DFX69

TWEAKALIZER

User's Manual

Version 1.0   January 2004
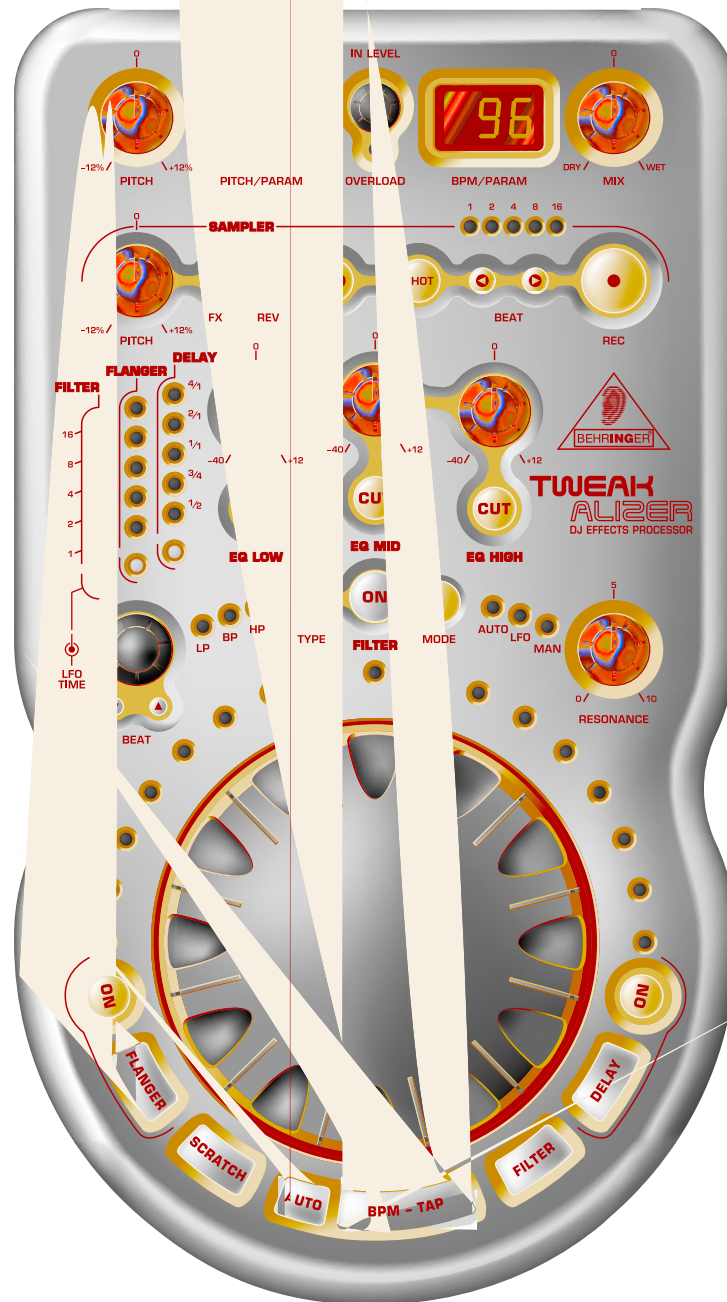
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BEHRINGER®
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TWEAKALIZER

High-End DJ Effects Processor with Real-Time Control

▲ Desktop DJ effects machine with 6 simultaneous functions and super-intuitive user interface

▲ Incredible real-time scratch function for any input signal

▲ Super-fast and accurate auto-BPM counter

▲ Virtually inaudible Pitch Transposer to correct track speed adjustments

▲ Breathtaking LFO-controlled effects section including delay and flanger

▲ Awesome filter effects with 3 filter types (low, high and band pass), 3 filter modes (auto, manual, LFO) and separate resonance control

▲ Groove- and BPM-related loop sampler with up to 16 seconds of memory

▲ Ultra-steep 3-band kill EQ (-40 dB) with separate cut buttons per band

▲ Switchable phono/line input with built-in high-precision phono preamplifier for connecting turntables and CD sources

▲ Flexible Signal/Effect balance and input gain control

▲ Ultimate sonic resolution with ultra high-resolution 24-bit A/D and D/A converters and high-performance 24/48-bit DSP

▲ Gold-plated RCA connectors for excellent audio quality

▲ Ultra-rugged construction ensures long life, even under most demanding conditions

▲ Designed in Germany. Manufactured under ISO9000 certified management system

TWEAKALIZER DFX69

FOREWORD

Dear Customer,

Welcome to the team of TWEAKALIZER users and thanks for expressing your confidence in BEHRINGER products by purchasing the DFX69.

