



Für drinnen und draussen - For indoors and outdoors

**Achtung!**

Verpackung und Betriebsanleitung aufbewahren!  
Nicht für Kinder unter 8 Jahren geeignet, modellbedingt besteht Quetsch- und Klemmgefahr durch Antriebsgestänge der Lok.  
Nicht für Kinder unter 8 Jahren geeignet, wegen funktions- und modellbedingter scharfer Kanten und Spitzen.

**Attention!**

This product is not for children under 8 years of age. It has moving parts that can pinch and bind.  
This product is not for children under 8 years of age. This product has small parts, sharp parts and moving parts.

**Attention!**

Veillez conserver l'emballage et le mode d'emploi!  
Ne convient pas aux enfants de moins de 8 ans. L'embiellage de la locomotive peut pincer les doigts de jeunes enfants.  
Ne convient pas aux enfants de moins de 8 ans. Présence de petits éléments susceptibles d'être avalés.

**Attenzione!**

Conservare l'imballo e le istruzioni per l'uso!  
Non adatto a bambini di età inferiore agli 8 anni poiché vi è possibilità a pericolo di schiacciamento delle dita quando il treno è in funzione.  
Non adatto a bambini di età inferiore agli 8 anni in quanto le strutture presentano spigoli vivi e punte acuminate.

**Atención!**

Guardar el carton de embalaje y las Instrucciones para el uso!  
No adecuado para niños menores de 8 años. Según el modelo, existe el peligro de sufrir contusiones o de cogerse los dedos a causa del varillaje de accionamiento de la locomotora. No adecuado para niños menores de 8 años, debido a cantos y puntas peligrosas condicionadas por la función o el modelo.

**Attentie!**

Verpakking en gebruiksaanwijzing bewaren!  
Niet geschikt voor kinderen onder de 8 jaar omdat deze loc aandrijfstan- gen bezit waaraan kinderen zich kunnen bezeren.  
Niet geschikt voor kinderen onder de 8 jaar omdat dit model functionele scherpe kanten en punten bezit.

Änderungen der technischen Ausführungen vorbehalten.  
We reserve the right to make technical alterations without prior notice.  
Modifications de constructions réservées.

# Bedienungsanleitung

## Instruction

### Instructions de Service

# JUMBO

engineered for:

- multiple locomotives
- large layouts
- multiple track blocks
- long track blocks with significant power loss
- advanced control functions
- remote control connection
- 10 amp power output



# JUMBO

## THE PRODUCT

The JUMBO is a very powerful and versatile power pack. Its features are unmatched by any other model railroad power pack:

- true 10 amp output to power more locomotives
- easy to read, illuminated displays for track voltage and track current
- automatic protection against overload and overheating
- adjustable acceleration and braking
- adjustable maximum and minimum voltages
- adjustable timer
- buttons for emergency stop, stop and direction of travel
- connectors for external control of emergency stop, stop, direction and timer
- triple terminals for track power
- connector for 50106 JUMBO Remote Control, Wired

## 50101 120 V

Input: 120 volt AC  
Output: 0-24 volt DC  
Drive current: 10.0 amps max.  
Dimensions: 334 x 212 x 140 mm  
(13.2 x 8.4 x 5.5 in)



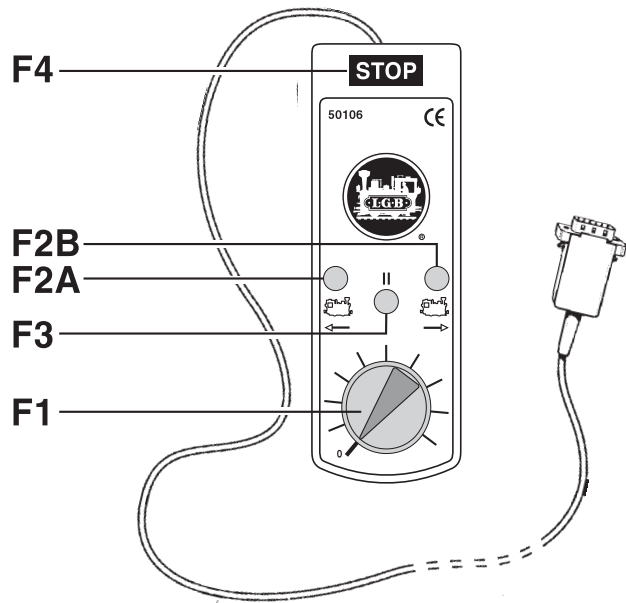
## Technical features:

