

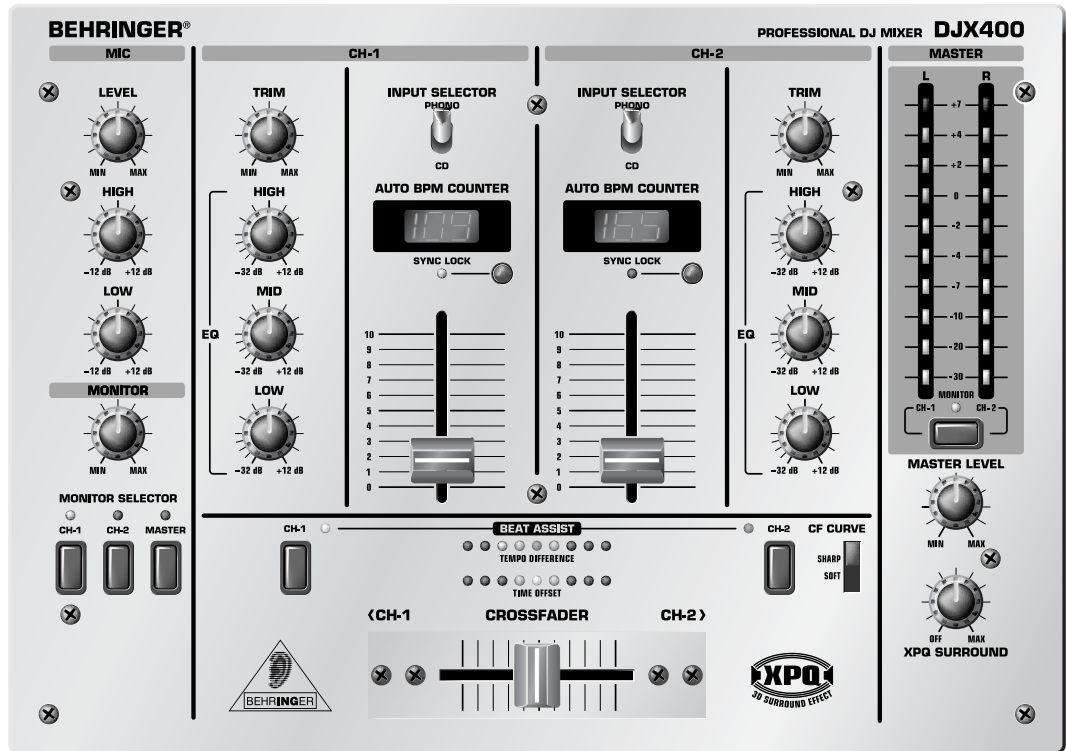
DJX400

PRO MIXER

User's Manual

Version 1.0 August 2002

ENGLISH



www.behringer.com

PRO MIXER DJX400

SAFETY INSTRUCTIONS



CAUTION: To reduce the risk of electric shock, do not remove the cover (or back). No user serviceable parts inside; refer servicing to qualified personnel.

WARNING: To reduce the risk of fire or electric shock, do not expose this device to rain and moisture.



This symbol, wherever it appears, alerts you to the presence of uninsulated dangerous voltage inside the enclosure—voltage that may be sufficient to constitute a risk of shock.



This symbol, wherever it appears, alerts you to important operating and maintenance instructions in the accompanying literature. Please read the manual.

DETAILED SAFETY INSTRUCTIONS:

All the safety and operation instructions should be read before the device is operated.

Retain Instructions:

The safety and operating instructions should be retained for future reference.

Heed Warnings:

All warnings on the device and in the operating instructions should be adhered to.

Follow instructions:

All operation and user instructions should be followed.

Water and Moisture:

The device should not be used near water (e.g. near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, near a swimming pool etc.).

Ventilation:

The device should be situated so that its location or position does not interfere with its proper ventilation. For example, the device should not be placed on a bed, sofa, rug, or similar surface that may block the ventilation openings, or used in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.