Writing this foreword for you gives me great pleasure, because it represents the culmination of many months of hard work delivered by our engineering team to achieve a very ambitious goal: to design an outstanding DJ effects processor that offers remarkable functions as well as maximum flexibility and performance. The task of designing our new TWEAKALIZER represented a great deal of responsibility, which we surmounted by focusing on you, the discerning user and DJ. Meeting your expectations also meant a lot of work and night shifts. But it was fun, too. Developing a product usually brings a lot of people together, and what a great feeling it is when everyone who participated can be proud of what they've achieved.

It is our philosophy to share our enjoyment with you, because you are the most important member of the BEHRINGER team. With your highly competent suggestions for new products you've made a significant contribution to shaping our company and making it successful. In return, we guarantee you uncompromising uality (manufactured under ISO9000 certified management system) as well as excellent technical and audio properties at an extremely reasonable price. All of this will enable you to give free rein to your creativity without being hampered by budget constraints.

We are often asked how we manage to produce such high- uality devices at such unbelievably low prices. The answer is uite simple: it's you, our customers! Many satisfied customers mean large sales volumes, enabling us to get better purchasing terms for components, etc. We think it's only fair to pass this benefit on to you—after all, your success is our success!

I would like to thank all of those who have made the TWEAKALIZER possible. You have all made your own personal contributions, from the developers and the many other employees at this company to you, the BEHRINGER user.

My friends, it's been worth the effort!

Thank you very much,

Uli Behringer

TABLE OF CONTENTS

1. INTRODUCTION

The BEHRINGER TWEAKALIZER DFX69 is a flexible DJ effects processor that gives you an important edge for your mixes and performances. Its uni ue features let you work in completely new and creative ways. The TWEAKALIZER can be used in many ways and is breeze to operate, allowing you to expand your creativity.

Times are changing uickly and you have to stay ahead of the game if you don't want to be left behind. To this end, we have developed an excellent DJ effects processor with the most popular new features and technologies. It is perfectly suited for use in dance clubs or for DJ systems.

Be honest: who really likes to read manuals? We know you want to get started right away, but we strongly suggest that you take the time to read these instructions so that you fully understand and are able to properly use all the features your TWEAKALIZER has to offer. The few minutes it takes you will be well worth it.

☞ **The following user's manual is intended to familiarize you with the unit's control elements, so that you can master all the functions. After having thoroughly read the user's manual, store it at a safe place for future reference.**

1.1 Before you get started

1.1.1 Shipment

The TWEAKALIZER was carefully packed at the assembly plant to assure secure transport. If the condition of the cardboard box suggests that damage may have occurred, please inspect the unit immediately and look for physical indications of damage.

☞ **Damaged equipment should NEVER be sent directly to us. Please inform the dealer from whom you acquired the unit immediately as well as the transportation company from which you took delivery of the unit. Otherwise, all claims for replacement/repair may be rendered invalid.**

☞ **To assure optimal protection of your DFX69 during transport, we recommend utilizing a carrying case.**

☞ **If the unit needs to be shipped, please always use the original packaging to avoid damage.**

☞ **Never let unsupervised children play with the DFX69 or with its packaging.**

☞ **Please dispose of all packaging materials in an environmentally-friendly fashion.**

1.1.2 Initial operation

Please make sure the unit is provided with sufficient ventilation. To avoid overheating, never place the TWEAKALIZER on top of an amplifier or in the vicinity of a heater.

A power supply unit that meets the necessary safety re uirements is enclosed for connecting the TWEAKALIZER to the mains.

When the DFX69 is connected to the mains via the power supply unit it is automatically switched on.

☞ **Never connect the TWEAKALIZER to a power supply unit that is already plugged into the mains! Always connect the DFX69 to the power supply unit first and then plug the power supply into the mains.**

☞ **Please make sure that the unit is grounded at all times. For your own protection, you should never tamper with the grounding of the cable or the unit itself.**

1.1.3 Warranty

Please take a few minutes and send us the completely filled out warranty card within 14 days of the date of purchase to assure trouble-free warranty processing in the future. You may also register online at www.behringer.com. The serial number needed for the registration is located at the top of the unit. Failure to register your product may void future warranty claims.

