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Safety Notes

- This model may only be used with the operating system designed for it.
- Use only switched mode power supply units and transformers that are designed for your local power system.
- This locomotive must never be supplied with power from more than one power pack.
- Pay close attention to the safety notes in the instructions for your operating system.
- Not for children under the age of 15.
- **WARNING!** Sharp edges and points required for operation.

Important Notes

- The operating instructions are a component part of the product and must therefore be kept in a safe place as well as included with the product, if the latter is given to someone else.
- Please see your authorized LGB dealer for repairs or spare parts.
- The warranty card included with this product specifies the warranty conditions.
- Disposing: www.maerklin.com/en/imprint.html

Functions

- This model is designed for operation on LGB two-rail DC systems with conventional LGB DC train controllers or power packs (DC, 0 - 24 volts).
- This model comes from the factory with a built-in multi-train system decoder (multi-train system).
- For operation with the Multi-Train System, the model is programmed to loco address 03.

Note: Use a locomotive controller with more than 1 amp of train current for this model.

Preparation

Couple the tender to the locomotive and plug in the connecting cable before operating the locomotive (Figure 1).

Mode of Operation Switch

This locomotive has a 4-position mode of operation switch (Figure 2).

- | | |
|--------|---|
| Pos. 0 | Locomotive stopped without current |
| Pos. 1 | Lighting and smoke unit turned on |
| Pos. 2 | Locomotive motor, smoke unit, and lighting turned on |
| Pos. 3 | Locomotive motor, smoke unit, lighting, and sound turned on |

Smoke Unit

This model is equipped with a smoke unit. Fill the smoke stack only halfway with smoke fluid. If you put in too much fluid, the smoke unit cannot produce smoke.

Important! Use only Märklin 2420 smoke fluid. Other liquids may damage your locomotive.

Important! Do not touch the heating element in the middle of the smoke unit. It is hot and can break.

Note: The smoke unit can be operated "dry" without smoke fluid. When the tank is empty, the heating and the fan will turn off after about 2 minutes.

Due to the high amount of smoke produced, we recommend making sure there is enough ventilation in enclosed areas.

Multi-Purpose Socket

This model has a general-purpose socket on the back wall of the cab for flat plugs (Figure 3). If you are equipping a car with interior lighting or with a sound effects module, you can connect it to the socket and power that circuit with track voltage. To remove the cover of the socket, pull it straight out. If the cover is tight, gently use a small straight screwdriver to pry it out (do not pull out the rectangular outer housing).

Multi-Train System

The model is equipped with a factory-installed onboard decoder for the LGB Multi-Train System. It can be used without modifications on analog or digital layouts.

When operating with the Multi-Train System, the loco features a "Back-EMF" function. This keeps the motor speed constant, even when the load of the loco changes, for example, in curves or on grades. This feature does not work at top speed.

Electronic Sound

This model comes equipped with a digital sound circuit. A volume controller is located in the smoke box behind the smoke box door (Figure 4).

Bell and Whistle: A short whistle sounds when the locomotive starts up. The departure signal sounds only after the locomotive has been stopped for a long time, but not continuously during switching operations. You can activate the bell and the whistle (long whistle) with the LGB sound activation magnets (item no. 17050) included with this model. The activation magnet can be clipped between the ties of most sections of LGB track. The magnet is molded under the embossed LGB logo. If you place the magnet on one side of the track, it activates the whistle when the locomotive passes over this spot. When the magnet is placed on the other side of the track, the bell sounds.

Programming the Decoder

Numerous functions on the decoder can be programmed individually. To do this, function values are programmed in registers (Configuration Variables - CVs). You also can program the function values with the 55015 Universal Remote Controller.

- For normal operation, it is not necessary to change the function values.
- If programming results in unsatisfactory operation, you can reprogram the factory pre-set values of most important CVs: Program register CV 55 to function value 55. To reprogram the factory pre-set function values with the 55015, select programming mode "P" (display shows "P --"). Then input 6, 5, and 5 and press the right arrow button. The display shows "P --" again: Input 5, 5, and 5 and press the right arrow button again.

SERVICE

Lubrication

Oil the axle bearings and the side rod bearings now and then with a drop of Märklin oil (item no. 7149).

Replacing Light Bulbs (E130023)

Lamp (front): Remove the number board from the lamp. Loosen the screw. Remove the lamp housing from the model. Pull the old light bulb from the socket. Insert the new light bulb. Put the model back together.

Lamp (rear): Remove the lamp housing from the model. Pull the old light bulb from the socket. Insert the new light bulb. Put the model back together.


Interior lighting: Using a pair of tweezers, pull the light bulb from the socket. Insert the new light bulb.

