Bedienungsanleitung
Instruction
Instructions de Service

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

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

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

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)
### 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**

- **Volts**: 0 - 30 volts indicates drive voltage
- **Amp**: 0 - 10 amps indicates drive current
- **Braking Drive voltage control**: Infinitely variable
- **Minimum drive voltage**: Adjusts the output voltage at the “0” setting of control
- **Maximum drive voltage**: Adjusts the output voltage at the “6” setting of control
- **For** and **(i)**: After setting the voltage range with **F12** and **F13** the range of the throttle knob **F10** remains constant (270°).

**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 timer period has elapsed by pressing a direction key.

**Flashing Indicators**

- **A** for 0-3 volts
- **B** for 4-6 volts

**Emergency Stop (with no delay)**

**Brake (with pre-selected deceleration)**

**PEAR PANEL CONNECTIONS**

- **A** Emergency stop terminals
- **B** Brake terminals
- **C** Forward terminals
- **D** Reverse terminals
- **E** Timer terminals
- **Function via Track Contacts**

**Transformer**

- **Pri.**: 230-240 V~
- **Sec.**: 22 Veff (27 Vmax 130 W) +

**Instruction Manual observe Safety Tips**

Made in Germany by Steger

Art. Nr. 31-0020 Ser.-Nr. 93.10.1500
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 mm² (14 AWG) to connect the JUMBO (for example, LGB 51230).

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 3).
- Turn the big red knob in the center (1) clockwise from 0.
The output voltage increases, visible on the voltage display (voltmeter) (5).
The locomotive moves. The current display (ammeter) (6) 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) (5) shows 0 and the current display (ammeter) (6) 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 ➄. The loco will accelerate slowly. This represents a long and heavy train of the prototype (train mass simulation). If you set control ➂ to higher values, acceleration is slower.

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

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 ➊ 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 ➊.

Control 7:
Minimum 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 ➊ 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 ➊ 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 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 ➊ 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 ➊ remains the same, giving you more precise control over your trains.

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 control ⑨ to a mid-range position. Set throttle knob ➊ 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 ⑦. 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.
**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 a 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

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GARANTIE


ERNST PAUL LEHMANN PATENTWERK
Service-Abteilung Garantie
Saganer Str. 1-5
90475 Nürnberg
Deutschland

Warranty Service Department
6444 Nancy Ridge Drive
San Diego, CA 92121
USA

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!

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, 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

Warranty Service Department
6444 Nancy Ridge Drive
San Diego, CA 92121
USA

Telephone: (858) 535-93 87

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

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6444 Nancy Ridge Drive
San Diego, CA 92121

WASHINGTON, DC 20545 USA

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