1.2 The user's manual

This user's manual gives you an overview of the functions and control elements of your TWEAKALIZER and offers detailed information about possible applications. To facilitate uick reference, control elements have been described in groups according to their function. Should you need detailed information about specific topics not covered in this manual, please visit our website at www.behringer.com.
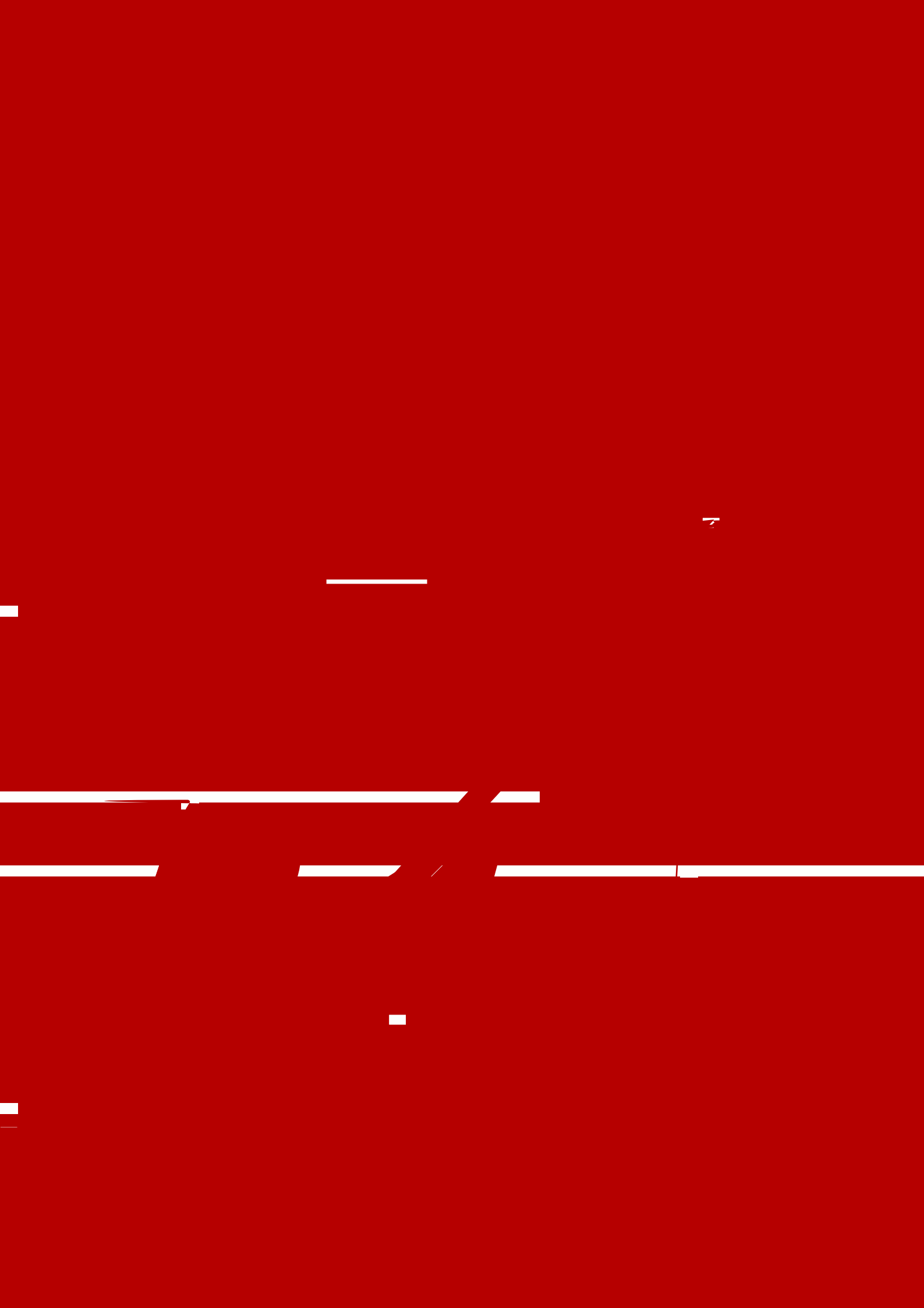
3 The *MIX* control adjusts the volume ratio between the original signal and the effects signal. When the control is turned all the way to the left, you hear only the original ("DRY") signal; turning it all the way to the right you hear only the selected effects ("WET") signal.

