

The powered railway vehicles 741.7 and 742.7 are designed for medium shunting and line service on national and regional railways and sidings with 1,435 mm gauge. The four-axle diesel locomotives with 18 tonnes per axle offer electric AC/DC power transmission. Locomotives are designed as hood units, with the tower engine driver's cab placed closer to the rear of the main frame buffer beam. The wheelset arrangement is B' o B' o and the maximum locomotive speed is 100 km/h. The vehicles were created through a comprehensive modernisation of the 740, 741, 742 series (and of the types derived from these).

### Benefits and advantages:

- high reliability
- low operating and maintenance costs
- extended operational life of the locomotive
- environmentally friendly operation
  - EU Stage IIIA emission limits
- modern concept and design
- application of unified solutions
- high comfort and safety for the operator
- excellent visibility
- automatic speed control (ASC)
- multiple controls
- spacious and safe platforms for shunters
- deformation elements
- electrodynamic brake (EDB)
- air dryer
- antiskid device
- optional remote radio control
- optional automatic coupling device
- optional wheel slide protection



The main frame is embedded using eight rubber-metal supports on a four-axle undercarriage consisting of twin two-axle bogies, between which the fuel tank is located. The transmission of the longitudinal forces from the bogies onto the main frame, and vice versa, is conducted through two towing pins. The drive unit is located in the front hood of the locomotive. It consists of a Caterpillar C15 diesel engine and a Siemens traction alternator. Both these machines are connected together as one unit and they are fitted into the main frame of the locomotive, using a single intermediate frame. The power transmission from the diesel engine to the driving wheelset is electric (AC/DC) and consists of a traction alternator, a rectifier and four series-parallel connected traction motors. The traction motor is specific for the wheelset to which it is fitted, using sliding suspension bearings. Additionally, most of the auxiliary drives are stored in the front hood, together with the cooling block for the diesel engine and the pneumatic block. In the rear hood are located an electrical switchboard and an electrodynamic brake block (EDB). The power regulation and the control of the entire locomotive are effected using a "MSV elektronika" control system that has the function of automatic speed control (ASC). Also installed are three compressed-air brake systems (i.e. automatic, direct actuated, additional), a mechanical manual parking brake and an electrodynamic brake (EDB). The automatic brake constitutes part of the DAKO-GP system and is operable in both the passenger mode and the cargo mode.

### Interoperability:

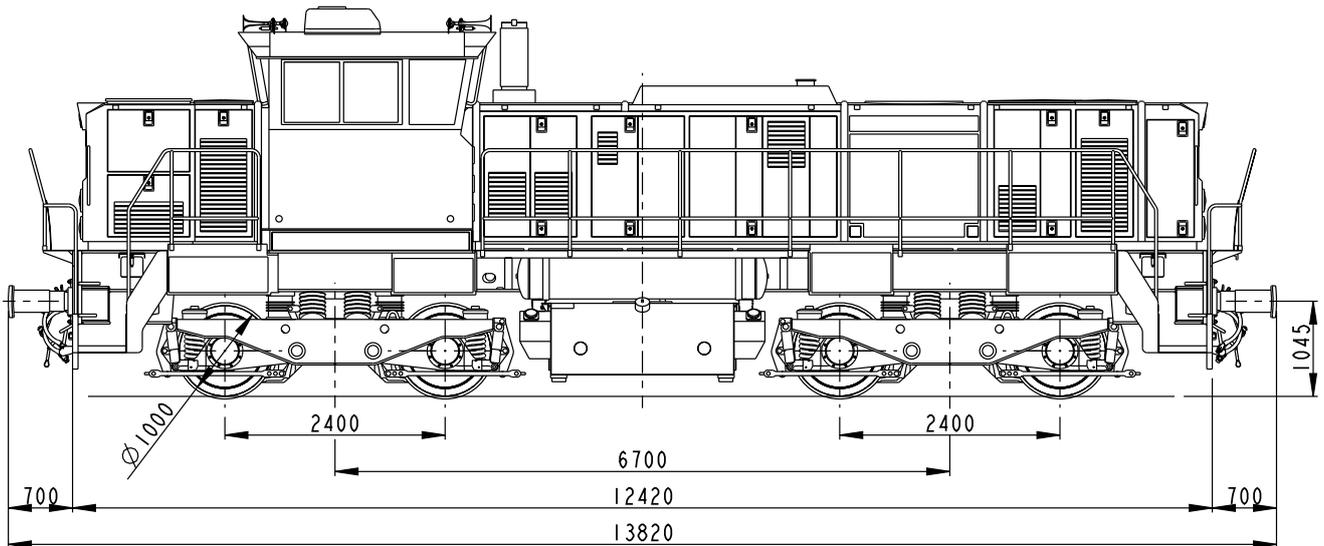


### Parameters of 741.7/742.7:

	741.7	742.7
Gauge		1,435 mm
Number of powered axles		4
Wheelset arrangement		B' o B' o
Maximum speed		100 km/h
Output transmission		AC/DC
Diesel engine		CAT 3508C
Engine output		1,000 kW
Maximum towing capacity	204 kN	189 kN
Total weight	72 tonnes	64 tonnes
Axle load	18 tonnes	16 tonnes
Compressor output		175 m <sup>3</sup> /h
Fuel tank volume		4,000 l
Climate class		-25 to +40 °C

