



# Diesel-electric locomotive class 750.7

## Authors of the model

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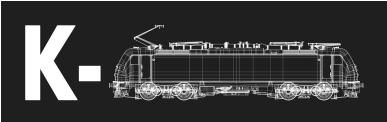
Other people who have helped with facts and materials:

*Jaroslav Kůfner, Vojtěch Raim, Tomáš Pospíšil, George VonShark, Pavel Hořínek, Jakub Šmejkal, Jacob Novák, Branislav Kysel and others...*

However the biggest Thank you belongs to my beloved girlfriend.

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## Description

Dieselelectric locomotive class 750.7 is a reconstruction from older classes 750 and 753 made by CZ Loko for České dráhy.

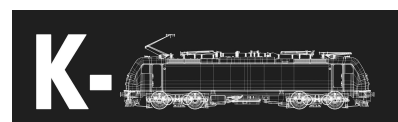
Max. speed	100 km/h
Weight	72 t
Max. power	1 550 kW
Max. tractive force	205 kN
Track gauge	1435 mm

## Concept of the model

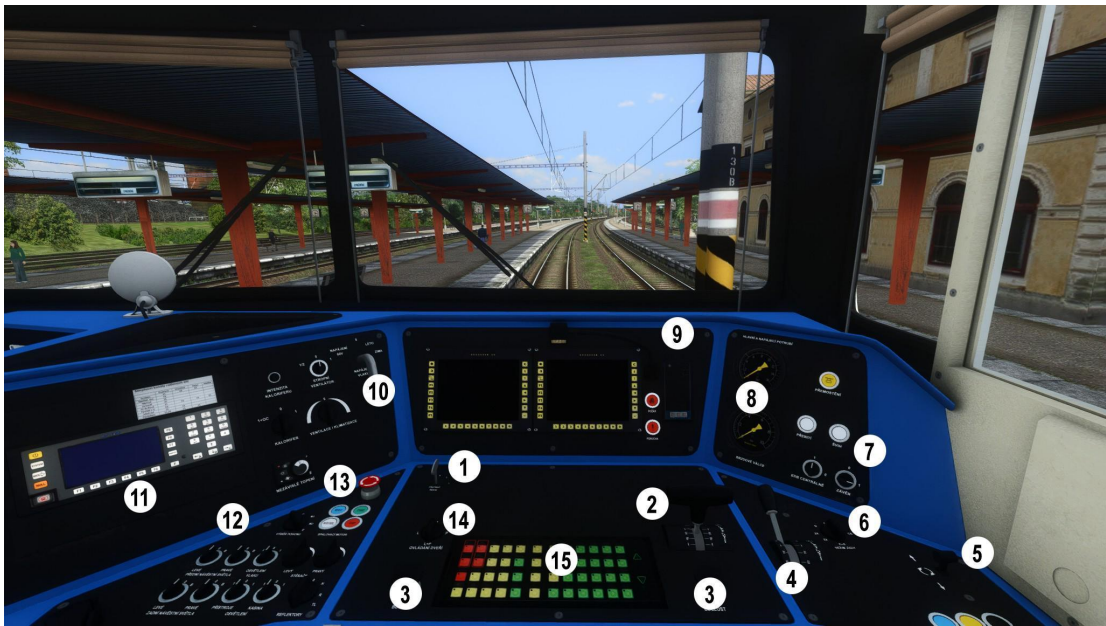
This model is designed for advanced to expert users. It is very detailed and has big hardware demands compared to the rest of available models. It is not expected to be 100% accurate so there may be some things that vary from the reality. Some things and procedures were simplified.

### Some of the model features:

- Accurate 3D models of exterior and interior
- Authentic sounds
- Authentic traction characteristics
- Simulation of heating alternator
- Czech safety system Mirel
- Radiostation Tesla VO67
- Automatic speed regulation
- Control of train interior lights
- Authentic startup and shutdown procedures
- Compatible with class 954 driving coach
- Simulation of disc and block brakes and their brake characteristics



## Control elements



1	Cab activation key	
2	Throttle and brake lever	A/D/E/Backspace
3	Vigilance buttons	Q
4	Loco brake lever	( / )
5	Reverser	w/s
6	Drive mode switch	
7	Brake cutout and EDB switches	
8	Manometers	

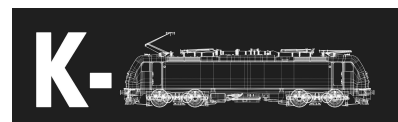
9	Mirel	
10	Train heating lever	
11	Radiostation VO67	
12	Lighting switches	
13	Engine control buttons	
14	Doors blocking switch	
15	ARR keyboard	
16	Battery breaker	
	Horn	Mezerník
	Whistle	B
	OL2	F