To change the mix ratio of a previously activated effect, first tap the FLANGER (22) or DELAY (24) key. The LED of the respective ON switch (21 or 23) will then blink rapidly. You can also adjust the mix ratio when the SCRATCH function is active.

☞ **The MIX control adjusts the mix between the original signal and the effects signal of the <u>most recently selected</u> effect (indicated by rapid blinking of the ON key of the corresponding effect). To adjust the mix ratio of a previously activated effect, first dial up this effect using the corresponding effects key (see 22, 24 and 25).**

4 The *PITCH* control lets you change the pitch of the input signal (+/-12%).

5 PITCH value (from -12 to +12%) *DISPLAY*. If you press the ENCODER (see 14) to switch between different effects, the editable time parameter is briefly shown. The remaining recording time of a sample and the sampler PITCH value are also shown here (see also ch. 2.2 "Sampler"). If no additional changes are made, your DFX69 automatically returns to PITCH display mode after a few seconds.

2.2 Sampler

6 The *BEAT* keys select the length of the sample you want to record. You can choose between 1, 2, 4, 8 or 16 bars, whereby the actual length of the sample is detected on the basis of the current BPM value. The corresponding LED will illuminate to display the selected number of bars. Once you start recording, it will automatically end at the end of the selected length of recording time. You can also define your own sample length by stepping through all bar values until the right LED ("16") blinks. You can now start and stop recording at will (see 7) for any length of sample up to 16 bars.

7 *REC* starts recording a sample; the remaining recording time of the selected sample length is shown in the left display (see 5). Pressing REC again ends the recording. The sampler records the signal connected to the input of your DFX69.

8 *PLAY/STOP* plays the sample you just recorded (PLAY: the sample signal is played in a continuous loop). If you hit PLAY/STOP again, the loop stops (STOP). If you press REC to start recording a sample and press PLAY/STOP during recording, the sample is recorded in full length and then directly played back.

☞ **If you select one of the sample lengths (1, 2, 4, 8 or 16) and end the recording using the REC key before the selected number of bars has played, the remaining time is filled with "silence". Therefore, the actual sample length remains unchanged. To define your own sample length, you must use the method described above (see 6).**

9 *SHOT* plays the sample as long as you keep the SHOT key pressed.

10 *FX* determines whether the sampler signal is routed to the effects processor. When the FX button is in (depressed), only the sampler signal is fed to the effects path (the input signal bypasses the effects processor; it remains "dry"). When the FX button is out, only the input signal is routed to the effects processor; the sampler signal remains "dry".

11 The *REV* key reverses the sample. When depressed (in), the sample will be played backwards when you press the PLAY/STOP or SHOT key.

12 *PITCH* adjusts the sample tempo and pitch (-12 to +12%). The PITCH value is indicated in the display 5. When you are finished adjusting the sample pitch, the display once again shows the PITCH value of the input signal.

2.3 The effects section

13 The DFX69 features a 3-band "kill" EQ (*LOW*, *MID* and *HIGH*). That means that you can attenuate (cut or lower) individual fre uency bands to a much greater extent (-40 dB) than you can increase them (+12 dB). In addition to the EQ controls, each fre uency band features a *CUT* key. Pressing CUT will immediately attenuate the respective fre uency band by -40 dB, allowing you to create very interesting sound effects.

14 The *ENCODER* has two functions: By **pressing** the ENCODER, you select an effect to be edited. This effect is then shown in the display 2. By **turning** the ENCODER, you can now continuously adjust the LFO and delay times (in contrast to the BEAT keys located beneath; see 15). The parameter value is always shown in the display 5 while you are editing.

<u>Explanation:</u>

LFO stands for <u>Low Fre uency Oscillator</u>. This is a low-fre uency signal that modulates effect parameters such as delay time, flanger resonance fre uency and filter fre uency.

15 The *BEAT* keys also let you dial up LFO and delay times, but in this case there are predetermined increments (rather than continuous adjustment). These times always refer to the current BPM value. The LFO and delay times are shown on the corresponding LEDs located above the ENCODER.