Heat:

The device should be situated away from heat sources such as radiators, heat registers, stoves, or other devices (including amplifiers) that produce heat.

Power Source:

The device should only be connected to a power supply of the type described in the operating instructions or on the device.

Grounding or Polarization:

This device must be grounded.

Power Cords:

Power cords should be routed so that they are not likely to be walked on or pinched by items placed on or against them, paying particular attention to cords and plugs, sockets, outlets and the point at which they exit from the device.

Cleaning:

The device should be cleaned only as recommended by the manufacturer.

Non-use Periods:

The power cord of the device should be unplugged from the outlet when left unused for a long period of time.

Debris and Liquid Entry:

Debris and/or liquids should not be allowed to enter the enclosure through openings.

Damage Requiring Service:

The device should be serviced by qualified service personnel when:

- ▲ The power cord or the plug has been damaged; or
- ▲ Debris or liquid has entered the device; or
- ▲ The device has been exposed to rain; or
- ▲ The device does not appear to operate normally or exhibits a pronounced change in performance; or
- ▲ The device has been dropped, or the enclosure damaged.

Servicing:

The user should not attempt to service the device beyond that which is described in the operating instructions. All other servicing should be referred to qualified service personnel.

PRO MIXER

Professional 2-channel DJ Mixer with BPM Counter

- ▲ Intelligent dual auto-BPM counter with time and beat sync display
- ▲ Super-smooth dual-rail “Ultraglide” faders with up to 500,000 life cycles
- ▲ Awesome adjustable XPQ 3D surround effect
- ▲ Switchable crossfader curve control
- ▲ Two dual input stereo channels with gain and 3-band kill EQ (-32 dB)
- ▲ One microphone input with studio-grade ULN technology and 2-band EQ PFL function with split option
- ▲ Extremely precise assignable level meter with peak hold function
- ▲ Signal send (PFL) and return loop
- ▲ Gold-plated cinch sockets for excellent audio quality
- ▲ Super-rugged construction ensures long life, even under the most demanding conditions
- ▲ Manufactured under ISO9000 certified management system

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PRO MIXER DJX400

FOREWORD



Dear Customer,

Welcome to the team of PRO MIXER users and thank you very much for expressing your confidence in BEHRINGER products by purchasing the DX400. 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 excellent DJ mixer offering remarkable functions with the maximum in flexibility and performance.

The task of designing our new PRO MIXER certainly meant a great deal of responsibility which we assumed by focusing on you, the discerning user and DJ. Meeting your expectations also meant a lot of work and effort. But it was fun, too. Developing a product usually brings a lot of people together, and what a great feeling it is when everybody who has participated in such a project 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 quality (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-quality devices at such unbelievably low prices. The answer is quite simple: it's you, our customers! Many satisfied customers mean large sales volumes enabling us to get better purchasing terms for components, etc. So it's only fair to pass this benefit on to you, isn't it? Because we know that your success is our success too!

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

My friends, it's been worth the effort!

Thank you very much,

Uli Behringer

TABLE OF CONTENTS


1. INTRODUCTION	4
1.1 Before you begin	4
2. CONTROL ELEMENTS	5
2.1 Stereo channels 1 and 2	5
2.2 Microphone channel	5
2.3 MONITOR section	5
2.4 MASTER section	6
2.5 Crossfader section	6
2.6 Front panel connectors	6
2.7 XPQ 3D surround effect	6
2.8 Auto BPM counter	6
3. CONNECTORS	7
4. SPECIFICATIONS	8
5. WARRANTY	9

1. INTRODUCTION

Your purchase of the BEHRINGER PRO MIXER DX400 has put you at the forefront of today's trends in DJ mixing consoles. Numerous features, such as the beat counter and the looping path, enable you to work in completely new and creative ways. The DX400 is a mixer for professional use, it is extremely easy to operate and it helps you give free rein to your creativity.


