

Diesel Sounds Chart (item #1023)

Function	Sound
Double Click F0	Sound on/off
F1	Bell on/off
F2	Horn
F3	Air release
F4	Coupling A
F5	Sand release
F6	Dynamic brake on/off
F7	Reverser
F8	Air pump
F9	Brake squeal
F10	Coupler lift bar
F11	Brake release
F12	Flange squeal A
F13	Flange squeal B
F14	Coupling B
F15	Conductor
F16	Exhaust

FCC Compliance

This device complies with the part 15 of the FCC rules. Operation is subject to the following two conditions. (1) This device may not cause harmful interference and (2) This device must accept any interference received, including interference that causes undesired operation.

Service Procedure

If you experience any problems with this unit, call our customer service department at 732-225-6360 before sending it in for service.

If it should become necessary to return this unit:

1. Pack the unit carefully.
2. Include a clearly printed letter that includes your name, address, daytime phone number and a detailed description of the problem you are experiencing.
3. Include a check for US\$7.00 for shipping and handling.
4. Ship the unit via Parcel Post Insured or United Parcel Service.
5. Send unit to: Model Rectifier Corporation – Attn: Service Dept.
80 Newfield Avenue
Edison, NJ 08837-3817 U.S.A

Programming Diesel Version (item #1023)

Due to limitations in older DCC systems, some of the sound functions may not be accessible or you may be limited to the factory default CV values.

CV	Register	Description	Range	Factory Value
CV1	R1	Short address	1-127	3
CV2	R2	Start voltage	0-32	0
CV3	R3	Acceleration	0-32	0
CV4	R4	Deceleration	0-32	0
CV5	---	Max voltage	0-32	0
CV29	R5	Basic configuration	---	2
CV7	R7	Manufacturer version number	---	32
CV8	R8	Manufacturer ID	---	143
CV17	---	Long address upper byte	192-231	192
CV18	---	Long address lower byte	0-255	3
CV50	---	Horn type	0-2	1
CV51	---	Bell type	0-2	1
CV52	---	Horn volume	0-31	31
CV53	---	Bell volume	0-31	31
CV54	---	Diesel volume	0-31	31
CV55	---	Brake volume	0-31	31
CV56	---	Dynamic brake volume	0-31	31
CV57	---	Brake release volume	0-31	31
CV58	---	Air pump volume	0-31	31
CV59	---	Coupling volume	0-31	31
CV60	---	Conductor volume	0-31	31
CV61	---	Reverser	0-31	31
CV62	---	Exhaust	0-31	31
CV63	---	Sand release volume	0-31	31
CV64	---	Air release volume	0-31	31
CV105	---	User identifier number	0-255	0
CV106	---	User identifier number	0-255	0
---	R6	Page number	0-31	1
CV115	---	Brake squeal	0=off 1=on	0

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80 NEWFIELD AVENUE
EDISON NJ 08837-3817
Tel. 732-225-6360
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Synchro Sound Box

Steam Locomotives (item #1022)

Diesel Locomotives (item #1023)

Thank you for purchasing MRC's Synchro Sound Box. This synchronized stationary sound unit brings life to your DC or DCC layout without the hassle of installing on-board sound units into each of your locomotives.

With its powerful 3-watt amplifier and sound-on-sound capability, these sound units will make your model railroad more realistic and exciting.

Your Synchro Sound Box System includes:

- Steam Synchro Sound #0001022 or Diesel Synchro Sound #0001023
- 2" x 3.5" Speaker

Hook-Up

DC (Analog) Layouts – Simple 6-wire hook-up

DCC (Digital) Layouts – Simple 4-wire hook-up

Following the chart below, connect the color-coded wires to the power outputs and the speaker. For DCC operation, tape the exposed sections of the unused wires to prevent short circuits.

Wire Color	DC	DCC
Blue & Green	Speaker	Speaker
Red & Brown	Accessory Terminals AC/DC 18 Volts Max	D.C.C. Unit Track Out
Yellow & White	Variable (Track) Terminals AC/DC 18 Volts Max	Not Used

DC (analog) Operation

When the Synchro Sound Box is properly hooked-up to your layout, turning on the power pack will produce idling sounds for the unit installed (steam or diesel). Advancing your power pack throttle will set the engine sound in motion, along with the speed of your loco. Pressing any one of the sound buttons will add sound-on-sound to the engine sound. By pressing the two upper right buttons simultaneously, will have your conductor yell.

