

1. After making the connections, set the BYPASS switch ⑤ at OFF and the POWER switch ⑫ at ON.

2. Use the INPUT LEVEL switch ③ and the output level control of the instrument or external preamp to adjust the signal level so that the green LEVEL INDICATOR ④ lights. If the red indicator lights, the input level is too high and distortion might be caused.

3. Set the EFFECT MODE switch ⑩ at OFF and set the OUTPUT LEVEL switch ⑬ as needed.

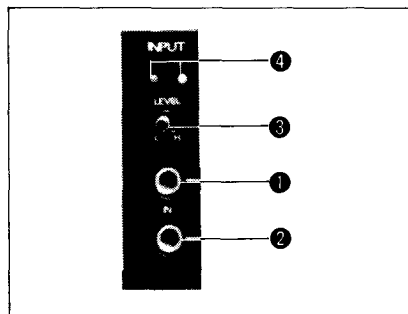
4. Control the output sound level by means of the volume control on the device (mixer, amplifier, etc.) connected to the SBF-325 output.

5. Try the EFFECT MODE switch ⑩, the MODULATION Section controls, the FEEDBACK control ⑥, and the PHASE switches ⑰ ⑱ for various sounds.

6. When volume adjustment is necessary, it is preferable to adjust in the units connected to the SBF-325 output.

## NAMES AND FUNCTIONS OF THE CONTROLS

### INPUT SECTION



**CHANNEL A INPUT Jack ①**

**CHANNEL B INPUT Jack ②**

Low level signals such as guitar or bass guitar require the use of a preamp such as the Roland SIP-300 or SIP-301. When only one input jack is used, the input is automatically connected to both inputs.

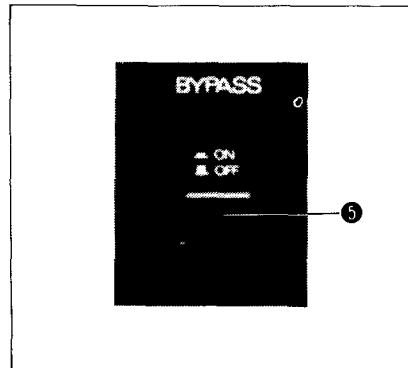
**INPUT LEVEL Switch ③**

Set to match the output level of the input signal.

**INPUT LEVEL INDICATOR ④**

The green indicator shows the presence of an input signal; the red indicator lights when the input level is high enough to produce distortion.

### BYPASS SECTION



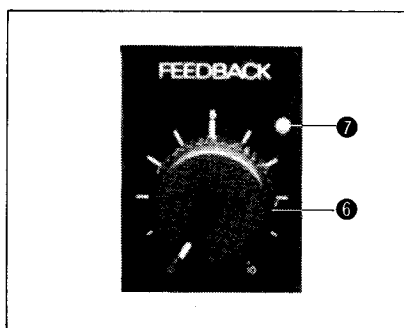
**BYPASS Switch ⑤**

The BYPASS switch ⑤ makes direct connections between the inputs and outputs. This means that the POWER switch ⑫ may be left at OFF when the SBF-325 is in the BYPASS mode and that the gain in the BYPASS mode is unity. With the BYPASS switch ⑤ OFF, the gain will depend on the setting of the INPUT LEVEL switch ③ and the OUTPUT LEVEL switch ⑬ (see diagram).

(CAUTION: If used during performance, the BYPASS switch ⑤ may cause click noise).

If the BYPASS switch ⑤ is to be used during performance, it will be necessary to set the INPUT LEVEL ③ and OUTPUT LEVEL ⑬ switches so that the gain through the flanger circuits is unity: INPUT at H and OUTPUT at L; or INPUT at L and OUTPUT at H.

## FEEDBACK SECTION



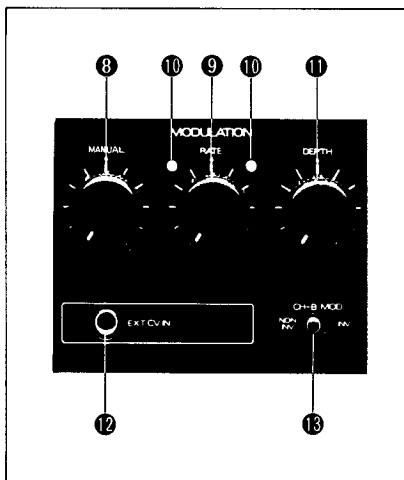
### FEEDBACK LEVEL Control 6

Controls the amount of feedback used in the FLANGER modes. Turning the control clockwise strengthens the feedback and increases the flanging effect. (Does not operate in the OFF or CHORUS modes).

### FEEDBACK INDICATOR 7

Lights whenever the EFFECT MODE switch 14 is in one of the FLANGER positions to indicate that the FEEDBACK LEVEL control 6 is in effect.