- 10 amp power output
- adjustable acceleration
- adjustable deceleration
- adjustable maximum voltage
- adjustable minimum voltage
- delay timer (0-75 seconds)
- volt and amp meters
- touch keys with LED indicators
- special functions for automatic train operation
- special functions for remote control
- meets strict international safety regulations

# Wired Remote Control

## LGB 50106

(not included)



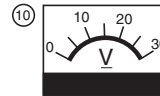
- F1 Throttle knob
- F2A Forward
- F2B Reverse
- F3 Brake with pre-selected deceleration
- F4 Emergency stop (with no delay)

### Operation

- Allows outdoor operation with JUMBO power.
- Allows freedom of movement with included 12 meter (39 foot) cable.  
(Cable can be extended up to 30 meters (100 feet) using RS-232 cables available at computer stores).

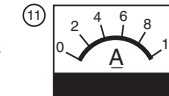
## Controls of the JUMBO

Voltmeter 0 - 30 volts  
Indicates drive voltage



Drive voltage

Indicators



Drive current

Ammeter 0 - 10 amps  
Indicates drive current

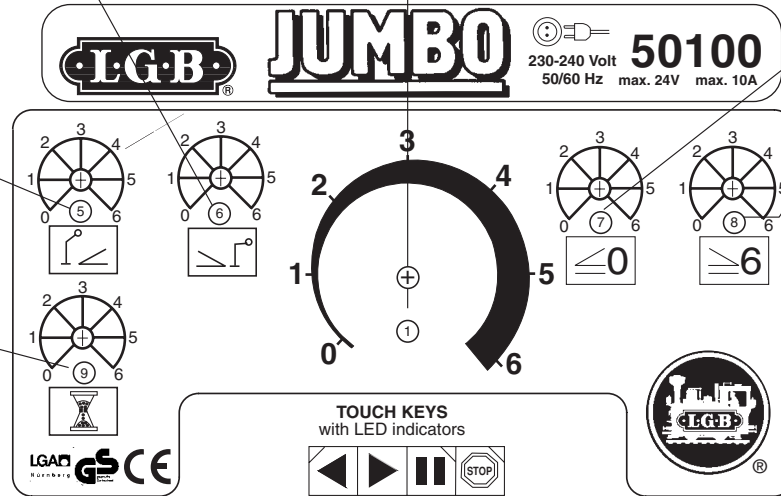
**Variable controls:**  
All variable control functions can be turned off by setting the controls to "0".

**Acceleration**

**Delay Timer (0-75 seconds)**  
This timer is activated using LGB 17000/17100 track contacts or other switches. Once the timer has been started, it can be cancelled before the timed period has elapsed by pressing a direction key.

**Braking**

**Drive voltage control**  
Infinitely variable



**Minimum drive voltage**  
Adjusts the output voltage at the "0" setting of control ①

**Maximum drive voltage**  
Adjusts the output voltage at the "6" setting of control ①

**For ⑦ and ⑧**  
After setting the voltage range with ⑦ and ⑧ the range of the throttle knob ① remains constant (270°).

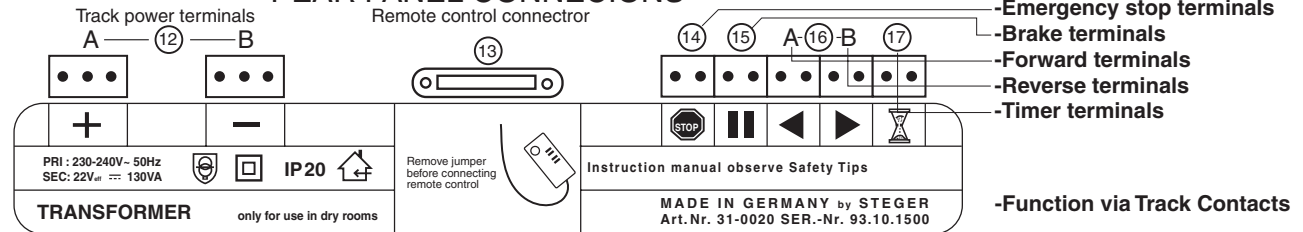
Forward  
Reverse

**TOUCH KEYS**  
with LED indicators



Emergency Stop (with no delay)  
Brake (with pre-selected deceleration)