Time is tight and if you don't want to be left in the dust, you'd better get moving. To help you along, we have developed an excellent DJ mixing console with the most popular new features and technologies. It is perfectly suited for use in dance clubs or for DJ systems and is sure to deliver tons of pure fun.

Be honest: who really likes to read manuals? We know you want to get started right away, but it is only after reading these instructions that you will fully understand and be able to properly use all the features your DX400 has to offer. Take the time to read everything through!

 **This manual first describes the terminology used, so that you can fully understand the DX400 and its functions. Please read the manual carefully and keep it for future reference.**


1.1 Before you begin

Your DJX400 was carefully packed in the factory and the packaging is designed to protect the unit from rough handling. Nevertheless, we recommend that you carefully examine the packaging and its contents for any signs of physical damage that may have occurred during transit.

 **If the unit is damaged, please do NOT return it to BEHRINGER, but notify your dealer and the shipping company immediately. Otherwise claims for damage or replacement may not be granted.**

To avoid overheating, ensure that there is enough space around the unit for cooling and that the device is not placed near other devices giving off heat.

WARNING!

 **We would like to point out that high volume may damage your hearing and/or your headphones. Please turn the MASTER control all the way to the left before turning on the device. Always make sure that the appropriate volume is set.**

2. CONTROL ELEMENTS

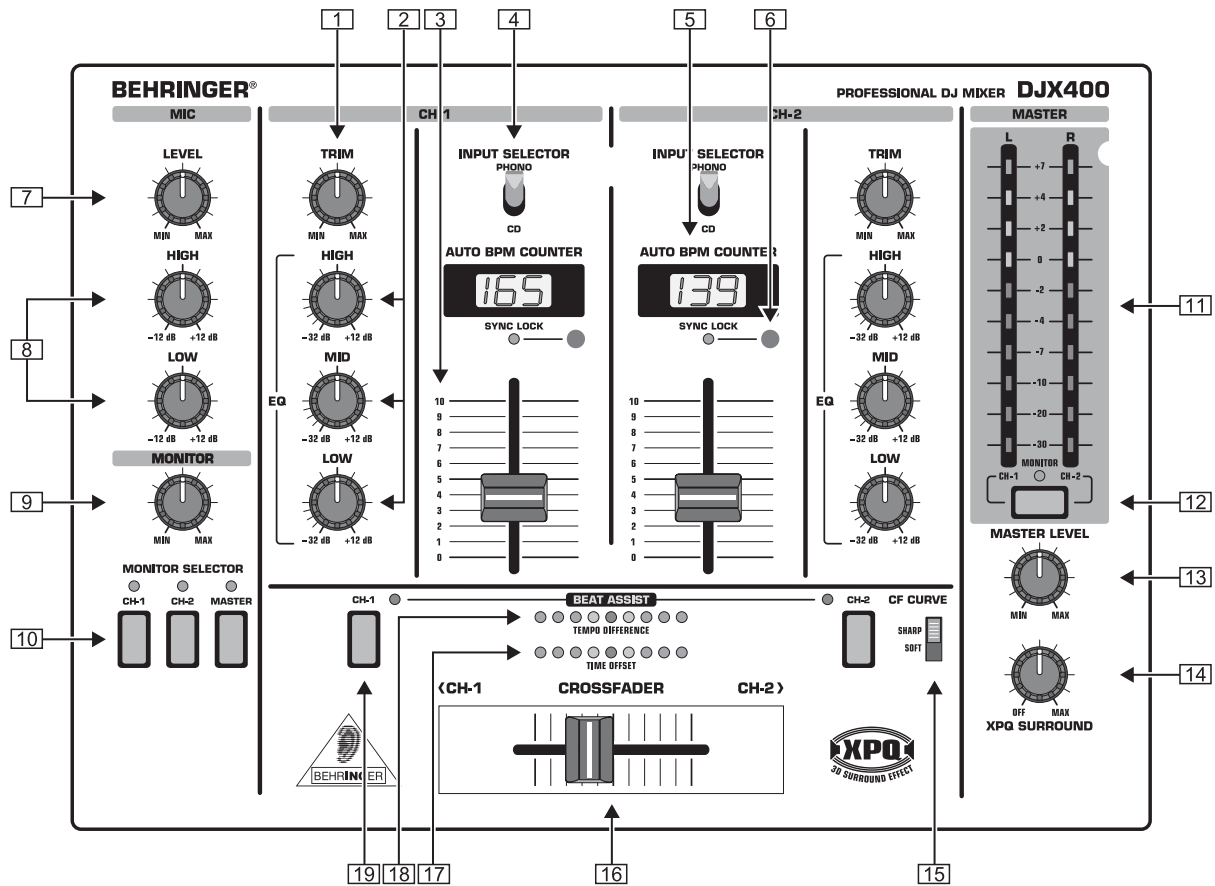


Fig. 2.1: PRO MIXER DJX400 control elements

2.1 Stereo channels 1 and 2

- 1 The *TRIM* control in the CHANNEL section is used to adjust the level of the input signal.
- 2 Each of the two input channels has a 3-band equalizer (*HI*, *MID* and *LOW*) with kill characteristic. Thus, the signal can be lowered to a much greater extent (-32 dB) than it can be raised (+12 dB). This function can be very useful when, for example, fading a frequency range out of a music track.