### Another shortcuts

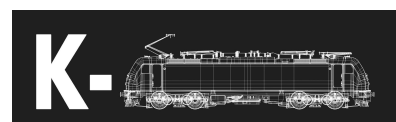
ARR speeds 0 – 90 km/h	Ctrl + 0-9
ARR speeds 100 - 120 km/h	Ctrl + Shift + 0 - 2
ARR speed +5 km/h	Y
ARR speed -5 km/h	C
Power treshold	, / .
Force treshold	Shift + , / Shift + .
Fast start	Ctrl + Shift + O
Consist info	Shift + 5
Brake mode switch	Shift + 4
Brake type switch	Ctrl + Shift + 4

### Description of control elements

- Throttle and brake lever
  - a. This lever controls power and brakes applied. It is more described later on.
- ARR keyboard



- a. The keyboard works in three modes depending to the current drive move
- b. In the „Man“ mode there is only [KPJ] button working. This button turns on train length counter
- c. Speed buttons are activated in the ARR drive mode.
- d. Buttons + and - change set speed by +/-5km/h.
- e. Buttons P+ and P- change maximum set power, F+ and F- change maximum set tractive force.
- Loco brake lever
  - a. Direct brake lever
  - b. O2 – full release
  - c. O1 – partial release
  - d. X – maintains still pressure
  - e. B1 –partial brake application
  - f. B2 – full brake application
- Engine control buttons
  - a. Start - starts motor, in case of a cold start main drive lever in position S is needed.
  - b. Stop - stops the engine
  - c. Neutrál - acknowledges engine critical failures. Pressing start button is needed after this acknowledgement.
  - d. Reset - restarts the engine control unit. Engine can not be controlled for a while after resetting.
- Engine control modes switch
  - a. P1 - controls only own engine
  - b. C - controls all engines in the consist
  - c. M1 - controls engine of the nearest slave locomotive
  - d. M2 - controls engine of all other slave locomotives
  - e. E - controls pantograph and circuit breaker of an electric slave locomotive - not implemented
- Drive mode
  - a. R – manual drive
  - b. A – ARR (Automatic speed regulation) active
  - c. CB – ATO (Automatic train operations) - not implemented



# Important procedures

## 1. Locomotive startup

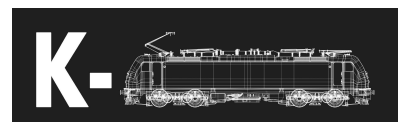
- a. Turn on batteries with lever in the electric board and wait for all display to start. Set driving key to position I and set signal lights.
- b. Start engine with start button and wait for main air reservoir to fill up.
- c. Deactivate brake cutout by "Závěr" switch and fill brake pipe with air to release brakes.
- d. Set desired direction with reverser.
- e. Release the handbrake.

## 2. Mirel

- a. Mirel manual is available at:  
<http://www.hmh.sk/files/articles/file/153VZ1%20S%20Navod%20na%20obsluhu.pdf>

## 3. Throttle and brake lever

- a. Keyboard controls
  - i. A/D keys moves the lever forwards and backwards. To get back past V position, another key combinations are used:
    1. E – BE position (electrodynamic brake)
    2. Holding D – train brake
    3. Backspace – emergency brake
- b. Manual mode
  - i. In the manual mode, this lever sets power and brake values.
  - ii. S positions increases power up to 100%.
  - iii. J position maintains positive power and lowers negative power to 0%.
  - iv. V position lowers positive power to 0% and maintains negative power.



- v. BE position lowers power to -100% and uses only electrodynamic brake. If any positive power was set before, it is immediately set to negative power by this formula:

$$PT = -PT_{last}$$

- vi. BP position lowers brake pipe pressure to 0bar.
  - vii. R position radically lowers pressure to 0bar and sets -100% power.
  - viii. It is possible to disable parking brake in this mode by putting lever to E position and pressing [-] key on the speed keyboard. To turn it on do the same with [+] button or turn on and off back again the automatic speed regulation.
- c. Automatic mode
- i. S position enables the train to apply power and releases the parking brake. If player used brakes before manually and „PREFERENCE“ is displayed on the display, this position allows the train to apply power again.
  - ii. J position is basic position here. If power usage was confirmed by S, train will use power up to set maximum to maintain the set speed.
  - iii. Train will use only negative power in the V position.
  - iv. In the BE, BP and R positions brake preference is activated. To deactivate it push the lever to S position. Braking works the same as in manual mode.

#### 4. Train heating

- a. Select heating mode by train heating lever.
- b. Set position “Nabíjení 60V” in case of driving with class 954 driving coach. Only some 750.705–750.708 can properly drive with this driving coach.

