CARBOMECH
Sp. z o.o.

Specification	**No. specifications:** I/01a
Name: The self-braking advancing device	
Type: 20-101-105	

Technical parameters

Weight	495 kg
Maximum pulling force	60 kN
Travelling speed	0,7 m/min
Minimum supply pressure	21,0 MPa
Maximum supply pressure	25,0 MPa
Working fluid (agent)	Hydraulic oil, HFA emulssion
Rail profile	I 155, I 140E, I 140V
Maximum slope angle of the monorail	27°

Figure

Front stop, type 20-105

Clamping stop

Hydraulic cylinder for stepping movements

Control unit

Hydraulic cylinder for the clamping stop

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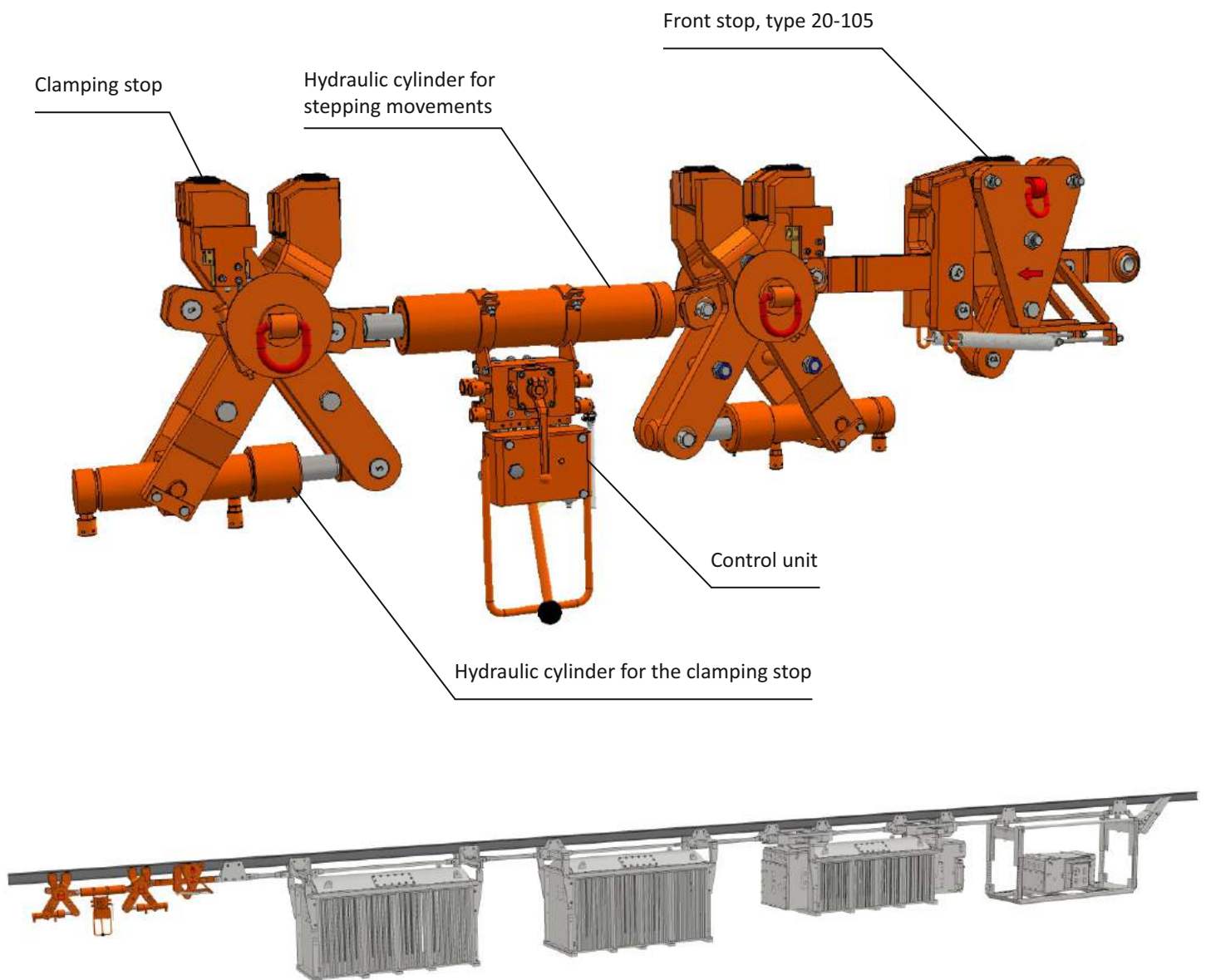
Calculation of the maximum gross weight allowed for the transportation train with load

The maximum weight of the transportation train pulled/pushed by means of the self-braking unit of the type 20-101 can be calculated from the formula below:

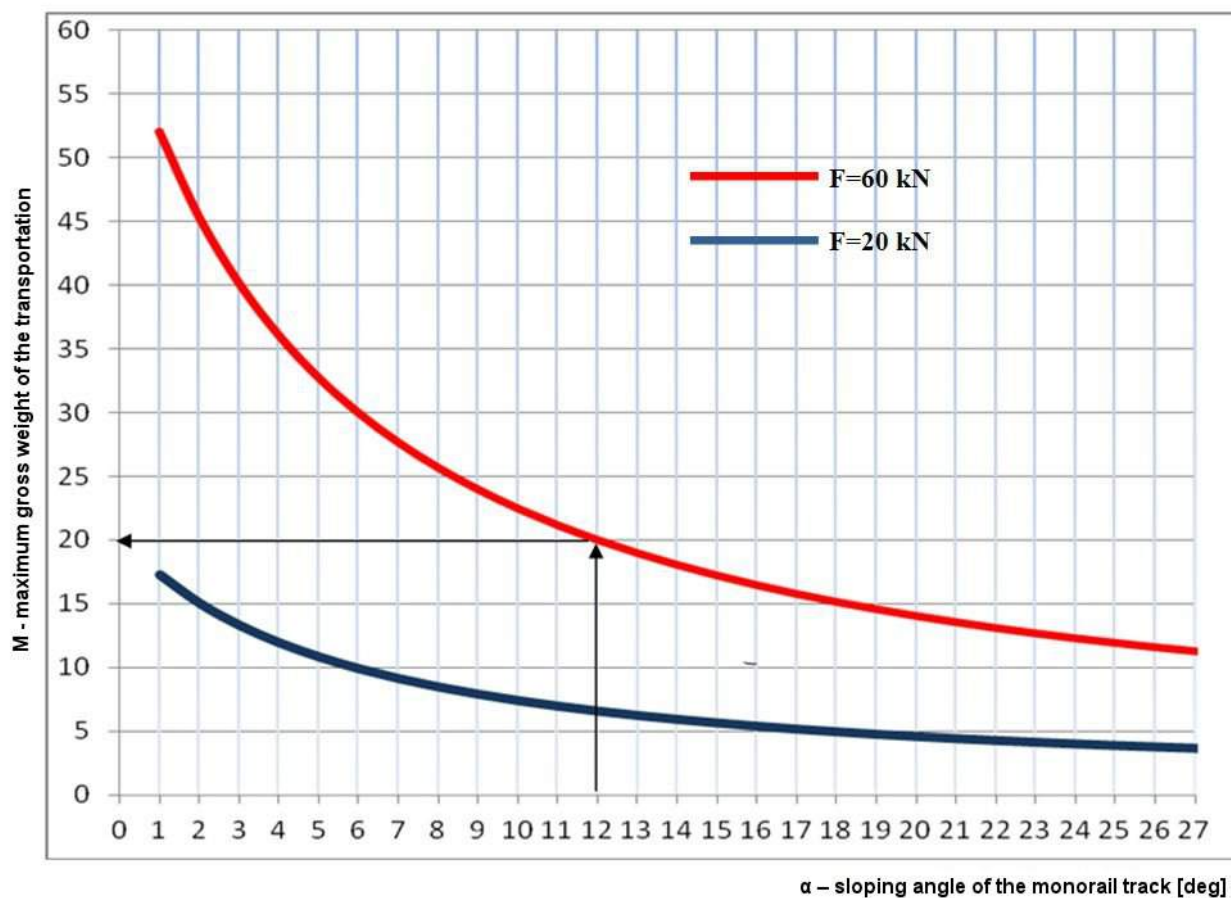$$M = \frac{F}{(\sin\alpha + \mu\cos\alpha) * g}$$

where:

F – maximum pulling/pushing force F = 60kN/20kN,

α – maximum local sloping angle of a running track,

μ – friction coefficient between the unit and the monorail surface, μ = 0.1,

g – gravitational acceleration, g = 9.81 m/s2.

The foregoing formula and the method to define the maximum weight M versus the sloping angle of the monorail track is explained on the graph below.

Purpose

The driving unit of the type 20-101-105 is a traction device designed to push or pull transportation trains on overhead monorails with the cross-section profiles of I-155, I140E or 140V. Typical applications include traction of energy trains with electric equipment, dust extraction appliances, cooling systems, etc. that are moved in pace with the coal face advance. The unit can be operated on running monorails made up of rails with the maximum longitudinal load to rail joints of 60 kN.

The driving unit are installed in underground mines, in methane and non-methane areas.

Aadditional information

- Declaration, concerning the meeting of the technical requirements, by the product.
- EC /EU Declaration of Conformity