## MODULATION SECTION



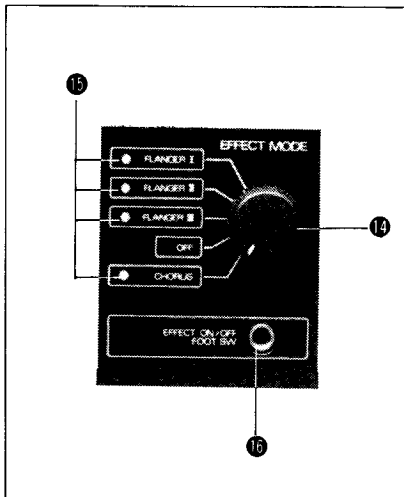
The flanging effect is produced by combining the output of an audio delay line with the original audio signal. The result of this combination is a cancellation of certain frequencies. The MANUAL control 8 determines the amount of initial time delay which occurs. The "motion" associated with flanging effects is created by slowly increasing and decreasing the amount of time delay by means of an internal low frequency oscillator (LFO). The RATE control 9 determines the LFO rate, thus it controls the rate of change in the delay time; the DEPTH control 11 determines the amount or depth of change which will occur in the delay time set by the MANUAL control 8. With the DEPTH control 11 at "0", no change in delay time occurs; at "10" the change will be maximum. Also, with the DEPTH control 11 at "10", the MANUAL control 8 no longer has any effect. The LFO RATE INDICATORS 10 give visual indication of the LFO rate. The indicator on the right becomes bright for the positive LFO

peaks, and the indicator on the left becomes bright for the negative peaks.

The EXT CV IN jack 12 is used when it is desired to control the delay time by means of an external LFO or control voltage. When this jack is in use, the internal LFO is off and the indicators 10 will light for positive and negative peaks of the external input. The MANUAL control 8 and DEPTH control 11 will affect the sound as before.

The CH-B MOD switch 13 can be used for inverting the external or internal modulating signal used to control the Channel B delay time. The result is that the delay time in Channel B will decrease when the Channel A delay time increases, and vis-a-vis.

## EFFECT MODE SECTION



### EFFECT MODE SELECTOR Switch 14

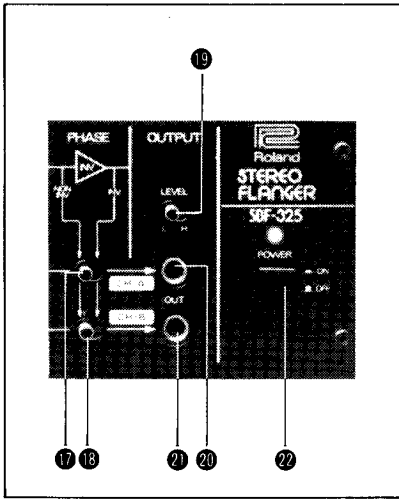
See page 8 for detailed explanation of the different modes.

### EFFECT MODE INDICATORS 15

### EFFECT ON/OFF FOOT SW (switch) Jack 16

By using a foot switch such as the Roland FS-1 effect can be remote controlled. When ON, the effect will be what selected by the EFFECT MODE switch 14.

## PHASE and OUTPUT SECTIONS



**CHANNEL A PHASE Switch 17**

**CHANNEL B PHASE Switch 18**

At INV, the flanging effect will become weak for the fundamental of the sound, but strong for the overtones.

**OUTPUT LEVEL Switch 19**

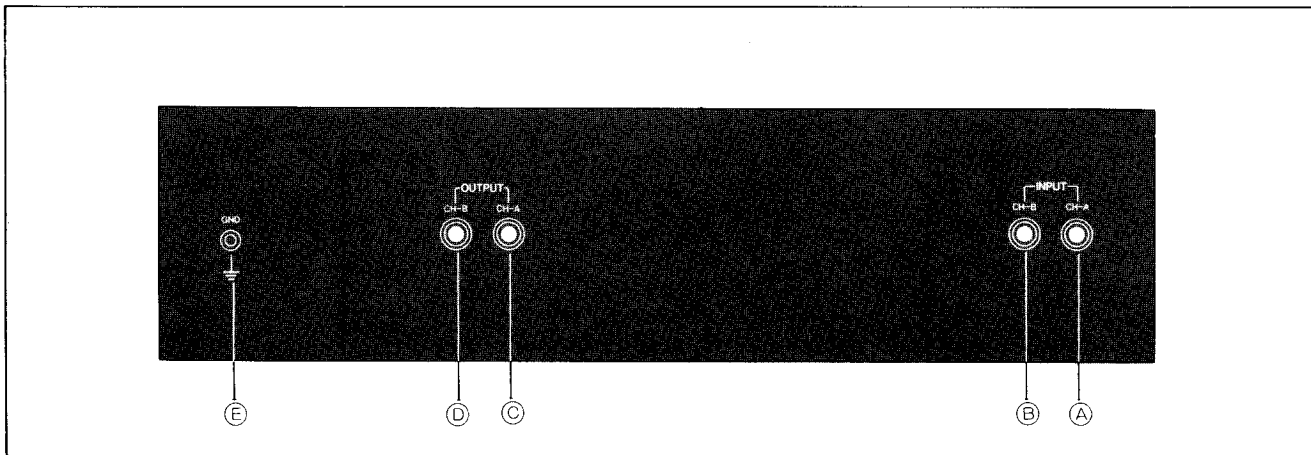
Set to match the input level of the device connected to the OUTPUT jacks 20 21

