Davenport Small Diesel Locomotive

The prototype

The Davenport company produced these small diesel locomotives.

The locomotives have a manual gear change and where used in various industries.

Sound project information

The sound project uses recordings of an original Davenport locomotive.

Note how the starting motor struggles with the battery before it is able to start the diesel engine. The engine needs some time until all cylinders are firing.

At first the locomotive makes a subtle diesel engine humming, which rises when accelerating to ever higher speeds. At speed the vicose fan comes up to full speed and almost drowns out the sound of the engine.

CVs 3, 4, 5 and 57, 154 and 158 are very important values for the sound project. Changing of these CVs 3 and 4 will change the number of gears you hear! Lower values of CV5 will cut away the wining of the axle gearbox, and the clickety-clack sound that depends on the speed will not work. The top speed is adjusted in CV 57 and not CV 5. Please change values very carefully!

By default the function number is the same as function key. All the functions can easily be assigned to other keys, using the Zimo function key mapping.

Program the desired key number as your value in the CV 400+Fu number and the whole function is mapped to another key. Please take care, as it is possible to map multiple functions to the same key! Please read the instruction sheet http://sound-design.white-stone.ch/Information.html

Connecting a smoke generator in a Bachmann Trains G-scale model

The brown wire can be connected directly to the transistor, which supplies the smoke generator with power. Thus, the decoder will not have to deliver the power to the smoke generator.

Solder the brown decoder wire (purple showing) in the picture below to the middle solder pad on the locomotive's printed circuit board.
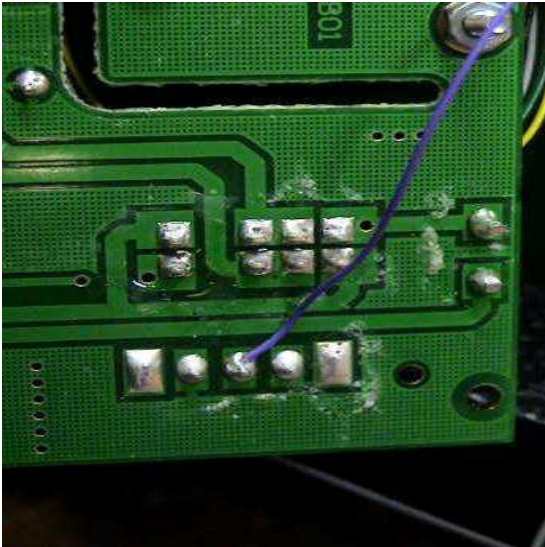
Using function key 6 you can turn the smoke on and off. The evaporator is slightly preheated in this state. When accelerating its temperature rises sharply, then when the loco is running at a steady speed the temperature is reduced and thus the smoke performance drops off a little.

By adding some smoke oil to the smoke generator and switching it on before switching on the sound, the smoke generator can be pre-heated.

During the startup process the smoke generator is briefly heated at full power which should now trigger a cloud of smoke.

Decoder types MX 640R, MX 642R and MX 645R or any later models are suitable.

The R plug connector also has a connection for a rear headlight, which is not included in the model. The taillight connection is active.

Function	Installation	Function output	Sound effect
F0	Light on	FA 0v+0r	
F1	Bell		Bell
F2	Horn l-l-s-l		Highway crossing warning
F3	Horn l		Horn sounds as long as the key is pressed
F4	Horn s		Short blast on the horn
F5	Cab light	FA 5	
F6	Smoke generator	FA 6 u 2 + fan	Typical diesel engine smoke effects
F7			
F8	Sound on / off		Sound of starter and idling
F9	Wheels screeching on curves		Sound of Wheels screeching on curves
F10	Unsuccessful engine start		Unsuccessful engine start
F11	Unsuccessful engine start with a low battery		Unsuccessful engine start with a low battery
F12	Uncoupling	Servo 1 + 2	Serve coupling opens
F13	Coupling		Coupling sound
F14			
F15			
F16	Tunnel fader (muting)		Sound fades in or out in 2.5 sec
F17			
F18			
F19			
F20			

Random effect	sound	
Z1	Hissing of air	
Z2		
Z3		
Z4		
Z5		
Z6		
Z7		
Z8		

Input	Sound	
1	Horn	
2	Bell	
3		

Changing CVs values used by the reset

CV#   3 = 22
CV#   4 = 22
CV#   5 = 252
CV# 14 = 67
CV# 29 = ---
CV# 35 = 0
CV# 36 = 0
CV# 37 = 0
CV# 38 = 0
CV# 39 = 4
CV# 40 = 136
CV# 41 = 0
CV# 42 = 0
CV# 43 = 0
CV# 44 = 0
CV# 45 = 0
CV# 46 = 0
CV# 57 = 70
CV# 61 = 97
CV# 120 = 131
CV# 128 = 80
CV# 132 = 80
CV# 133 = 1
CV# 134 = 10
CV# 136 = 24
CV# 137 = 170
CV# 138 = 220
CV# 139 = 255
CV# 154 = 2
CV# 158 = 8
CV# 266 = 140
CV# 273 = 20
CV# 275 = 230
CV# 276 = 230
CV# 283 = 245
CV# 286 = 220
CV# 311 = 0
CV# 312 = 0
CV# 313 = 116
CV# 314 = 25
CV# 315 = 0
CV# 316 = 0
CV# 317 = 0
CV# 318 = 0
CV# 319 = 0
CV# 320 = 0
CV# 321 = 0
CV# 322 = 0
CV# 323 = 0

CV# 324 = 0
CV# 325 = 0
CV# 326 = 0
CV# 327 = 0
CV# 328 = 0
CV# 329 = 0
CV# 330 = 0
CV# 331 = 0
CV# 332 = 0
CV# 333 = 0
CV# 334 = 0
CV# 335 = 0
CV# 336 = 0
CV# 337 = 0
CV# 338 = 0
CV# 351 = 0
CV# 353 = 20
CV# 374 = 15
CV# 375 = 1
CV# 376 = 255