

*Cleaning Technology  
Municipal Technology  
Waterjet Technology*

**Hako**



## ***Citymaster 1650 ZE***

***Electromobility goes multifunctional***

*All-electric multifunctional outdoor cleaning machine*



## The all-electric alternative

Your fleet of municipal vehicles is becoming more climate and environmentally friendly: thanks to reduced exhaust emissions as well as minimised noise levels and fine dust pollution.

# Low-noise. Multifunctional. All-electric.

## A big plus in terms of comfort

More driving and user comfort for the machine operator: thanks to the ergonomically designed workplace and Hako's back-friendly quick-change system.

## Full flexibility

Sweeping, wet cleaning, light winter service – all fully electric: and with efficiency benefits in comparison to classical diesel-hydraulic drives.



## CITYMASTER 1650 ZE

3.5t

### With electric drives into the future

At Hako, our aspiration of combining economic efficiency and sustainability enjoys top priority. This is why we are now taking the next logical step towards the future of Municipal Technology: with the Citymaster 1650 ZE – the new all-electric city sweeper in the 3.5-t class.



AGR quality label: awarded for the back-friendly overall machine concept comprising the chassis, quick-change system and the driver's workplace.



### Clean paths – clean air!

The new Citymaster 1650 ZE is just as efficient as a conventional diesel-powered sweeper but with significantly lower carbon dioxide emissions. Providing up to nine hours of operation without recharging the battery, this highly manoeuvrable machine with articulated steering is well equipped for long working days. And with a top speed of 40 km/h, the Citymaster 1650 ZE quickly makes its way to the next job site or the next charging pole, allowing fast, easy and safe charging of the battery.



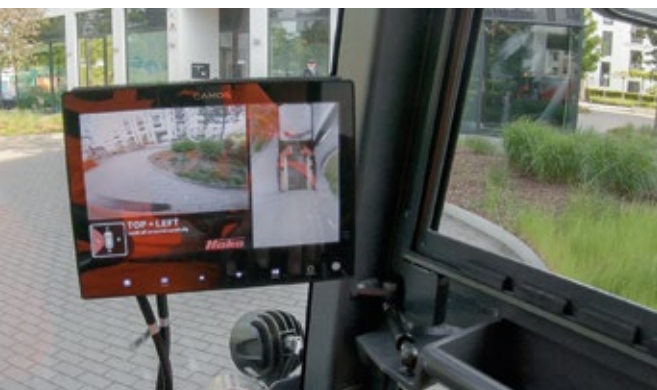


## Comfortable, safe, efficient

Equipped with clever details, the Citymaster 1650 ZE offers significantly increased driving and operating comfort: for example thanks to the cabin design with many ergonomic features – from the steering column to the driver's seat. All functions can be controlled at just the push of a button via Hako's one-button operating system integrated in the armrest. And the large display provides at-a-glance information on all relevant operating data.

### A good view ensures safe working

Sophisticated safety concepts protect both the driver and the environment. The ROPS-tested safety cabin with large windows ensures a good view at any time. The bright and energy-saving full-LED lighting system provides excellent illumination of the working area even in low-light conditions. Camera systems ensure a good all-round view and offer additional assistance when reversing or turning at junctions.



### Pleasantly quiet

Electric drive and "Silent Brooms" for low noise values – also inside the cabin.



### Increased comfort at the workplace

The ergonomic machine concept comprising an adjustable comfort seat, Hako's no-tools-needed quick-change system and a comfort suspension system (including chassis suspension at the front as well as vibration- and noise-dampening bearings) – which reliably levels out even big bumps – make the Citymaster 1650 ZE a particularly back-friendly workplace.



### Heating system and air conditioning combined in an energy-saving concept

In order to go easy on the battery capacity, the cabin can already be preheated or air-conditioned while the battery is charging. During operation, the heated windscreen and the vehicle's heating system ensure that both the ventilation power and the interior temperature in the cabin can be reduced – for a clear view, to increase the driver's sense of well-being, and to save energy. When working in the winter, an auxiliary heater saves battery life. When outdoor temperatures begin to rise, the side windows can be opened to let in fresh air. And in the summer the air conditioning ensures a pleasantly cool cabin.





# The new electric multifunctionality

The compact sweeper Citymaster 1650 ZE follows Hako's multifunctionality principle, which means that the machine also provides highly efficient all-season use as a versatile implement carrier.

In all applications, the electric drives impressively demonstrate their efficiency advantages over classical diesel-hydraulic drives – with significantly reduced energy costs.



Sweeping



Wet cleaning



Transport



Sweeping 2 brooms



Scrubbing



Tipper



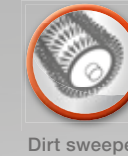
Sweeping 3 brooms



Sluicing



Lattice box



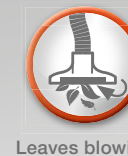
Dirt sweeper



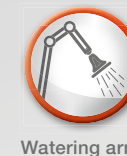
High pressure washer



Trailer



Leaves blowing



Watering arm



### Quickly ready for use

The no-tools-needed quick-change system allows fast retooling of the Citymaster 1650 ZE for a wide range of additional applications.