- 👉 The total level also depends on the EQ setting. Thus, you should adjust the equalizer before regulating the level with the *TRIM* control.
- 3 Adjust the channel volume with the CHANNEL fader.
- 👉 Never connect devices with line level to the highly sensitive phono inputs! The output level of phono pick-up systems is measured in millivolts, whereas CD players and tape decks have levels measured in volts, i.e. the level from line signals is up to 100 times higher than that of the phono inputs.
- 4 You select the input signals with the *INPUT SELECTOR* switch (*PHONO/CD*). "Phono" is for connecting a turntable. "Line" must be selected for all other signal sources (e.g. CD or MD players). A special feature allows you to switch the input sensitivity of the phono input to line-level, giving the phono connector flexibility (see [25]).

- 5 This is the *AUTO BPM COUNTER DISPLAY* (see Chapter 2.8).
- 6 The *SYNC LOCK* button is also a part of the *AUTO BPM COUNTER* (see Chapter 2.8).

2.2 Microphone channel

- 7 Select the volume of the microphone signal with the *TRIM* control in the MIC section.
- 8 There is a 2-band equalizer (*HI* and *LOW*, no kill characteristic) in the microphone section. This allows you to change your voice to adapt perfectly to your sound.

2.3 MONITOR section

The *MONITOR* signal is your headphones signal, allowing you to listen to music without affecting the *MASTER* output signal.

- 9 The *MONITOR* Level control determines the volume of the headphones signal.
- 10 With the *MONITOR SELECTOR* button you select the signal to be routed to your headphones. You can choose from signals from channel 1, channel 2 or the *MASTER* signal. It is also possible to select two signal sources and listen to them simultaneously. That could either be the two input channels (*CH-1* and *CH-2* pressed) or one input signal and the *MASTER* signal (*CH-1* or *CH-2* and *MASTER* pressed). All three signals, however, cannot be simultaneously routed to the headphones; if this were to


PRO MIXER DJX400

happen, the MASTER signal is the only one that would be heard. The MASTER signal is taken post MASTER LEVEL control, whereas the signals from the two input channels are pre CHANNEL faders and are routed to the MONITOR section.