**CHANNEL A OUTPUT Jack 20**

**CHANNEL B OUTPUT Jack 21**

**POWER Switch 22 with indicator**

## REAR PANEL



**CHANNEL A INPUT Jack A**

**CHANNEL B INPUT Jack B**

When connections are made simultaneously to both front and rear panel inputs, the front panel jacks have priority. This means that in the studio, the rear panel jacks can be used for the studio normal connections and the front panel jacks for temporary patching.

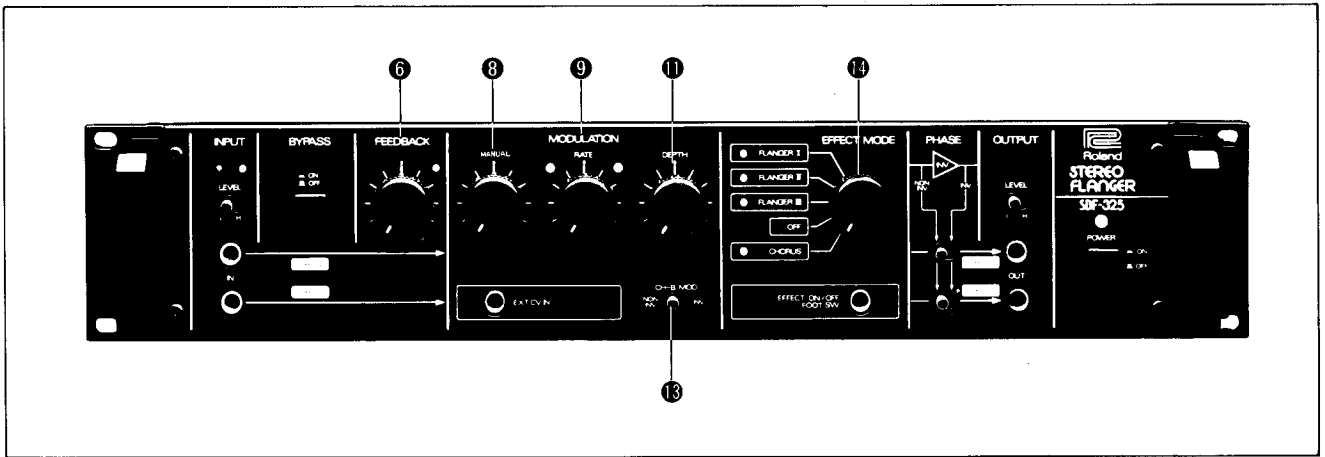
**CHANNEL A OUTPUT Jack C**

**CHANNEL B OUTPUT Jack D**

As with the inputs, the front panel jacks have priority.

**GND (ground) Terminal E**

For making common ground connections with other equipment.



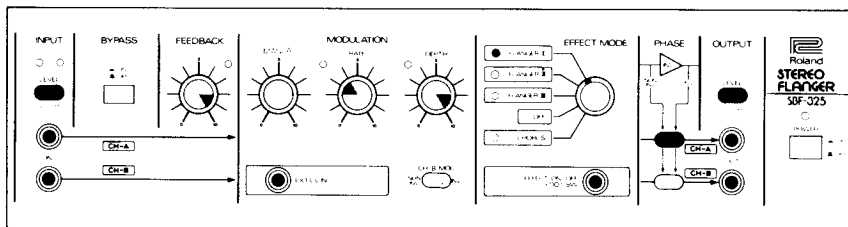
The first flanging effects in recording studios were produced by feeding an audio signal to two tape recorders and mixing the outputs from the playback heads. If a light finger pressure is applied to the supply reel on one of the machines, it will run slightly slower, thus giving a slight delay to one of the outputs. When this slightly delayed sound is mixed with nondelayed sound, the result is that certain frequencies are cancelled. The effect is similar to the effect which can be heard when standing near a runway as a jet plane takes off. Certain frequencies are cancelled as the direct sound from the plane is combined with the delayed sound reflected from the runway. The amount of delay changes as the plane moves off into the distance. In the studio, this effect is known as flanging because it was first produced by finger pressure applied to the flange of the tape reel.