## LOCOMOTIVE CLASS 741.7/742.7

### model drawing

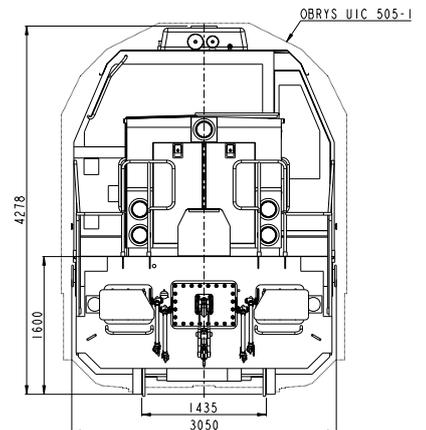


### Practical benefits of upgrading to the locomotive Classes 741.7/742.7

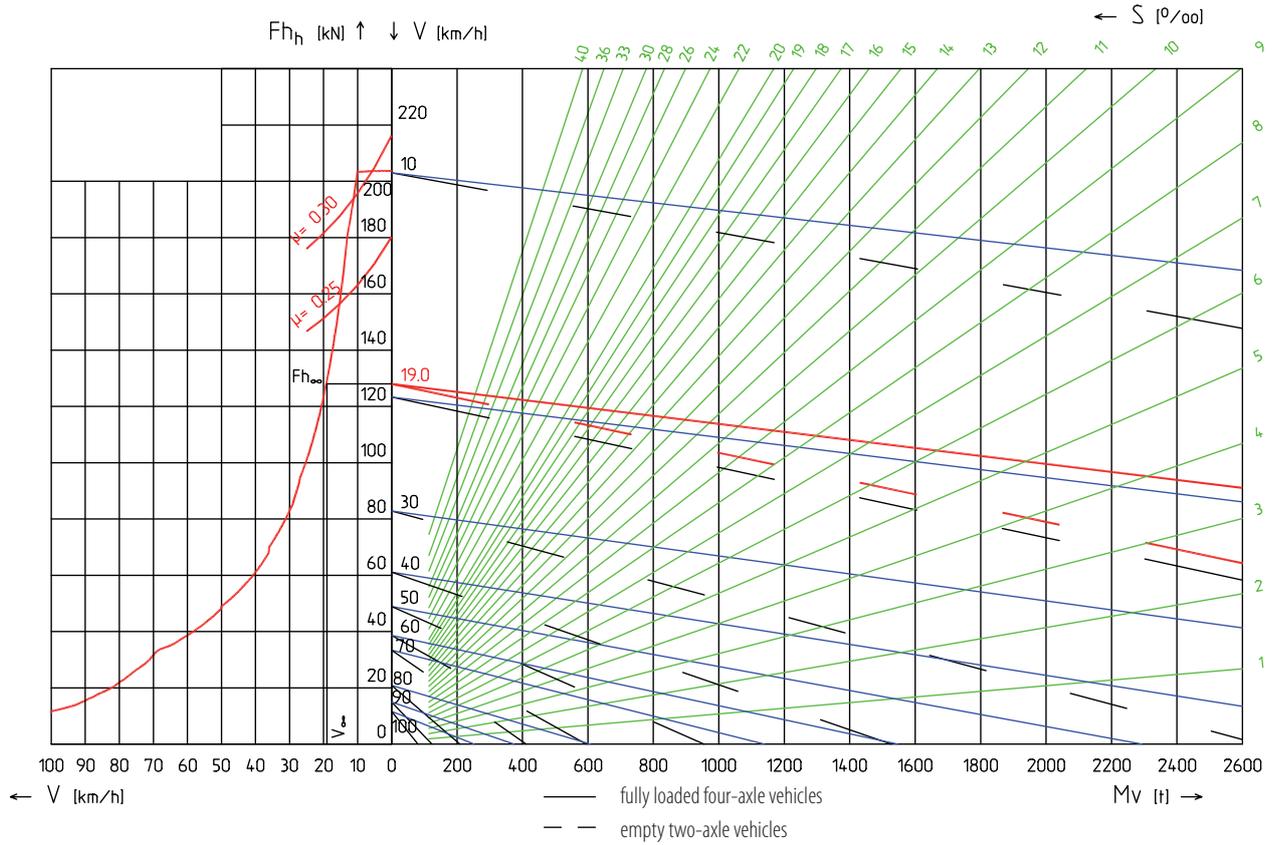
In comparison with the original vehicles the modernised locomotives 741.7/742.7 have improved operating and utility properties. In the event of the additional installation of line equipment this modernised locomotive can be put into operation for wider use. In terms of major repairs the operational life of the modernised locomotive has been extended by 25 years. At the same time this modernisation replaces the discontinued units with a current and a prospective substitute production programme for replaceable units. The modernisation of the locomotives brings with it a significant reduction of the operating and maintenance costs of the locomotive. Based on compliance with the applicable emission limits there is also a reduction in the fees for the utilisation of the infrastructure. This increase in the reliability and operability of the locomotive has been achieved by the replacement of the original aggregates and a new construction design. An additional purpose of the modernisation is increasing the safety and comfort of the operator of the locomotive.

