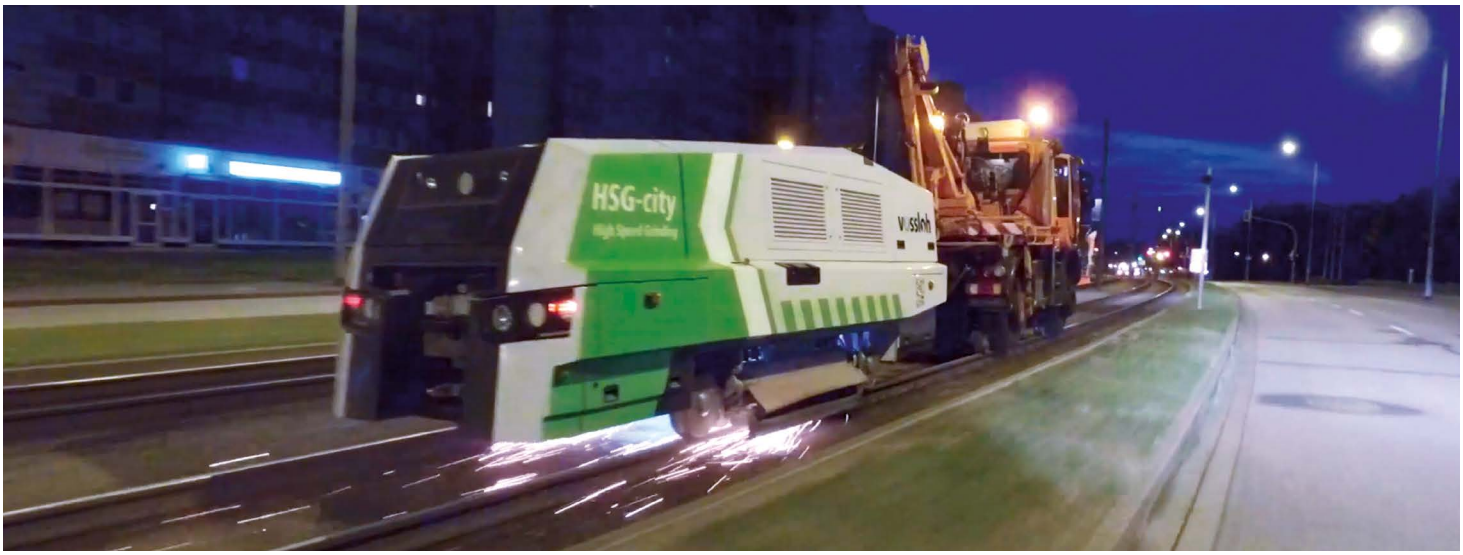
HSG-city
High Speed Grinding Machine

vossloh
enabling green mobility

Technical Datasheet

Preventive rail maintenance for light rail networks with the HSG-city

High Speed Grinding (HSG) removes minor and medium-level rail defects and is a reliable way to prevent new defects from forming. The compact HSG-city is mainly used on light rail networks.

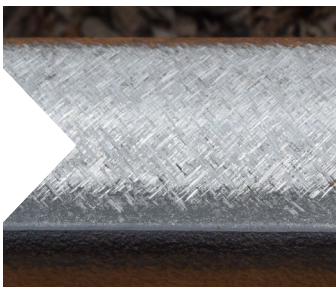


Benefits

/ Fast and safe rail defect prevention
/ Machining done in sync with the train schedule
/ No track possessions or disassembly of switching equipment
/ Up to 130 km of track machined per shift (depending on spark time)
/ Suitable for tunnels with no subsequent clean-up required
/ Rail service life extended by up to 100 %
/ Reduces rail noise by up to 10 dB (A)

Applications

/ Preventive rail machining
/ Noise reduction
/ Removal of slippery residues
/ Mill-scale removal from newly-laid rails



Video

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HSG-city
Technical Data

Main dimensions	
Length over buffers (without coupling)	5,720 mm
Height	2,112 mm
Width	2,113 mm
Number of bogies, number of axles	2
Wheelbase between bogie pins	no bogies
Distance between axles on bogie	2,600 mm
Loading gauge / structure gauge	narrow tram, e.g. Berlin's "tight" metro, e.g. London's Deep Tube

Speed	
Hauling speed as part of train set	must not be placed inside train set; end vehicle only
Hauling speed	60 km/h
Operating speed	between 8 and 60 km/h