## PEAR PANEL CONNECTIONS



**TRANSFORMER** only for use in dry rooms

MADE IN GERMANY by STEGER  
Art. Nr. 31-0020 SER.-Nr. 93.10.1500

-Function via Track Contacts

The JUMBO gives model railroaders enough power for large, complex layouts and multiple locos. You can use its features for automatic operation, for example, by using track contacts to trigger slow track sections or station stops.

## THE PROGRAM

With this model, we recommend the following items:

- 00559 LGB Explore Guide Book, English
- 50106 JUMBO Remote Control, Wired
- 50161 Track Power Terminals, 2 pieces
- 51230 Blue/Red 2-Wire Cable, 15 m

For information on the complete LGB program, see the LGB catalog.

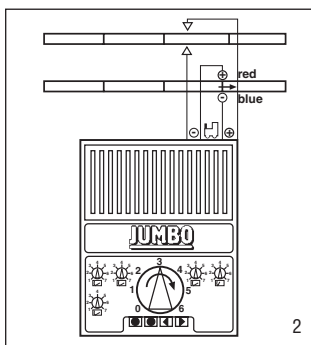
## PREPARATION

### CAUTION! Safety advice:

- This power supply should be inspected regularly for possible dangers, such as damage to the cables, plugs or housing. If damage is found, do not use this power supply. The house current cable cannot be replaced.
- Disconnect this power supply from house current before cleaning the housing.
- Disconnect this power supply from house current if there is a short circuit or overload. Remove the short circuit or overload before connecting the power supply again.
- This power supply is for indoor use only. Keep it away from moisture. The power pack must be placed in a well-ventilated location. Do not install it in an enclosed space. It generates heat!
- Do not insert anything into the air

vents.

- This power supply is for use with LGB and LEHMANN products only.
- This product is not a toy. It is a power supply and/or throttle for LGB products only. This product is not for children under 14 years of age.
- Save the supplied instructions and packaging.



### Connecting the transformer

**Attention!** If your layout has diodes installed in the electric circuit of the tracks (for example, at signals, reversing modules, reversing loops, etc.), the diodes must be rated for 10 amps. If necessary, replace the diodes.

Connect the power pack with the tracks (Fig. 2) using the screw terminals at the rear of the power pack. All red terminals are interconnected, as well as all blue terminals. Use the enclosed cable to connect a red terminal with one rail, a blue terminal with the other rail.

**Attention!** Use wires with a cross section of at least 1,5 mm<sup>2</sup> (14 AWG) to connect the JUMBO (for example, LGB 51230).



**Hint:** Twist the wire ends before inserting them into the terminal (Fig. 3). Plug the power pack cord into a house current outlet.

## OPERATION

To familiarize yourself with the JUMBO, set all knobs to "0" (Fig. 1). In this setting, the JUMBO is similar to other power packs, except that it is controlled by buttons in addition to the throttle knob. When a button is activated, the LED on the button illuminates.

- Select the direction of travel by pressing one of the arrow buttons (② or ②).
- Turn the big red knob in the center (①) clockwise from 0. The output voltage increases, visible on the voltage display (voltmeter) (⑩). The locomotive moves. The current display (ammeter) (⑪) shows the current the locomotive draws.
- Select the speed as usual using the big red knob.
- To change the direction, press the other arrow button. The train brakes automatically, stops, and accelerates in the other direction until it reaches the pre-set speed.
- To stop the train, press the "Halt" button with two vertical lines (③). The train slows with the preset deceleration and stops.
- Use the "STOP" button (④) to stop the train immediately.
- To restart the loco, simply press one of the arrow buttons. The train accelerates until it reaches the

speed selected with the throttle knob.

### Overload protection

This power pack is protected against short circuits and overloading.