2.3.1 FILTER

The filter effect is a special feature of the DFX69. It offers three different filter types that can be operated in three different modes. The filter types and modes are explained in detail under 17 and 18.

16 *ON* activates/deactivates the FILTER effect of the DFX69. The LEDs around the DATAWHEEL (see 26) indicate the current filter fre uency.

17 *TYPE* selects the filter you wish to use:

LOW PASS (LP):

The low pass filter attenuates (cuts or lowers) fre uencies <u>above</u> a cut-off fre uency by 24 dB/octave. The cut-off fre uency is determined by the selected filter mode (see 18) that creates the filter effect.

HIGH PASS (HP):

The high pass filter attenuates fre uencies <u>below</u> a cut-off fre uency by 24 dB/octave. Here, the cut-off fre uency is also determined by the selected filter mode (see 18).

BAND PASS (BP):

The band pass filter attenuates all fre uencies except for those defined by <u>an adjustable middle fre uency</u>. It has a rating of 12 dB/octave. The middle fre uency is determined by the filter mode here as well (see 18).

18 *MODE* selects a filter mode. The following three modes are available:

LFO mode, **MANUAL** mode and **AUTO** mode.

Press the MODE key briefly to alternate between the LFO and MANUAL modes. To activate the AUTO mode, keep the MODE key pressed for a few seconds. Pressing MODE again briefly reactivates LFO mode.

TWEAKALIZER DFX69

LFO (Low Frequency Oscillator)

In this mode, the LFO modulates the cut-off fre uency from the lowest to the highest fre uency and back to the lowest fre uency. The modulation speed can be either adjusted continuously using the ENCODER or incrementally using the BEAT keys (see [14] and [15]). The increments available via the BEAT keys are always relative values expressed in beats. For example, if you enter "2", it will take two beats for the cut-off fre uency to modulate from the lowest to the highest fre uency and back. The DFX69 calculates the time on the basis of the current BPM signal automatically.

MANUAL

In this mode, the cut-off fre uency can be adjusted using the large DATAWHEEL (see [26]). This also allows real-time filter modulation. You can adjust the reaction time of the filter using the ENCODER or the BEAT keys located beneath it (see [14] and [15]). The shorter the reaction time, the uicker the filter reacts to the DATAWHEEL movement.

AUTO

In AUTO mode, the filter fre uency is modulated via the level of the music signal. In this mode, it is important to set up the filter sensitivity so that it correctly reacts to the input signal (see [19]).

[19] *FILTER* has a function similar to the SHOT key in the SAMPLER section. Pressing and holding the FILTER key activates the FILTER effect. As soon as you release the key, the FILTER effect is deactivated.

When in AUTO mode, the FILTER key has an extra function: keeping it pressed while turning the DATAWHEEL allows you to adjust the sensitivity of the filter to compensate for varying levels between tracks, which will cause the filter to react differently to various tracks. For example, if the volume of one track is lower than that of a previous track, you should increase the filter sensitivity so that the filter will react appropriately to the rhythm.

[20] *RESONANCE* increases the cut-off fre uency of the LOW PASS and the HIGH PASS filter (0 - 10), adding presence to the effect.

2.3.2 FLANGER

The word "flange" means "tape spool", and this explains the characteristics of the effect. Originally, the flanger effect was generated with two tape recorders that ran synchronously. The same audio signal was recorded and played back on both machines (e.g. a guitar solo). Applying pressure on the left spool of one of the machines caused the spool and thus the playback speed to slow down. The generated delay resulted in phase shifting of the signals.

[21] *ON* activates/deactivates the FLANGER effect on the DFX69.

To determine the speed of the effect, first dial up the FLANGER effect by pressing the ENCODER (see [14]). Then, use the BEAT keys located beneath it to dial up one of the predetermined speed values. This value is a relative value that is calculated based on the current BPM value. By turning the ENCODER, you can continuously adjust the flanger speed. By turning the DATAWHEEL while the effect is active (see [ ]

6. WARRANTY

§ 1 WARRANTY CARD/ONLINE REGISTRATION

To be protected by the extended warranty, the buyer must complete and return the enclosed warranty card within 14 days of the date of purchase to BEHRINGER Spezielle Studiotechnik GmbH, in accordance with the conditions stipulated in § 3. Failure to return the card in due time (date as per postmark) will void any extended warranty claims. Based on the conditions herein, the buyer may also choose to use the online registration option via the Internet (www.behringer.com or www.behringer.de).