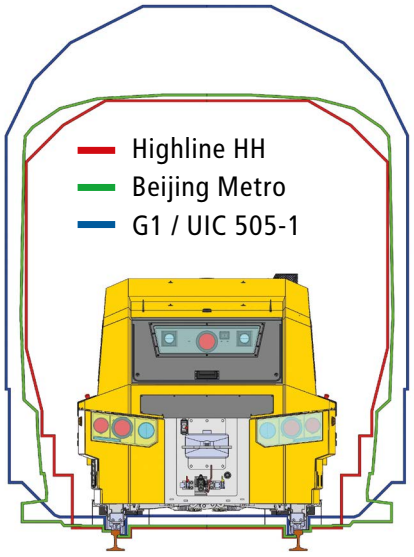
Weight	
Tare weight Max. permitted overall weight	approx. 10 t approx. 12 t
Maximum weight per meter	4.8 t
Maximum axle load	6.5 t

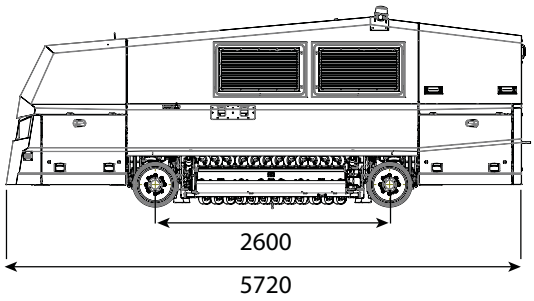
Brake system	
Brake system type	HSG-city 12: Truck and railcar, II71414/V control valve and 9710021500 tractor/trailer brake valve HSG-city 13: Railcar II71414/V control valve and dual circuit brake truck as well as manual parking brake on HSG-city 12 and HSG-city 13
Braked weight	8 t
Braked weight percentage (calculated using the braked weight and weight of the railcar)	80

On-track operability	
Shunting maneuvers not permitted (e.g. hump-shunting or loose shunting)	not permitted
Smallest traversable curve radius (transport / operating mode)	transport mode Ra 18 operating mode Ra 30
Max. uphill and downhill gradients / cant	40 ‰ uphill and downhill
Transport inside train set/ end vehicle	non-powered auxiliary vehicle according to DIN EN 14033

Weather constraints	
Ambient temperature (operating mode)	grinding mode: -10 °C to +40 °C snow: only driving is permitted, grinding work is only permitted when there is no snow

Equipment and features	
Performance data	1 grinding beam per rail, 24 grindstones per beam (12 in use, 12 as replacements)
Material removal	max. material removal per pass 0.01 mm
Applicable standards	DB Ril 824, EU Norm 13231:2-2020
Personnel / machine operators / assistants (number and qualifications)	2 personnel for operation
Non-powered auxiliary vehicle	DIN EN 14033
Dust container	4 integrated containers





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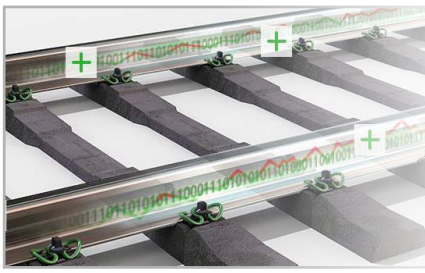
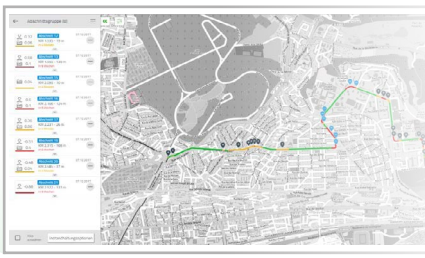
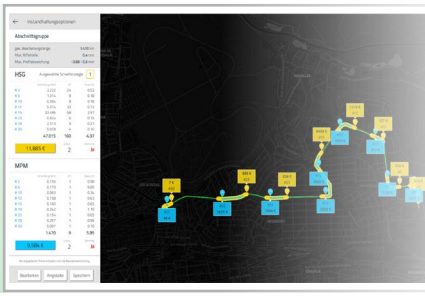
Maintenance and rail condition diagnosis with the HSG-city smart

The new generation HSG-city with sensors for measuring longitudinal and cross profiles is equipped to machine
rails differently depending on their type and location. Our Smart HSG-city combines rail care with condition diagnosis all in a single pass so that on the next pass the machine only grinds where it's needed, ensuring material removal that corresponds exactly to the condition of the rails.







Big Data transformation

The data that the Smart HSG-city records is collected in the "mapl-e" Smart Maintenance APP.
This APP displays the measured data in real time, evaluates all the maintenance options and calculates the respective machining times and costs. And in future the data will also be communicated directly to the maintenance machines themselves.

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