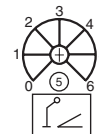
1. Short circuit: The voltage display (voltmeter) (⑩) shows 0 and the current display (ammeter) (⑪) is at the maximum value. Immediately unplug the transformer from the house current outlet. Find and remove the short circuit. Reconnect the power pack cord.
2. Overheating: The power pack switches off automatically if it is overheating. Wait about 1 hour until it has cooled. Resume operations with fewer locomotives.

### Outdoor operation

The JUMBO power pack must be placed in a dry, sheltered inside location. For outdoor operation, use the 50106 JUMBO Remote Control, Wired. You can extend the cable for the 50106 up to 30 m (100 ft.) using RS232 Interface Cables, available at electronics stores.

### Remote Control

Use the 50106 JUMBO Remote Control, Wired (available separately) to remotely control the most important functions of the JUMBO. For more information, see the instructions for the 50106.

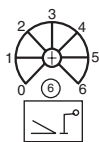


### Control 5: Acceleration

Are all controls set to 0? To familiarize yourself with this function, set the throttle knob (①) to position 3. Press the STOP button (④). Set control (⑤) to a mid-range position. Now select a direction of travel by pressing one of

the arrow buttons ④. The loco will accelerate slowly. This represents a long and heavy train of the prototype (train mass simulation). If you set control ② to higher values, acceleration is slower.

The train mass simulation is active even when you turn up the throttle knob ① quickly. The train accelerates according to the pre-set acceleration.



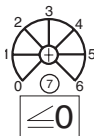
### Control 6: Braking

Are all controls set to 0? To familiarize yourself with this function, set control ⑥ to a mid-range position. Use the throttle knob to start the train and get it up to speed. Press the HALT button ③ (marked with two lines). The train slows down with realistic deceleration and stops.

Use the STOP button ④ to stop the train immediately to prevent an accident.

When you press the arrow button for the current direction of travel, the braking is interrupted. The train accelerates again until it reaches the pre-set speed.

The selected braking value is active even when you turn the throttle knob ①.



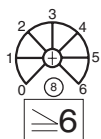
### Control 7: Minimum voltage

Are all controls set to 0? To familiarize yourself with this function, press one of the two arrow buttons ② or the HALT button ③. Now adjust control ⑦ to 1, 2, 3, etc. The track voltage increases even though the throt-

tle knob is set to 0. This allows you to operate slow track sections. Or you can set the minimum voltage so that lights and sound of locos with starting delay circuits work even when the loco is standing.

When you now press the HALT button ③, the track voltage does not go to ④, but to the selected minimum voltage.

Press the STOP button d to reduce the track voltage to 0 immediately.

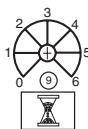


### Control 8: Maximum voltage

Are all controls set to 0? To familiarize yourself with this function, press one of the two arrow buttons ② and set the throttle knob ① to the highest speed setting (6). Now adjust control ⑧ clockwise to 1, 2, 3, etc. The track voltage and thus the loco speed decrease. Limiting the top speed of your trains ensures that they do not derail on tight curves.

The range of adjustment for the throttle knob ① remains the same, giving you more precise control over your trains.

**Hint:** The operation of controls ⑦ and ⑧ (minimum and maximum voltage) are not entirely independent. After changing one setting, check the other and adjust it, if necessary.



### Control 9: Timer

This function cannot be triggered via the buttons. To familiarize yourself with this function, you need a short piece of wire or a paper clip. Set con-

trol ⑨ to a mid-range position. Set throttle knob ① to a mid-range position as well. Select a direction of travel ②. Now the loco runs at a medium speed. Briefly bridge the two black terminals ⑰. The loco brakes (with the pre-set deceleration) and stops. After the selected timer interval (0-75 seconds) has elapsed, the loco restarts and accelerates with the pre-set acceleration. Together with control ⑦ (minimum voltage), you can operate a slow track section. Select the minimum voltage so that the train runs at the desired speed when the throttle knob 1 is set to 0.

The timer can be activated using 17100 EPL Track Contacts to operate station stops or slow track sections.