Replacing Traction Tires (E126174)

- Loosen the hex head bolt on the driving wheel with a traction tire.
- Remove the side rod from the driving wheel with a traction tire.
- Loosen the hex head screw on the rear drive wheel with a traction tire.
- Remove the side rods and drive rods.
- Use a small flat blade screwdriver to remove the old traction tire: Lift the old traction tire from the groove in the driving wheel.
- Carefully push the new traction tire over the wheel and into the groove.
- Make sure that the traction tire is properly seated.
- Put the model back together.

Replacing the Smoke Unit

- Remove the smokebox door.
- Remove the cover from the smoke stack (Figure 5).
- Turn the smoke stack clockwise and pull it out (Figure 6).
- Loosen the three screws inside the smokebox and remove the cover plate.
- Carefully pull the circuit board out a little.
- Remove the wires from the circuit board to the smoke unit.
- Using needle nose pliers or a pair of tweezers, pull the damaged smoke unit (smoke stack insert) from the smoke stack (Figure 7).
- Push the new smoke unit into the smoke stack.
- Plug wires for the smoke unit onto the corresponding pins on the circuit plate.
- Put the model back together.

Controllable Functions	
Lighting	
Sound effect: Whistle sequence before a grade crossing	1
Sound effect: Squealing brakes	2
Sound effect: Bell	3
Sound: Announcement	4
Glow from firebox	5
Sound effect: Blowing out cylinders	6
Smoke generator	7
Sound effect: long whistle blast	8

Register	Assignment	Range	Default	
CV 1	Address	00 – 22	3	
CV 2	Starting voltage	0 – 255	2	
CV 3	Acceleration delay	1 – 255	3	
CV 4	Braking delay	1 – 255	3	
CV 5	Max. voltage	1 – 255	255	
CV 5	After entry of CV 6 (when programming with older 55015 units) function value in the register to be programmed			
CV 6	CV number of the register to be programmed			
CV 29	Bit 0 = Direction of travel	0/1		
	Bit 1 = Number of speed levels (1/4/28)	0/2		
	Bit 2 = Mode of operation (digital / analog+digital)	0/4	4	
	Bit 5 = short / long address	0/32		
	Bit 6 = Address range 0 – 127 / 128 – 10039	0/64		
	Bit 1 = Transfer function on/off *	0/1		
CV 54	Bit 2 = Digital load monitoring on/off	0/2		
	Bit 3 = Analog load monitoring on/off	0/4	2	
	Bit 4 = Steam sounds depending on the load yes/no	0/8		
	Bit 7 = Chuff rate / wheel rotation 2/4	0/64		
	Bit 8 = Automatic braking sound on/off	0/128		
	Reset	55		
	CV 60	Back-EMF*: Max. adjustment factor	1 – 255	4
	CV 61	Back-EMF*: Adjustment frequency	0 – 255	16
CV 62	Back-EMF*: Maximum adjustment	0 – 255	255	
CV 67 – 94	programmable operating curve	1 – 255	**	

* Transfer function on: When you are operating with the 55015, the controller setting can be readjusted for 2 seconds more after the locomotive has been selected without the locomotive coming to a stop.

** The speed table is always stored with 28 values that are programmed in CV 67 to CV 94. When operating with 14 speed levels, every second value is skipped. Basic values for the programmable table: 8, 16, 24, 32, 40, 48, 56, 64, 72, 80, 88, 96, 104, 112, 120, 128, 136, 144, 152, 160, 168, 176, 184, 192, 208, 224, 240, 255.

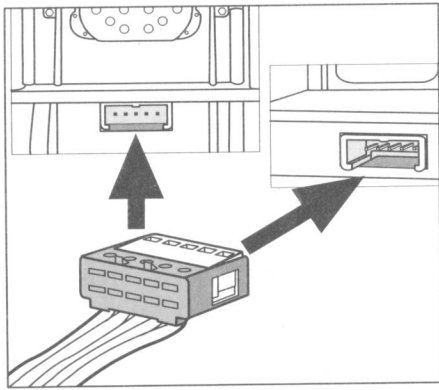


Bild 1, Verbindungskabel einstecken
 Fig. 1, Plugging in the connecting cables
 Img. 1, Brancher le câble de raccordement
 Afb. 1, Verbindingskabels insteken
 Fig. 1, Enchufar el cable de interconexión
 Figure 1, Innestare i cavetti di collegamento

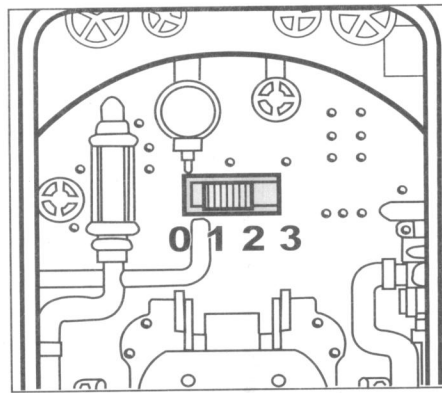


Bild 2, Betriebsartenschalter
 Fig. 2, Power control switch
 Img. 2, Modes d'exploitation
 Afb. 2, Bedrijfssoorten schakelaar
 Fig. 2, Selector de modo de funcionamiento
 Figure 2, Commutatore del tipo di esercizio