Programming Your Unit in DC (analog) Mode

There are various parameters that can be set on your unit. In the DC mode, you have a choice of following features:

Steam Unit (item #1022):

1. 2 types of whistles
2. 3 types of air pumps
3. Bell ringing rate (speed)
4. Adjustable chuff start voltage
5. Adjustable chuff rate (chuffs per revolution)

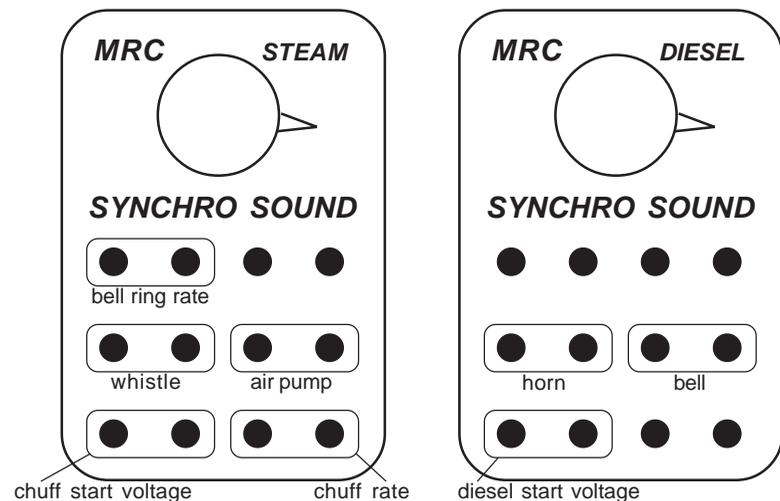
Diesel Unit (item #1023):

1. 3 types of horns
2. 3 types of bells
3. Adjustable diesel rumble start voltage

To select the different types of sounds, simultaneously press the two buttons that are circled together on the illustration for each sound. Each press will bring up different type of sound.

To change the rates, adjust your power pack's throttle knob to the desired setting and press the unit's corresponding buttons simultaneously to lock in the rate.

Some experimentation by the user is needed to correctly synchronize the unit to your locomotive.



DCC (Digital) Mode

The Synchro Sound Unit is NMRA compatible and can be used with most DCC systems.

It is programmed the same as if it were an on-board sound decoder. It must be programmed to the same address as the locomotive you want to use it with.

This sound unit supports all program methods including register, page CV, direct CV and programming on the main (OPS mode programming).

Programming Features:

- Synchronized diesel rumble or steam chuff with random sounds
- Programmable for either 2-digit (1-127) or 4-digit (1-9999) addresses
- Programmable start voltage
- Programmable acceleration rate
- Programmable deceleration rate
- Programmable 14, 28, 128 speed steps
- Programmable different horns (diesel only)
- Programmable different whistles (steam only)
- Programmable different bells (diesel only)
- Programmable different air pumps (steam only)
- 12 accessory sound functions
- Supports programming on the main
- Compatible with NMRA standards
- Complies with Part 15 of F.C.C.

Use the following charts to program your unit for your application (steam or diesel). The charts show you the registers or CVs used and typical values to enter.

Steam Sounds Chart (item #1022)

Function	Sound
Double Click F0	Sound on/off
F1	Bell on/off
F2	Whistle
F3	Air release
F4	Coupling
F5	Sand release
F6	Blower hiss
F7	Fire box door open/close
F8	Coal shoveling
F9	Brake squeal
F10	Water injector
F11	Coal feeding
F12	Flange squeal

Programming Steam Version (item #1022)

Due to limitations in older DCC systems, some of the sound functions may not be accessible or you may be limited to the factory default CV values.

CV	Register	Description	Range	Factory Value
CV1	R1	Short address	1-127	3
CV2	R2	Start voltage	0-32	0
CV3	R3	Acceleration	0-32	0
CV4	R4	Deceleration	0-32	0
CV5	---	Max voltage	0-32	0
CV29	R5	Basic configuration	---	2
CV7	R7	Manufacturer version number	---	32
CV8	R8	Manufacturer ID	---	143
CV17	---	Long address upper byte	192-231	192
CV18	---	Long address lower byte	0-255	3
CV50	---	Whistle type*	0-2	0
CV51	---	Air pump type	0-2	0
CV52	---	Sound volume	0 or 31	31
CV64	---	Chuff rate**	0-31	15
CV105	---	User identifier number	0-255	0
CV106	---	User identifier number	0-255	0
---	R6	Page number	0-31	1

* Whistle types: 0=American whistle #1, 1=American whistle #2

** To adjust chuff rate, program the start voltage (CV2) so the loco begins to move as the chuff sound starts and then program the top voltage (CV5) to the desirable top speed. Then program the chuff rate (CV64) to synchronize the locomotive.

MRC PRODIGY DCC and MRC Command 2000 users do not need to know all these register and CV numbers because the MRC DCC systems use model railroading terminology. It is easy to understand and easy to program.