§ 2 WARRANTY

1. BEHRINGER (BEHRINGER Spezielle Studiotechnik GmbH including all BEHRINGER subsidiaries listed on the enclosed page, except BEHRINGER Japan) warrants the mechanical and electronic components of this product to be free of defects in material and workmanship for a period of one (1) year* from the original date of purchase, in accordance with the warranty regulations described below. If the product shows any defects within the specified warranty period that are not excluded from this warranty as described under § 4, BEHRINGER shall, at its discretion, either replace or repair the product using suitable new or reconditioned parts. In the case that other parts are used which constitute an improvement, BEHRINGER may, at its discretion, charge the customer for the additional cost of these parts.

2. If the warranty claim proves to be justified, the product will be returned to the user freight prepaid.

3. Warranty claims other than those indicated above are expressly excluded.

§ 3 RETURN AUTHORIZATION NUMBER

1. To obtain warranty service, the buyer (or his authorized dealer) must call BEHRINGER (see enclosed list) during normal business hours BEFORE returning the product. All in uiries must be accompanied by a description of the problem. BEHRINGER will then issue a return authorization number.

2. Subse uently, the product must be returned in its original shipping carton, together with the return authorization number to the address indicated by BEHRINGER.

3. Shipments without freight prepaid will not be accepted.

§ 4 WARRANTY REGULATIONS

1. Warranty services will be furnished only if the product is accompanied by a copy of the original retail dealer's invoice. Any product deemed eligible for repair or replacement under the terms of this warranty will be repaired or replaced.

2. If the product needs to be modified or adapted in order to comply with applicable technical or safety standards on a national or local level, in any country which is not the country for which the product was originally developed and manufactured, this modification/adaptation shall not be considered a defect in materials or workmanship. The warranty does not cover any such modification/adaptation, irrespective of whether it was carried out properly or not. Under the terms of this warranty, BEHRINGER shall not be held responsible for any cost resulting from such a modification/adaptation.

3. Free inspections and maintenance/repair work are expressly excluded from this warranty, in particular, if caused by improper handling of the product by the user. This also applies to defects caused by normal wear and tear, in particular, of faders, crossfaders, potentiometers, keys/buttons, tubes, guitar strings and similar parts.

4. Damages/defects caused by the following conditions are not covered by this warranty:

▲ improper handling, neglect or failure to operate the unit in compliance with the instructions given in BEHRINGER user or service manuals.

▲ connection or operation of the unit in any way that does not comply with the technical or safety regulations applicable in the country where the product is used.

▲ damages/defects caused by force majeure or any other condition that is beyond the control of BEHRINGER.

5. Any repair or opening of the unit carried out by unauthorized personnel (user included) will void the warranty.

6. If an inspection of the product by BEHRINGER shows that the defect in uestion is not covered by the warranty, the inspection costs are payable by the customer.

7. Products which do not meet the terms of this warranty will be repaired exclusively at the buyer's expense. BEHRINGER will inform the buyer of any such circumstance. If the buyer fails to submit a written repair order within 6 weeks after notification, BEHRINGER will return the unit C.O.D. with a separate invoice for freight and packing. Such costs will also be invoiced separately when the buyer has sent in a written repair order.

§ 5 WARRANTY TRANSFERABILITY

This warranty is extended exclusively to the original buyer (customer of retail dealer) and is not transferable to anyone who may subse uently purchase this product. No other person (retail dealer, etc.) shall be entitled to give any warranty promise on behalf of BEHRINGER.

§ 6 CLAIM FOR DAMAGES

Failure of BEHRINGER to provide proper warranty service shall not entitle the buyer to claim (conse uential) damages. In no event shall the liability of BEHRINGER exceed the invoiced value of the product.

§ 7 OTHER WARRANTY RIGHTS AND NATIONAL LAW

1. This warranty does not exclude or limit the buyer's statutory rights provided by national law, in particular, any such rights against the seller that arise from a legally effective purchase contract.

2. The warranty regulations mentioned herein are applicable unless they constitute an infringement of national warranty law.

* Customers in the European Union please contact BEHRINGER Germany Support for further details.