MONITOR SELECT			Headphones output	
CH-1	CH-2	MASTER	L	R
ON	OFF	OFF	CH-1 "L"	CH-1 "R"
OFF	ON	OFF	CH-2 "L"	CH-2 "R"
OFF	OFF	ON	MASTER "L"	MASTER "R"
ON	ON	OFF	CH-1 "L" + CH-2 "L"	CH-1 "R" + CH-2 "R"
ON	OFF	ON	CH-1 "MONO"	MASTER "MONO"
OFF	ON	ON	CH-2 "MONO"	MASTER "MONO"

Table 2.1: Selecting a signal with the Monitor Select button

2.4 MASTER section

- [11] The *LEVEL METER* displays the signal level selected with [12].
- [12] With this switch you determine whether it is the MASTER or the MONITOR signal to be indicated on the LEVEL METER. When the *MONITOR* LED lights up, it indicates the level of the headphones signal.
-  In monitor mode, the *LEVEL METER* displays the channel 1 signal on the left and the channel 2 signal on the right.
- [13] This is the *MASTER LEVEL* control to adjust the output volume at the MASTER output (see [28]).
- [14] The *SURROUND* control determines the intensity of the XPQ 3D surround effect (see Chapter 2.7).

2.5 CROSSFADER section

- [15] The *CF CURVE* switch, to the right of the CROSSFADER, allows you to put the fader control character in two stages. In *SOFT* mode the volume is controlled evenly over the whole slide. In *SHARP* mode the volume control is limited to the outer portions of the slide. Naturally, a difference in volume can occur when switching modes. Thus, don't use this switch when the music is on!
- [16] The *CROSSFADER* is for crossfading between channels 1 and 2. The CROSSFADER, like the CHANNEL fader, is also a professional 45 mm fader.
- [17] The *TIME OFFSET* LED indicates the synchronisation of channels 1 and 2 (see Chapter 2.8).
- [18] The *TEMPO DIFFERENCE* LED displays tempo differences between the signals from channel 1 and 2 (see Chapter 2.8).
- [19] The *BEAT ASSIST* button is for manually determining the tempo for channels 1 and 2 (see Chapter 2.8).

2.6 Front panel connectors

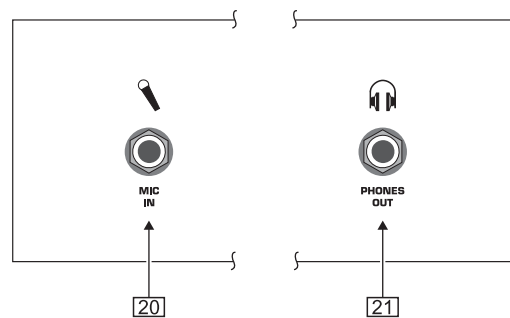



Fig. 2.2: Headphones and microphone connector

- [20] The *MIC IN* connector is the balanced jack input for a dynamic microphone.
-  **We strongly discourage the use of cheap plugs for transmitting audio signals. Please use only high-quality plugs as these provide the best corrosion protection.**
- [21] The *PHONES OUT* connector is for you to listen to bits of music with your headphones (MONITOR signal). Your headphones should have a minimum impedance of 32 ohms.

2.7 XPQ 3D surround effect

The XPQ 3D surround function is a built-in effect that puts the finishing touches to your music and turns every gig into a real experience. The widening of the stereo base makes for a livelier, more transparent sound. You select the intensity of the effect with the *XPQ SURROUND* control.

2.8 Auto BPM Counter

The PRO MIXER DJX400 auto BPM counter is an extremely useful feature. It ensures smooth transition from one track to the next, making your session an absolute success. It can calculate the various tempi of tracks in bpm (beats per minute). The channel 1 and channel 2 BPM counter sections are identical.

Each channel's *DISPLAY* [4] indicates the track tempo. Several tempo changes in one track would produce a constant display of various BPM values and thus lead to unnecessary confusion. That's why the beat counter sections each have a *SYNC LOCK* button [5] that can be used during the song to limit the range of possible tempo values. This makes sense if the counter has already calculated a realistic value. You can do the same thing manually with the *BEAT ASSIST* button [17]. Pushing this button at least three times in sync with the song's tempo results in the calculated tempo appearing in the *DISPLAY*. The *BEAT ASSIST* and *SYNC LOCK* buttons are each equipped with a LED.