### Combining the functions

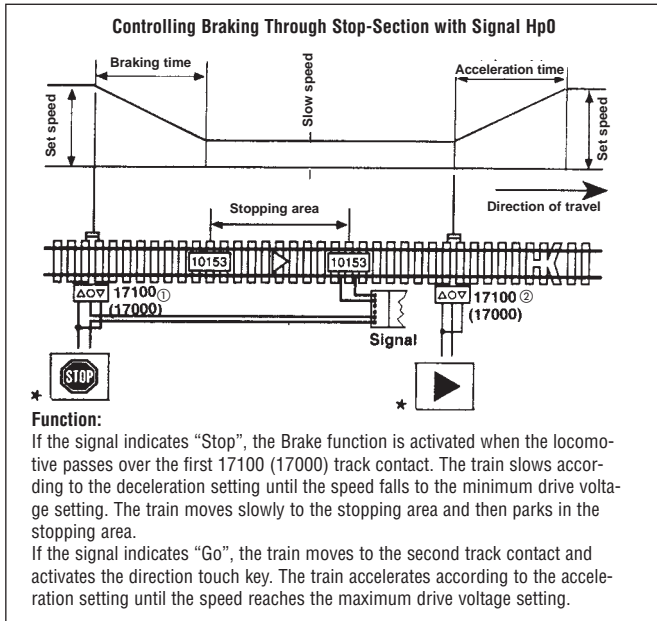
Obviously, you can combine all functions. All locos that are located in the track block connected to the JUMBO operate simultaneously.

### Triggering the buttons using the rear terminals

The buttons can be triggered manually or automatically (for example, using 17100 EPL Track Contacts). For automatic train control, use the two terminals associated with each button. Briefly bridge the terminals (for example, using a momentary switch or a 17100 EPL Track Contact) to trigger the function. When a button is triggered, the LED on the button illuminates.

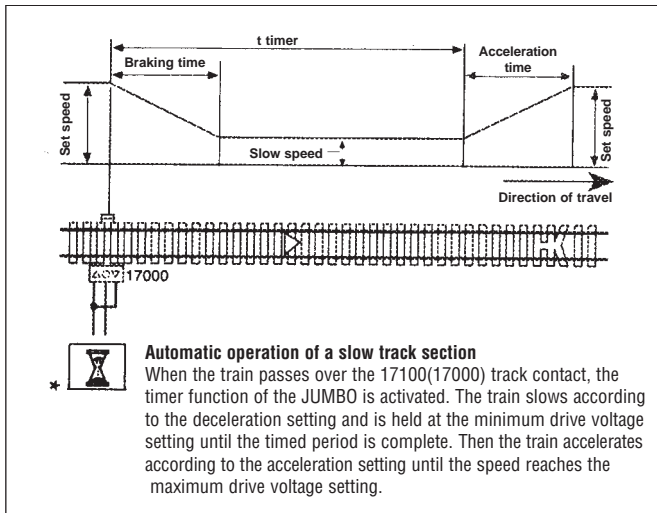
For further examples, see the 00559 LGB Guide.

## Additional examples for automatic train control.



4

### \* Automatic operation in a signal controlled stop section



5

## SERVICE

**Attention!** Improper service will void your warranty. For quality service, contact your authorized retailer or an LGB factory service station (see **Authorized Service**).

The power pack does not require maintenance. Clean it using a dry cloth. Do not use fluids to clean the power pack.

### Problems

If the locomotives always go at top speed, no matter how the throttle knob is set, check whether the wire bridge on the terminals for the 50105/50106 JUMBO Remote Control is installed. When no remote control is connected, the wire bridge must be installed. Otherwise, the JUMBO provides maximum voltage as soon as it is connected to a house current outlet.

If other problems occur, check first whether these problems are caused by malfunctions in the layout. Reset the JUMBO to its initial setting: Set all controls to 0 and disconnect any connections at the black terminals on the rear. Then check the individual functions as described in these instructions.

**The power pack may be opened ONLY by the manufacturer. Unauthorized opening voids the warranty.**

## AUTHORIZED SERVICE

Improper service will void your warranty. For quality service, contact your authorized retailer or one of the following LGB factory service stations:

### Ernst Paul Lehmann Patentwerk

Reparatur-Abteilung  
Saganer Strasse 1-5  
D-90475 Nürnberg  
GERMANY  
Telephone: (0911) 83707 0  
Fax: (0911) 83707 70

### LGB of America

Repair Department  
6444 Nancy Ridge Drive  
San Diego, CA 92121  
USA  
Telephone: (858) 535-9387  
Fax: (858) 535-1091

You are responsible for any shipping costs, insurance and customs fees.

