

SD031 - Turbomotive

F#	Spot Sound Description	Mode								
F0	Headlight/Rear Lights	T								
F1	Sound Enable/Engine Start	T								
F2	Multiple Whistles (5)	M	F2a_TM_Medium_2_Tone	F2b_TM_Single_Short_Toot	F2c_TM_Medium_Fancy	F2d_TM_2_Bursts	F2e_TM_Single_Burst	UNUSED	UNUSED	UNUSED
F3	Multiple Whistles Fancy (2)	M	F3a_TM_Long	F3b_TM_Very_Long_Fancy	UNUSED	UNUSED	UNUSED	UNUSED	UNUSED	UNUSED
F4	Brake	M								
F5	Engage Reverse Turbine	T								
F6	Oil Pump	T								
F7	Coal Shovelling	T								
F8	Injector	T								
F9	Safety Valve	T								
F10	Guards Whistle	M								
F11	Coupling	M								
F12	Carriage Brake Squeal	M								
F13	Flange Squeal	T								
F14	Blower	T								
F15	Door Slamming	M								
F16	Fireman's Breakfast	T								
F17	Blow Down	T								
F18	Steam Train Passing	T								
F19	Water Fill	T								
F20	Buffer Up	M								
F21	Aux1	T								
F22	Aux2	T								
F23	Aux 3	T								
F24	Aux 4	T								
F25	Shunting Mode	M								
F26	Creep Mode	M								
F27	Dynamic Brake	M	M = Momentary Action							
F28	AFC Enable	T	T = Toggle On/Off							

Please refer to the main HM7000 Series Decoder Reference Manual for further information

Turbomotive – Reverse Turbine Operation

The Turbomotive is unique in that the main motive power unit comprises 2 multi-stage turbines. The largest one is used whilst the locomotive is operating in a forwards direction and is connected to a treble reduction gear. For reverse running, a separate, smaller turbine is used having an additional single reduction gear, making in all, a quadruple reduction gear between the turbine spindle and driving axle.

The steam from the boiler is fed to a steam chest containing six control valves which are hand operated from the cab. From the steam chest, the steam passes through pipes to groups of nozzles in the high pressure end of the turbine cylinder, each nozzle group being controlled by one of the six valves. The speed of the turbine which governs that of the locomotive, is controlled by hand from the cab by opening these valves progressively, the steam from the turbine then exhausting via the smokebox and chimney in the usual manner

Operation of the Turbomotive is as such that the reverse turbine cannot be engaged until the locomotive comes to a stand. The locking gear provided in the control box in the cab, is used to select either "forwards" or "reverse" running. For reverse running a separate, smaller turbine is engaged using a dog clutch. A disadvantage of the design was the smaller reverse turbine only had sufficient power for manoeuvring "light engine".

Please see below for the CV and it's associated values for 2 different operating modes of the reverse turbine:

CV227 = 0 (Default mode)

Locomotive will operate in both directions.

F5 enabled - plays the reverse turbine spot sound.

F5 disabled - plays the reverse turbine spot sound.

CV227 = 1 (*Realistic Mode)

Locomotive must be stationary before the F5 reverse turbine spot sound commences playback.

F5 enabled/toggle on - Locomotive will operate in a reverse direction only and at a reduced top speed.

F5 disabled/toggle off - Locomotive will operate in a forwards direction only.

Acceleration and Deceleration Settings

Please note, the following CV's also have specific values for the Turbomotive:

Any values less than the default of '25' is likely to cause the steam turbine acceleration / deceleration sound playback to operate incorrectly.

CV	Default Value	Value Range	Description
CV3	25	0-255	Acceleration
CV4	25	0-255	Deceleration