When you have limited the tempo of the tracks on both channels with the *SYNC LOCK* or *BEAT ASSIST* buttons, the difference in tempo from channel 1 and channel 2 is illustrated in the form of a nine-character message on the *TEMPO DIFFERENCE*-LED [18]. The extent of the difference in tempo is indicated by a corresponding swing to the right (the channel 1 signal is slower) or to the left (the channel 2 signal is slower). When the middle LED lights up, the tempi are the same. The *TIME OFFSET* LED [19] below that displays the channel 1 and 2 synchronisation. Should the middle LED light up, the tracks are synchronised. Should the display move to the left or right, either channel 1 or channel 2 is not synchronised. The *TEMPO DIFFERENCE* and *TIME OFFSET* displays are only active if the tempi of both channels have been fixed in one of the ways described.

To exit the SYNC LOCK or BEAT ASSIST modes, simply push the SYNC LOCK button once more on both channels.

3. CONNECTORS

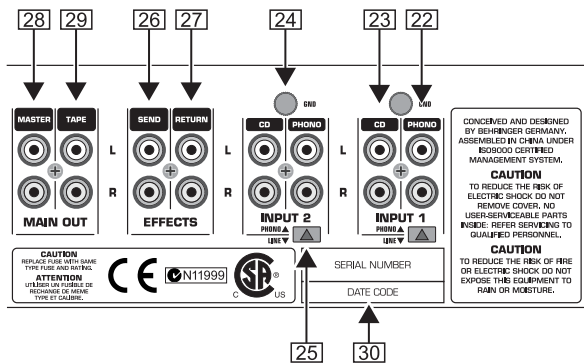


Fig. 3.1: The DJX400 rear panel connectors

With the exception of the microphone and headphone connectors, the PRO MIXER DX400 only has cinch jacks, which can be found on the rear panel of the console.

- [22] The *PHONO* inputs for channels 1 and 2 are for connecting a turntable.
 - [23] These are the *CD* inputs (Line) to connect a tape deck, CD or MD player etc.
 - [24] The *GND* connectors ground the turntables.
 - [25] With the *PHONO/LINE* switch it is possible to switch the input sensitivity of the *PHONO* inputs to line-level. This allows you to connect a tape deck or a CD player to the *PHONO* inputs.
 - [26] The DJX400 has an integrated effect path for an external effect device. The *MONITOR* section signal is tapped via *SEND* and routed, for example, to an echo device. Thus, the signal at the *SEND* connector is identical to the headphones signal and is selected with the *MONITOR SELECTOR* button.
 - [27] The externally processed signal is added to the *MASTER* output signal upon its *RETURN*. The effect signal volume may only be adjusted at the output control of the effect device itself, as the DJX400 has no additional level control for this purpose. If no effects are needed, the *RETURN* can also be used as an additional recording path for a sampler or the like. Here, too, the output volume must be adjusted on the external device.
 - [28] The *MASTER* output is for connecting to an amplifier and is to be adjusted with the *MASTER LEVEL* control.
- ⚠️ As soon as you are ready to add an effect signal to the output signal, the channel on your headphones (*MONITOR*) and the channel at the output (*MASTER*) must be the same. If you are listening to the other channel on your headphones, the effect signal of a completely different song will be added to the *MASTER* signal. This is because the effect device gets its input signal from the *MONITOR* section (see [26]) and the effect signal produced in this way is added to the *MASTER* signal.**
- [29] The *MASTER* output is for connecting to an amplifier and is to be adjusted with the *MASTER LEVEL* control.
- ⚠️ Always turn the power amps on last to avoid inrush currents that can easily damage your speakers. And, to avoid sudden and unpleasant surprises for your ears, make sure there is no signal at the**

DX400 before turning on the power amps. To be sure, slide all the faders to the bottom and switch all controls to the zero position.