### Reliable results

The Citymaster 1650 ZE quickly and reliably removes coarse dirt and leaves from squares, roads and paths.



### 365 days. Countless tasks. One machine!

Each season comes with different challenges for Municipal Technology products. Hako masters each challenge with consistent multifunctionality. Thanks to the wide range of different attachments and superstructures available, you only need one machine to carry out almost any task – 365 days a year. At Hako, we call it "One for All". And our customers say: the right machine for every application.





## Technical data

Provisional technical data basic vehicle Citymaster 1650 ZE, last updated 11/2020		
<b>Engine and drive</b>	Drive / Battery system (HV)	<ul style="list-style-type: none"> <li>All-electric, multifunctional work machine with high-voltage lithium-ion traction battery</li> <li>Usable capacity 55 kWh (SOC 0–100 %) (1), system output up to 50 kW</li> <li>Machine running time up to 9 hours of operation (2)</li> <li>On-board charger up to 22 kW, charging time for total battery capacity 2.5–3 h (3)</li> <li>Charge connector IEC 62196 Type 2</li> </ul>
	Approval	<ul style="list-style-type: none"> <li>EU type approval for the basic unit as a tractor T2a (LoF) (agricultural and forestry machine)</li> </ul>
	Ground drive (HV)	<ul style="list-style-type: none"> <li>All-electric ground drive via 2 rear-wheel motors (2 x 10 kW (S1) / 40 kW maximum output (S8))</li> <li>Automatic load and slip compensation, dynamic load control</li> <li>1 accelerator pedal with F/R switch integrated in the armrest</li> </ul>
<b>Driving and working characteristics</b>	Speed and climbing ability	<ul style="list-style-type: none"> <li>Driving speed 0–40 km/h</li> <li>Work-travel speed 0–24 km/h</li> <li>Reverse 0–12 km/h</li> <li>Climbing ability 25 %</li> </ul>
	Hydraulic system (HV)	<ul style="list-style-type: none"> <li>Demand-controlled high pressure hydraulics with high-voltage drive supplying the steering system and the actuating shafts of both the vehicle and the attachments</li> <li>Hydraulic hand pump for emergency actuation (hopper)</li> </ul>
	Attachment drives (48 V)	<ul style="list-style-type: none"> <li>All-electric attachment drives with 48 V / 10 kW (2 x 5 kW or 1 x 10 kW summation circuit) system output for rotary front and rear-mounted attachments</li> <li>Quick-couplings (one-man operation) at the front and rear of the vehicle provide power supply for the attachments and the attachment control system (as part of the quick-change system)</li> </ul>
	Steering and chassis	<ul style="list-style-type: none"> <li>4-wheel chassis with maintenance-free articulated joint</li> <li>Fully hydraulic steering with 45° steering angle</li> <li>Spring-suspension chassis with coil springs and shock absorbers at the front</li> <li>Attachment quick-change system</li> </ul>
	Braking system	<ul style="list-style-type: none"> <li>Hydraulic dual-circuit disc brake acting on all 4 wheels</li> <li>Wear-free auxiliary brake (via ground drive), with adjustable recuperation</li> <li>Electro-magnetic parking brake acting on the rear axle</li> </ul>
	Tyres	<ul style="list-style-type: none"> <li>255/65 R16C (M+S universal tyres § 35 StVO, German Road Traffic Act)</li> </ul>
	Cabin	<ul style="list-style-type: none"> <li>ROPS-tested 1-person safety comfort cabin</li> <li>Electrically heated windscreen, electric heating system and air conditioning (HV)</li> <li>2 frame doors with sliding windows, completely foldable wing mirrors</li> <li>Driver seats and safety belt systems, see options</li> <li>Multi-adjustable steering column, see options</li> <li>Multifunctional display for the machine control system / current operating states</li> <li>1-hand operating system integrated in the armrest</li> </ul>
<b>Load values</b>	Empty weights	2,100 kg (implement carrier), 2,630 kg (sweeper)
	Permissible values	Total weight 3,500 kg, axle loads 1,700/2,400 kg (front/rear)
<b>Dimensions</b>	H/B/L	Basic unit: 1,970 x 1,280 x 3,830 mm (universal tyres, without trailer-towing device) Sweeper: 1,970 x 1,280 x 4,510/5,170 mm (standard tyres 2B/3B)
	Wheelbase	1,600 mm
	Track width	975–1,055 mm
	Inner turning radius	1,290 mm

HV: High Voltage; (1) Please read the notes concerning operating and warranty conditions;

(2) Depending on the respective application and operating conditions;

(3) Charging time depends on the remaining battery capacity and the capacity output of the mains terminal/ charging pole

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