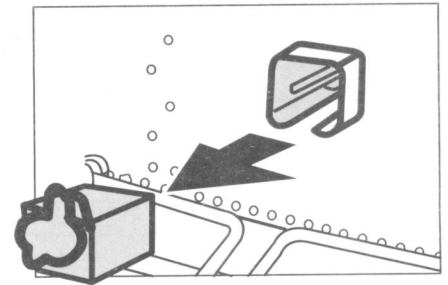


Bild 3, Mehrzweck-Steckdose
 Fig. 3, Multi-purpose socket
 Img. 3, Douille à usages multiples
 Afb. 3, Universele stekkerbus
 Fig. 3, Enchufe multiuso
 Figure 3, Presa a innesto per uso promiscuo

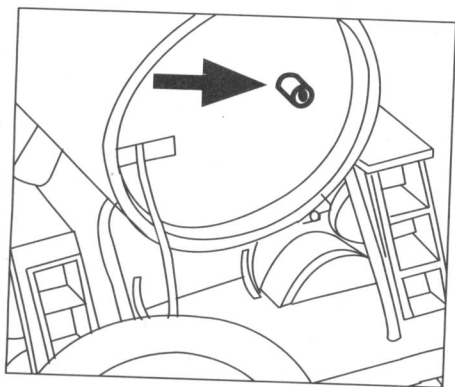


Bild 4, Lautstärkereglер
Fig. 4, Volume Control
Img. 4, Commande de réglage du volume sonore
Afb. 4, Volumeregelaar
Fig. 4, Regulador de volumen de sonido
Figure 4, regolatore di volume sonoro

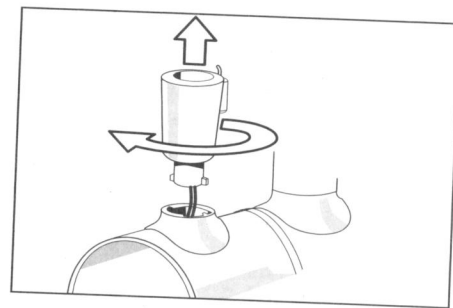
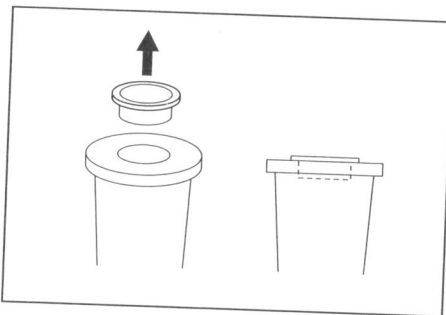
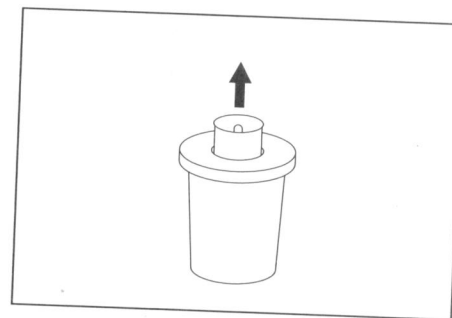
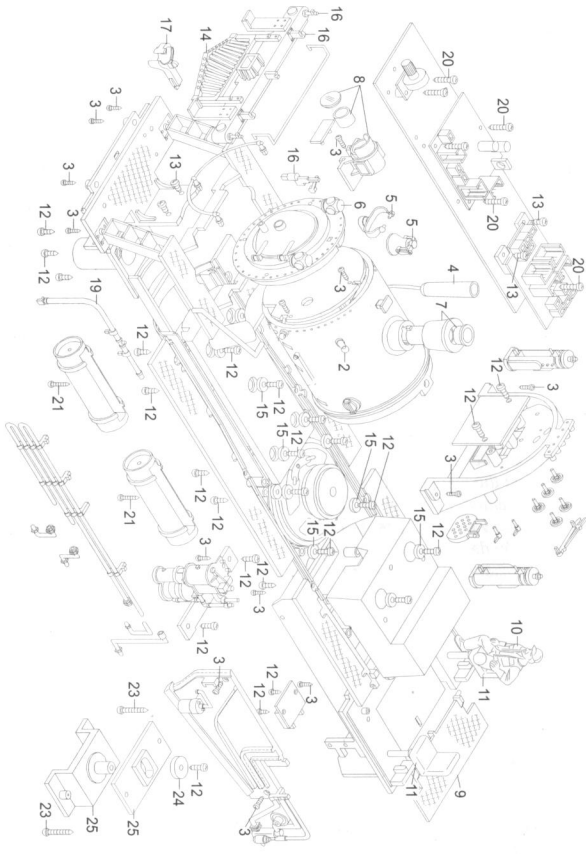
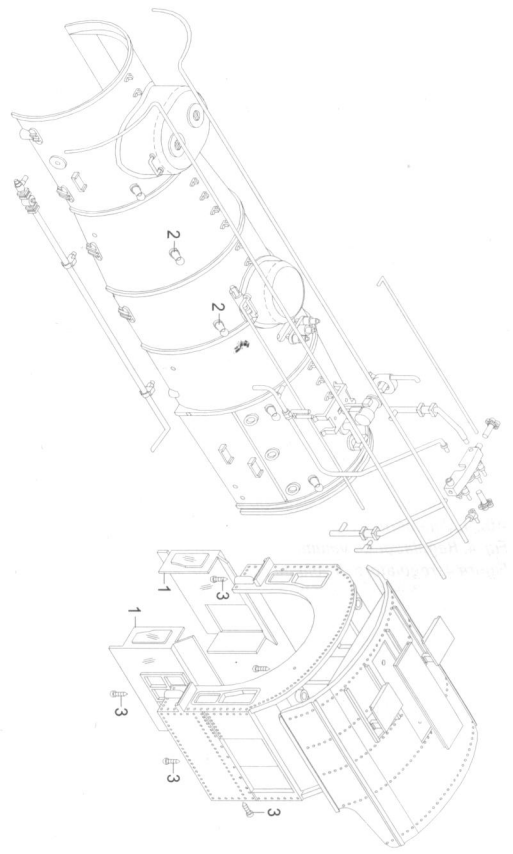