### Maximum versatility

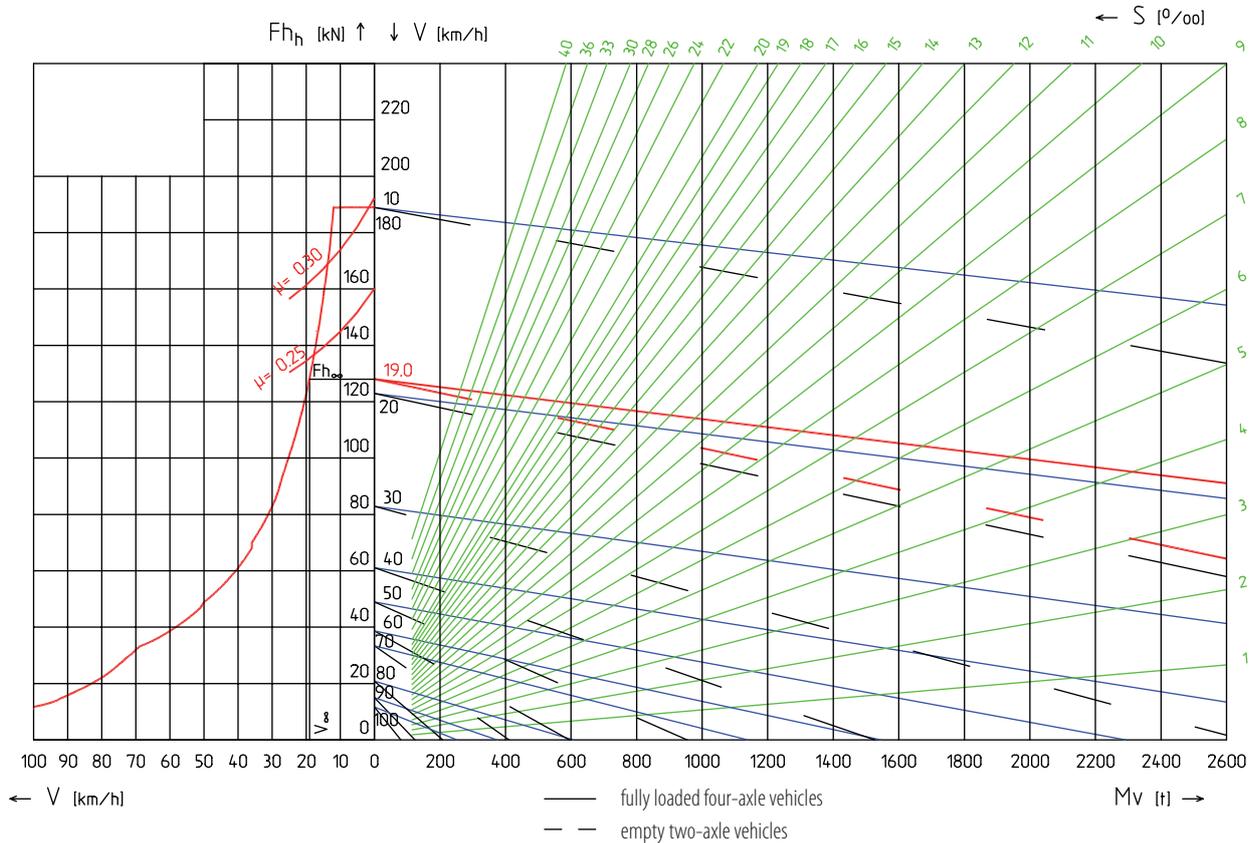
Locomotives 741.7 and 742.7 are universal locomotives utilised for heavy shunting and line service. With an output of 1000 kW and a speed of 100 km/h they are the right „partner“ for line motor locomotives of the 753.6 Class. A control system of this type can be used for the comprehensive control of additional connected locomotives by means of a multiple control system administered by one person.



load diagram 741.7



load diagram 742.7



### The primary difference between the 741.7 and 742.7 locomotives

The Class 741.7 locomotive has a higher axle load (18 tonnes) compared to the 742.7 locomotive (16 tonnes). The Class 742.7 locomotives thereby have unlimited access to all the lines of the railway network. The Class 741.7 locomotives have a higher maximum tractive force (204 kN) due to their superior adhesive parameters.

