

HSB 1E1 9972-73xx



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Narrow gauge Steam locomotive 99.72-73

The 1'E1'h2t-series locomotives 99.23-24 have shaped the image of the trains on the Harzquerbahn Railway and Brockenbahn Railway since the mid-50s of the 20th century.

The 700 hp strong locos, approved for up to 40km / h, were developed 1954-1956 specifically for the narrow-gauge railways in the Harz and in Thuringia. Since the 80s they are also regularly encountered on the Selketal line.

All locomotives 17 built for the German Reichsbahn are now in the Harz, and continue to form the backbone of the traction of the Harz Narrow Gauge Railway GmbH.

The running gear was specially designed for the winding railway lines of the Harz Mountains. It has gear steering racks of the Eckhardt and Krauss-Helmholtz type, which in connection with the Troffimoff pressure compensation pistons ensure that the locomotives run smoothly.

Sound Project Information

This sound project combines the strong raw power of the steam chuffs with many fine detail recordings, which are merged into the overall sound. This brings the unique and versatile sound of the prototype to your layout. When you select function 15 (Zimo Coasting), the locomotive will be in a partial load mode, and the lightweight running noises accompanied by sounds of the piston rods can be heard.

The sound project is optimized for four beats per wheel revolution. A reduction in steam exhaust strokes per revolution is not recommended at all, as this would not be true of the sound and characteristics of this locomotive.

- The sound project is based on Zimo Advanced Standard.
- Using the F15 key, the loco can be switched from full load to partial load (Zimo-Coasting)
- The decoder must have a software version 33.14 or higher.
- The older MX 60 decoders are largely not suitable for this complex sound project, as they do not have enough power to play multiple sounds at the same time. Interruptions in the sound can occur.
- Function key FA 7 switches servo 1+2 for electrical couplers during uncoupling.
- Die CVs 3, 4, 5, 57, 154 und 158 are important values for the sound project. Changing these values can cause malfunctions in the sound!
- Steam chuff generator: CV 268 Value 0 Zimo if internal / value 1 if a cam chuff generator is connected to In3.
- Users of digital systems that do not use all 28 functions, or who wish to change the functionality of the keys, can use the Zimo input mapping to map any function to any function key. Program the desired key number as your value in the CV 400+Fu number and the whole function is

mapped to another key. The standard value 0 (function number) is identical with the function key number.

Take care: It is possible to lay multiple functions on one key, and to invert functions!

<http://www.zimo.at/web2010/documents/Zimo%20Eingangsmapping.pdf>

Function	Installation	Function output	Sound effect
F0	Light on	FA 0v+0r	Electric generator
F1	Rear lights	FA 1 + 2	
F2	Can be used as you wish	FA 3 + 5	
F3	Short whistle		Whistle
F4	Long whistle		Playable whistle
F5	Bell		Playable bell
F6	Smoke generator heater on, load controlled	Fan output /FA4/FA10 – heating FA6	
F7	Cylinder valve purge		Hissing
F8	Sound on / off		
F9	Wheels screeching on curves		Sound of Wheels screeching on curves
F10	Shovelling coal	FA 8 flickers automatically	Shovelling coal
F11	Auxiliary blower switches on smoke valve	Fan on	Slight rushing noise
F12	Servo coupler opens and loco moved back and forth	FA7, Servo 1+2 for electric coupler	Uncoupling sound
F13	Coupling		Coupling sound
F14	Safety valve		Three loud steam blasts
F15	Full power / coasting		Switches between two steam chuff options
F16	Tunnel fader (muting)		Sound fades in or out
F17	Fast bell		Playable bell
F18	Public address system announcement		„Blumenpflücken verboten!“ (Do not pick the flowers!)
F19	Public address system announcement		„Türen schliessen, Zug fährt ab!“ (Doors closing, train is departing!)
F20	Filling water into tender		Water splashing
F21	Safety valve		Steam blast as long as function key is pressed
F22	Air pump fast		Building air pressure
F23	Air pump slow		Maintaining pressure
F24	Injector pump fills boiler		Injector
F25	Piston feed pump		Piston feed pump

Smoke blowers FA6 heater, fan according to the decoder type on the fan output or FA4 or FA10

Random effect	Sound	
Z1	intensive air pump	Every time the locomotive comes to a standstill
Z2	Air pump maintaining pressure	maintaining air pressure
Z3	Shovelling coal	FA8 flickers
Z4	Blower	Fan blows smoke out of stack
Z5	Steam injects water into the boiler	
Z6	Valve noise	
Z7	Releasing overpressure	
Z8	Piston feed pump	

Input	Sound	Activity
In1	Long whistle	
In2	Bell	
In3		Cam chuff trigger (CV 268 value 1)

Changed CVs

CV# 1 = ---	CV# 265 = 1
CV# 3 = 20	CV# 266 = 70
CV# 4 = 25	CV# 267 = 91
CV# 5 = 252	CV# 287 = 70
CV# 6 = 100	CV# 288 = 70
CV# 7 = ---	CV# 312 = 7
CV# 13 = 0	CV# 313 = 116
CV# 14 = 64	CV# 314 = 25
CV# 29 = ---	CV# 345 = 15
CV# 35 = 12	CV# 346 = 2
CV# 36 = 0	CV# 351 = 204
CV# 37 = 0	CV# 352 = 255
CV# 38 = 0	CV# 353 = 32
CV# 39 = 0	CV# 354 = 1
CV# 41 = 0	CV# 376 = 255
CV# 42 = 0	
CV# 43 = 0	
CV# 44 = 0	
CV# 45 = 0	
CV# 46 = 4	
CV# 57 = 87	
CV# 60 = 60	
CV# 65 = 2	
CV# 114 = 240	
CV# 115 = 77	
CV# 116 = 177	
CV# 127 = 2	
CV# 128 = 1	
CV# 132 = 72	
CV# 133 = 20	
CV# 136 = 0	
CV# 137 = 153	
CV# 138 = 204	
CV# 139 = 255	
CV# 152 = 63	
CV# 154 = 18	
CV# 159 = 48	
CV# 160 = 8	
CV# 162 = 120	
CV# 163 = 200	
CV# 167 = 160	
CV# 181 = 12	
CV# 182 = 12	
CV# 250 = 255	
CV# 251 = 255	
CV# 252 = 255	
CV# 253 = 255	
CV# 260 = 170	
CV# 261 = 29	