- [29] Using the *TAPE* output you can record your music by connecting devices such as tape decks, DAT recorders etc. Unlike the *MASTER* output, the output volume is fixed, making it necessary for you to adjust the input level on the recording device.
- [30] **DJX400 SERIAL NUMBER.** Please take the time to complete and return the warranty card within 14 days of the date of purchase. Or, simply register online at www.behringer.com

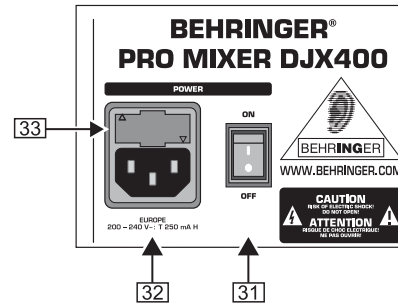


Fig. 3.2: DJX400 mains connection and serial number

- [31] Turn the DJX400 on with this switch.
- [32] This is the connector for the power cable. This is where the advantage of a sophisticated internal power supply can be seen: the pulse behaviour of each amplifying circuit is mainly determined by the voltage reserves available. Each mixing console is equipped with numerous operational amplifiers (op amps) to process line level signals. Due to limited output of their power supplies, many mixing consoles show signs of "stress" when subjected to heavy loads. But not your DJX400: the sound is always clear and transparent.
- [33] **FUSE HOLDER / VOLTAGE SETTING.** Before connecting the unit to the mains, ensure that the voltage setting matches your local voltage. Blown fuses should only be replaced by a fuse of the same type and rating. On some units, the fuses holder can be switched to one of two positions, i.e. 230 V and 115 V. N.B: should you desire to operate the unit outside Europe at 115 V, a higher fuse rating is required.

PRO MIXER DJX400

4. SPECIFICATIONS

AUDIO INPUTS

Mic	40 dB Gain, elec. balanced input
Phono 1 and 2	40 dB Gain @ 1 kHz, unbalanced inputs
Line 1 and 2	0 dB Gain, unbalanced inputs
Return	0 dB Gain, unbalanced input

AUDIO OUTPUTS

Master	max. +21 dBu @ +10 dB (Line In)
Tape	type 0 dBu
Send	type 0 dBu
Phones Out	type 140 mΩ @ 1% THD

EQUALIZER (+/-8 dB)

Stereo Low	+12 dB/-32 dB @ 50 Hz
Stereo Mid	+12 dB/-32 dB @ 1.2 kHz
Stereo High	+12 dB/-32 dB @ 10 kHz
Mic Low	+12 dB/-12 dB @ 50 Hz
Mic High	+12 dB/-12 dB @ 10 kHz

GENERAL

Signal-to-noise ratio (S/N)	> 88 dB (Line)
Crosstalk	> 77 dB (Line)
Distortion (THD)	< 0.06%
Frequency response	20 Hz - 20 kHz
Gain control range	-20 dB - +9 dB

POWER SUPPLY

Mains Voltage	USA/Canada 120 V ~, 60 Hz U.K./Australia 240 V ~, 50 Hz Europe 230 V ~, 50 Hz
General	
Export Model	100-120V~, 200-240V~, 50-60Hz
Power Consumption	max. 10 W
Fuse	100 - 120 V ~: T 350 mA H 200 - 240 V ~: T 250 mA H
Mains Connection	Standard IEC Receptacle

DIMENSIONS/WEIGHT

Dimensions (H x W x D)	approx. 3.46" (88 mm) x 12.2" (310 mm) x 8.65" (220 mm)
Weight	approx. 2.3 kg

BEHRINGER makes every effort to ensure the highest standard of quality. Necessary modifications are carried out without notice. Thus, the specifications and design of the device may differ from the information given in this manual.

5. 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 § 3 and 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 inquiries must be accompanied by a description of the problem. BEHRINGER will then issue a return authorization number.

2. Subsequently, 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 by BEHRINGER under the terms of this warranty will be repaired or replaced within 30 days of receipt of the product at BEHRINGER.

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, potentiometers, keys/buttons 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 question 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 subsequently 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 (consequential) 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.

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