Modern digital technology has made it possible to design solid state audio delay lines which can be used to imitate the original tape flanging effect. The output of the delay line is combined with the original signal source. The actual frequencies which are cancelled as a result of this combination will depend on the amount of the time used. In most flangers, the delay time is controlled by an internal low frequency oscillator (LFO) which sweeps the delay time above and below a predetermined center delay time. In the SBF-325 the MANUAL control ⑧ is used to set this initial center delay time, thus it determines the initial frequency cancellations which will occur. The RATE control ⑨ controls the frequency of the internal LFO, thus it controls the rate of the delay time changes. The DEPTH control ⑪ determines how far away from the center frequency position the time delay will vary. The FEEDBACK control ⑥ induces positive feedback into the circuit which tends to accent the flanging effect.

**FLANGER I**

**Monaural flanging mode.**

In this mode, the Channel B delay line is not used and the Channel A delay line output is connected to both OUTPUT jacks ⑩ ⑪



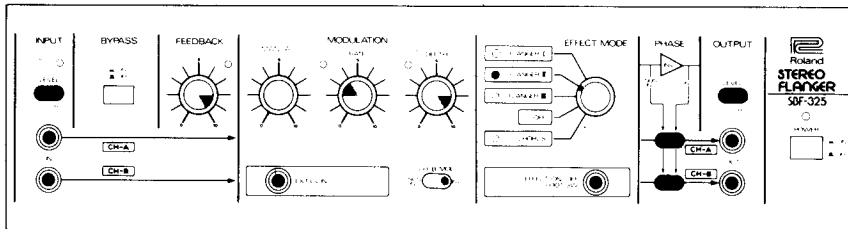
Example setting for a strong flanging effect. Set CENTER FREQ control ⑧ as desired.

● If both INPUTS ① ② are used when in the FLANGER I mode, the CHANNEL A INPUT jack ① will have priority. Also, the CH-B MOD switch ⑬ and the CHANNEL B PHASE switch ⑭ have no effect.

**FLANGER II**

**Stereo flanging mode.**

Produces a wide three-dimensional effect using two independent delay lines. A "seesaw" effect can be produced by putting the CH-B MOD switch ⑬ in the INV (invert) position.



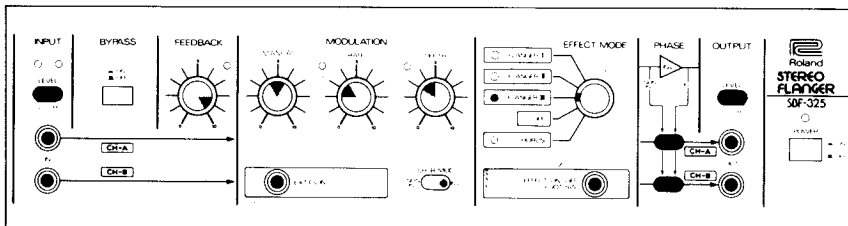
Example settings for stereo flanging.

● Using only one output for monaural sound produces an effect like that of the FLANGER I mode.

**FLANGER III**

**Cross-mixing stereo flanging mode.**

A stereo flanging effect using the two delay lines and a panning effect to produce wide, space filling sound.



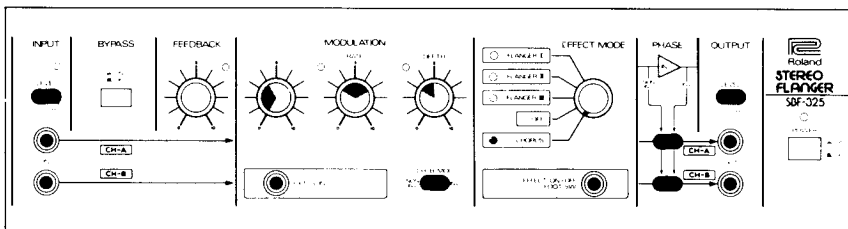
The effect is a little like phase shifted sound with the addition of a light depth giving chorus effect. Changing the FEEDBACK control ⑥ will produce large changes in the sound.

● When using in the monaural mode, the effect is similar to that of the FLANGER II mode sound.

**CHORUS**

**Chorus mode.**

This mode produces chorus sounds by means of the delay lines.



**MANUAL control ⑧**  
Set at a relatively low position in relation to the fundamental (pitch) of the input sound.

● The FEEDBACK control ⑥ does not work in the CHORUS mode.

**RATE control ⑨:**  
Counterclockwise: chorus effect is lessened.  
Clockwise: chorus effect with vibrato.  
When using CHORUS in stereo, the CH B MOD switch ⑬ is often set at INV