**Hint:** Information on LGB products and LGB representatives around the world is available online at [www.lgb.com](http://www.lgb.com)

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#### GARANTIE

Unsere Produkte sind Präzisionsarbeit in Design und Technik. Wie bei einer wertvollen Uhr werden feinstmechanische Präzisionsteile von Hand gefertigt. Permanente Materialkontrollen, Fertigungskontrollen und die Endkontrolle vor Auslieferung garantieren unser gleichbleibend hohes Qualitätsniveau. Um wirklich ungetrübten Spaß zu haben, lesen Sie bitte diese Garantie- und Bedienungsanleitung.

Wir (ERNST PAUL LEHMANN PATENTWERK) auf dieses Produkt weltweit eine Garantie von **2 Jahren** ab dem Erstkauf für Fehlerfreiheit von Material und Funktion, sofern dieses Produkt mit Kaufbeleg bei einem von uns autorisierten Fachhändler erworben wurde.

Bei berechtigten Reklamationen innerhalb von 2 Jahren nach Kaufdatum werden wir gegen Vorlage des entsprechenden Kaufbeleges nach unserem Ermessen kostenlos nachbessern, bzw. kostenlosen Ersatz liefern. Sollten Nachbesserung oder Ersatzlieferung unmöglich sein, so räumen wir Ihnen nach unserem Ermessen eine angemessene Minderung ein oder erstatten Ihnen statt dessen den Kaufpreis zurück.

Unabhängig von diesen Garantieleistungen bleiben Ihnen selbstverständlich Ihre gesetzlichen Ansprüche insbesondere wegen Sachmängel erhalten.

Um einen Anspruch auf Garantieleistung geltend zu machen, übergeben Sie bitte das beanstandete Produkt, zusammen mit dem Kaufbeleg, Ihrem von uns autorisierten Händler. Um einen autorisierten Händler zu finden, wenden Sie sich bitte an eine der unten aufgeführten Service-Abteilungen. Sie können das Produkt auch, zusammen mit dem Kaufbeleg, an eine der beiden unten aufgeführten Serviceabteilungen einschicken. Die Einsendung erfolgt zu Ihren Lasten.

#### ERNST PAUL LEHMANN PATENTWERK

Service-Abteilung Garantie  
Saganer Str. 1-5  
90475 Nürnberg  
Deutschland  
Telefon (09 11) 83 707-0

#### LGB OF AMERICA

Warranty Service Department  
6444 Nancy Ridge Drive  
San Diego, CA 92 121  
USA

Tel.: (858) 535-93 87

#### Bitte beachten Sie:

- Für Schäden durch unsachgemäße Behandlung oder Fremdeingriff sowie für Verschleißteile besteht kein Garantieanspruch.

- Transformatoren und Regler unterliegen strengen CE-UL-Vorschriften und dürfen nur vom Hersteller geöffnet und repariert werden. Zuwiderhandlungen bewirken zwingend Garantieverlust und generelle Reparaturverweigerung.

- Nur für USA: Diese Garantie gibt Ihnen genau definierte Rechte. Weiterhin verbleiben Ihnen unter Umständen je nach Bundesstaat weitere Rechte.

Wir sind sehr stolz auf unsere Produkte. Wir alle hoffen, daß sie Ihnen viele Jahre lang Freude bereiten.

#### WARRANTY

This precision product is made using quality designs and technology. Like a fine timepiece, it has been crafted by hand. Constant monitoring of materials and assembly, together with final testing, ensure a consistent level of high quality. To get the most enjoyment from this product, we encourage you to read the instructions and this warranty.

We (Ernst Paul Lehmann Patentwerk) warrant this product worldwide for **two years** from the date of original consumer purchase against defects in materials and workmanship, if purchased from an authorized retailer.

If you have a valid warranty claim, including proof of purchase from an authorized retailer, we will repair or replace the product at our discretion. If it is impossible to repair or replace the product, we will refund all or a reasonable portion of the purchase price at our discretion.