Bild 5, 6 & 7, Austausch des Dampfentwicklers
Fig. 5, 6 & 7, Replacing the smoke unit
Img. 5, 6 & 7, Remplacement du générateur de fumée
Afb. 5, 6 & 7, Vervangen van de rookgenerator
Fig. 5, 6 & 7, Sustitución del generador de vapor
Figure 5, 6 & 7, Sostituzione del generatore di vapore





Details der Darstellung
können von dem Modell
abweichen.

1	Fenster	E198 865
2	Handlaufhalter	E198 866
3	Schraube	E124 010
4	Dampfgenerator	E144 497
5	Glocke mit Halter	E165 865
6	Positionslampe	E164 881
7	Dampfschlot	E164 607
8	Stirnlampe	E198 867
9	Übergangsblech	E161 761
10	Lokführer	E164 739
11	Fahrersitz	E161 857
12	Schraube	E124 197
13	Schraube	E124 014
14	Kuhfänger	E164 612
15	Beilagscheibe	E160 094
16	Halter an Pufferbohle	E198 868
17	Kupplungshakenattrappe	E164 604
18	Lautsprecher	E129 838
19	Bremsschlauch	E164 599
20	Schraube	E124 205
21	Schraube	E124 206
22	Motor	E161 892
23	Schraube	E160 005
24	Beilagscheibe	E133 417
25	Getriebelagerplatte m. Halter	E198 869
26	Getriebedeckel vorn	E161 951
27	Achsfederpaket	E161 962
28	Bremsbacken schmal	E198 870
29	Bremsbacke mit Platte	E198 871
30	Getriebeboden vorn	E161 952
31	Motordeckel	E161 955
32	Getriebeboden hinten	E161 954
33	Lokkupplung	E198 872
34	Nachläufer	E198 873
35	Radsatz	E164 707
36	Radsatz	E164 713
37	Radsatz	E164 714
38	Radsatz	E164 725

39	Druckfeder	E164 635
40	Vorläufer	E164 705
41	Nachläuferachse	E161 888
42	Wellen, Ritzel	E198 874
43	Schleifschuh u.Kohle	E198 875
44	Draht,Feder	E198 876
45	Haftreifen	E136 259
46	Gestänge links	E198 877
47	Gestänge rechts	E198 878
48	Schraube	E129 514
49	Drehgestell	E164 849
50	Drehgestell mit Haken	E164 866
51	Räder	67 419
52	Kupplung	E198 879
53	Tenderlampe	E198 880
54	Steckteile Tenderpufferbohle	E198 881
55	Treppen	E198 882
56	Aufgleiser, Leiter	E198 883

Hinweis: Einige Teile werden nur ohne oder mit anderer Farbgebung angeboten. Teile, die hier nicht aufgeführt sind, können nur im Rahmen einer Reparatur im Märklin-Reparatur-Service repariert werden.

Bitte berücksichtigen Sie, dass die Ersatzteile zu diesem werkseitig gealterten Modell nur im nicht gealterten Zustand verfügbar sind.