



Noise reduction



Rattle prevention

# Lowering noise emissions in inner-city areas

Technical Datasheet

## Operation "Quiet Rails"

In the ongoing battle against rail noise, optimizing wheel-rail contact produces the most effective results by reducing noise at its source. The load placed on the rails during normal operations causes noise-inducing rail damage, so in order to keep them quiet, tracks need to be machined regularly and correctly, which entails:

- / minimal surface roughness after machining,
- / creating a homogenous running surface to ensure that wheels produce as little noise as possible as they pass over, and
- / machining down to the deepest points of severe corrugations.

Taking these aspects into account will render further separate machining to reduce noise unnecessary.

Regular cyclic machining is the best way to effectively facilitate noise-reducing rail maintenance. For larger rail defects, a combination of HSG City and Road-Rail Milling Truck is ideal for sustainable machining.



For an all-round, corrugation-free longitudinal profile

### Benefits

- / HSG technology is recommended as effective for reducing noise and is used on BÜG line sections ("specially monitored track")
- / Effectively removes corrugations to leave an optimized longitudinal profile
- / Milling achieves exact reprofiling and removes ripples, which mitigates the noise produced by wheels rolling on the rails
- / The use of both techniques as needed maximizes the rail's service life

### Applications

- / Can be used on all types of track. Our rail and switch reprofiling machines ensure exact material removal to reduce noise emissions by up to 10 dB(A). What's more, the HSG-city can operate without track possessions or interruptions to the train schedule.



## 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	2
Number of axles	no bogies
Wheelbase between bogie pins	2,600 mm
Distance between axles on bogie	narrow tram, e.g. Berlin's "tight" metro, e.g. London's Deep Tube
Loading gauge / structure gauge	

#### 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	approx. 10 t
Max. permitted overall weight	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, I171414/V control valve and 9710021500 tractor/trailer brake valve HSG-city 13: Railcar I171414/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

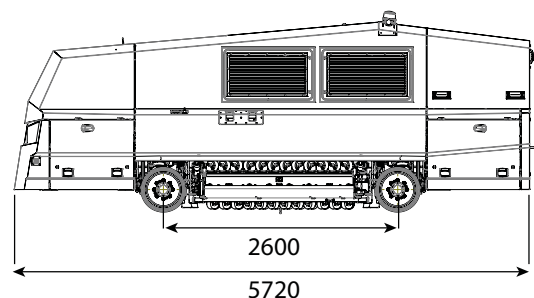
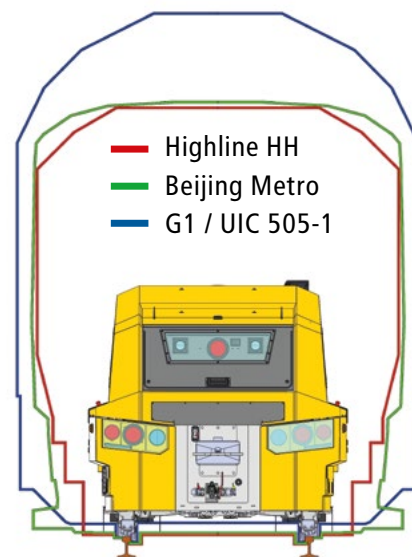
Shunting maneuvers not permitted (e.g. hump-shunting or loose shunting)	not permitted
Smallest traversable curve radius (transport / operating mode)	transport mode Ra 18 operating mode Ra 30
Max. uphill and downhill gradients / cant	40 ‰ uphill and downhill
Transport inside train set/ end vehicle	non-powered 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
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#### 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 Standard 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





## SF02 W-FS

### Technical Data

#### Main dimensions

Length over buffers (LoB)	18,320 mm
Height	3,408 mm
Width	2,490 mm
Number of bogies Number of axles	1–4
Wheelbase between bogie pins	not applicable as vehicle has only one bogie and 2 fixed axles
Vehicle gauge / structure gauge	UIC 505-1

#### Speed

Hauling speed when transported as part of train set	transport in train sets not permitted
Hauling speed	20 km/h
Max. speed (self-propelled)	rail speed: 45 km/h road speed: 80 km/h
Operating speed	0.4–0.8 km/h

#### Weight

Tare weight	45 t
Maximum axle load	12.4 t

#### Brake system

Brake system type	hydrostatically operated brake system – activated via traction lever + direct-acting brake system that works by means of an auxiliary shaft on the differential 4 disc brakes
Braked weight	40
Braked weight percentage (calculated using the braked weight and weight of the vehicle)	92
Transport setting (F/P)	not applicable – no F/P change-over

#### On-track operability

Shunting maneuvers not permitted (e.g. hump-shunting or loose shunting)	not permitted
Smallest traversable curve radius (transport mode / operating mode)	Ra 50 (transport) Ra 80 (operating)
Max. uphill and downhill gradients/cant (transport mode / operating mode)	40 ‰ uphill and downhill
Transport in train set / as end vehicle	transport in train sets or as end vehicle not permitted

#### Weather constraints

Ambient temperature (operating mode)	between -10°C and 40°C, modifications possible
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#### Equipment / features

Performance data	one milling unit on each side, integrated tangential grinding units and downstream flap-disc grinding units
Material removal	0.9 mm max. material removal per pass
Applicable standards	DB Ril 824, EU Standard 13231:2-2020
Personnel: machine operator, crew (number, qualifications)	4 personnel for operation + 2 personnel for maintenance shift
Equipment for train operation	ATC, ITC, digital train radio

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in over 100 countries