Of course, you may have other legal rights independent of this warranty, particularly in the case of material defects. To make a claim under this warranty, please bring the product, with the proof of purchase, to your authorized retailer. To find an authorized retailer, please contact one of the service departments listed below. You may also send the product, with the proof of purchase, directly to one of the service departments listed below. You are responsible for any shipping costs, insurance and customs fees.

#### ERNST PAUL LEHMANN PATENTWERK

Service-Abteilung Garantie  
Saganer Str. 1-5  
90475 Nürnberg  
Deutschland  
Telephone: (09 11) 83 707 0

#### LGB OF AMERICA

Warranty Service Department  
6444 Nancy Ridge Drive  
San Diego, CA 92121  
USA  
Telephone: (858) 535-93 87

#### Please note:

- This warranty does not cover damage caused by improper use or unauthorized modifications/repairs. This warranty does not cover normal wear and tear.

- Transformers and controls are subject to strict CE and UL regulations and may only be opened and repaired by the manufacturer. Any violations automatically void this warranty and prevent any repair by us.

- U.S. only: This warranty gives you specific legal rights, and you may also have other rights which vary from State to State.

We are very proud of our products, and all of us sincerely hope they give you many years of enjoyment!

Wolfgang, Rolf, Johannes  
Richter

#### GARANTIE

Nos produits de qualité supérieure sont le résultat du mariage de l'innovation et de la technologie. À l'instar d'une montre précieuse, tous les composants sont fabriqués à la main par nos artisans méticuleux. Un programme rigoureux d'assurance de la qualité, de la sélection des matériaux à l'assemblage et aux vérifications avant sortie des ateliers, garantissent un haut niveau de qualité constante. Afin d'obtenir la plus grande satisfaction de ce produit, veuillez lire la fiche d'instructions ainsi que cette garantie.

Nous (Ernst Paul Lehmann Patentwerk) garantissons ce produit, à l'échelle mondiale, contre tout vice de matière et de fabrication, pendant deux ans à partir de la date d'achat par l'acheteur original, si le produit a été acheté chez un détaillant autorisé.

Si vous demandez un recours en garantie pour un motif jugé recevable, joignez la preuve de l'achat chez un détaillant autorisé et nous réparerons ou remplacerons le produit à notre discrétion. S'il s'avère impossible de réparer ou de remplacer le produit, nous rembourserons, à notre discrétion, tout ou partie du prix d'achat. Vous pouvez disposer d'autres droits légaux en plus de cette garantie, en particulier en cas de vice de matière.

Pour initier une demande de règlement au titre de cette garantie, veuillez ramener le produit, avec la preuve d'achat, à votre revendeur autorisé. Pour trouver l'adresse d'un revendeur autorisé, veuillez entrer en rapport avec l'un des Centres de service après-vente ci-dessous. Vous pouvez également renvoyer le produit, avec la preuve d'achat, directement à l'un des Centres de service après-vente ci-dessous. L'expéditeur est responsable des frais d'expédition, de l'assurance et des frais de douane.

#### ERNST PAUL LEHMANN PATENTWERK

Service-Abteilung Garantie  
Saganer Str. 1-5  
90475 Nürnberg  
ALLEMAGNE  
Tel.: (09 11) 83 707 0

#### LGB OF AMERICA

Warranty Service Department  
6444 Nancy Ridge Drive  
San Diego CA 92121  
ETATS-UNIS  
Tel.: (858) 535-93 87

#### Veuillez bien noter que :

- Cette garantie ne couvre pas les dommages résultant d'une utilisation inadéquate, ni de modification/réparation non autorisée. Cette garantie ne couvre pas l'usure normale.

- Les transformateurs et commandes sont conformes aux normes rigoureuses CE et UL et ne peuvent être ouverts et réparés que par le fabricant. Toute violation à cet égard entraînera la perte impérative de tous les droits de garantie et un refus de toutes réparations, quelles qu'elles soient.

- États-Unis uniquement : Cette garantie vous donne des droits légaux spécifiques, et vous pouvez également avoir d'autres droits qui varient d'un État à l'autre. Nous sommes très fiers de nos produits et nous vous souhaitons des années d'amusement inoubliables avec votre hobby qui est également le nôtre.

