash on and off. If not bypassed, it will remain on. Similarly, the FLANGE LED indicates the status of the flange

mode. Also note that each LED flashes at the modulation rate set by its particular speed control. If the speed is set slow, the LED will be flashing at a very slow rate and may, at a glance, appear to be off.

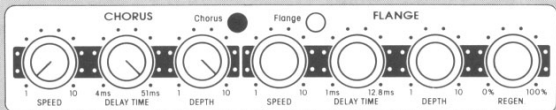
# SAMPLE SETTING CHART



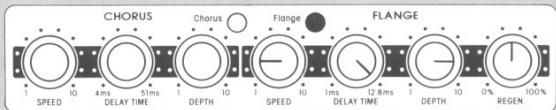
*Standard Chorus*



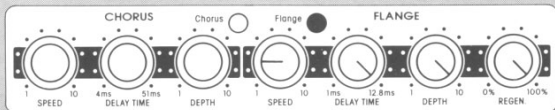
*Chorus-Double*



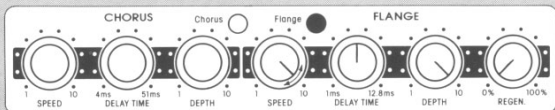
*Double*



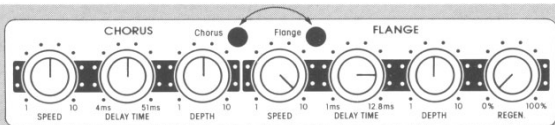
*Classic Flanging*



*Jet Flanging*



*Vibrato*



*Leslie Speaker*

## BATTERY REQUIREMENTS

The PDS1700 typically draws 35 ma. A high energy alkaline battery should be used. For repeated or prolonged playing, an A.C. adapter is recommended.

## JACKS

**INPUT:** The INPUT jack is an unbalanced connection to the unit; it will accept instrument level signals.

**OUTPUT 1:** The OUTPUT 1 jack is an unbalanced connection to the unit; it should be used for all mono applications.

**OUTPUT 2:** The OUTPUT 2 jack is

an unbalanced connection to the unit; it is intended to be used in stereo applications.

**POWER:** The POWER jack facilitates connection to an A.C. adapter. The recommended adapter is the Digitech PDS 1500. Tip is positive; sleeve is negative.

## SPECIFICATIONS

**POWER:** 9V battery, Digitech PDS1500 A.C. adapter.

**CURRENT:** 35 ma typical.

**CONTROLS:** Chorus — SPEED, DELAY TIME, and DEPTH  
Flanger — SPEED, DELAY TIME, DEPTH, and REGEN.

**BANDWIDTH:** Dry—20Hz-40kHz.  
Delay—20Hz-16kHz.

**DELAY RANGE:** Chorus—4-51 ms.  
Flanger—1-12.8 ms.

**S/N RATIO:** Dry—90 dB.  
Delay—85 dB.

**INPUT IMPEDANCE:** 470K ohms.

**OUTPUT IMPEDANCE:** 4.7K ohms.

**WEIGHT:** 2.3 lbs (1.05 kg).

**DIMENSIONS:** 5" x 6" x 1.9"  
(127mm x 152mm x 48mm).

## *IN CASE OF DIFFICULTY*

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In the unlikely event that you experience difficulty with the PDS-1700, please check the battery. Digital signal processors in general draw more battery current and have a shorter battery life than analog processors. A low battery may cause any of the following symptoms: failure of the unit to switch between chorus and flange; failure of the unit to switch on or off; excessive distortion (clipping) or failure of the unit to produce a wet signal regardless of the state of the LEDs. In most cases the unit can be restored to proper operation by replacing the battery or by using an A.C. adapter.



**DOD WARRANTY**

1. The warranty registration card must be mailed within 10 days after purchase date to validate this warranty.

2. DOD warrants this product, when used solely within the U.S., to be free from defects in material and workmanship under normal use and service.

3. DOD Electronics liability under this warranty is limited to repairing or replacing defective material that show evidence of defect, provided the product is returned through the original dealer, where all parts and labor will be covered up to a period of one year. The company shall not be liable for any consequential damage as a result of the product's use in any circuit or assembly.

4. Proof of date of purchase is considered to be the burden of the consumer.

5. If this product is battery operated: Batteries are not covered by this warranty. Please remove weak or dead batteries in order to prevent corrosion damage.

6. DOD reserves the right to make changes in design or make additions to or improvements upon this product without incurring any obligation to install the same on **PRODUCTS PREVIOUSLY MANUFACTURED.**

7. The foregoing is in lieu of all other warranties, express or implied, and DOD neither assumes nor authorizes any person to assume for it any obligation or liability in connection with the sale of this product. In no event shall DOD or its dealers be liable for special or consequential damages or from any delay in the performances of this warranty due to causes beyond their control.

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