

*Cleaning technology - Municipal technology*

**Hako**  
*Clean ahead*



## ***Service booklet***

### **Citymaster 650 (1491)**

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## Hako system maintenance

**Attention**

Before undertaking maintenance work, read and observe the safety instructions in the operating manual!

The Hako system maintenance specifies in single modules the special technical work to be done and the periods of time for the maintenance activities. Parts to be replaced for the individual maintenance tasks are determined and specified in spare parts kits. Hako system maintenance:

- assures the reliable readiness for use of the vehicle (preventive maintenance),
- minimises operating costs, repair costs, costs for maintenance,
- assures long life and readiness for use of the vehicle.

**Hako system maintenance once after 50 operating hours:**

Performance by an expert of an authorised Hako dealer.

**Hako system maintenance once after 250 operating hours:**

Performance by an expert of an authorised Hako dealer.

**Hako system maintenance I (every 500 operating hours):**

Performance by an expert of an authorised Hako dealer.

**Hako system maintenance II (every 1000 operating hours):**

Performance by an expert of an authorised Hako dealer.

## Vehicle data

Your vehicle is described clearly by the following data. Please always quote these data in correspondence or when making a telephone query to your authorised Hako dealer or our company.

- Vehicle type: \_\_\_\_\_
- Chassis number: \_\_\_\_\_
- Engine number: \_\_\_\_\_
- Start-up on: \_\_\_\_\_

Please enter the data applicable to your vehicle in the list above. The data are immediately available in the case of enquiries or spare parts orders.

**Your nearest authorised Hako dealer**

- Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- Telephone: \_\_\_\_\_

### Maintenance certificate

<p><b>Handover</b></p> <p>Equipment Trial run Handover to customer Instruction performed on:</p> <p>at _____ operating hours</p>	<p><b>Hako system maintenance 50 operating hours once</b> Workshop stamp</p> <p>performed on: at _____ operating hours</p>	<p><b>Hako system maintenance 250 operating hours once</b> Workshop stamp</p> <p>performed on: at _____ operating hours</p>	<p><b>Hako system maintenance I 500 operating hours</b> Workshop stamp</p> <p>performed on: at _____ operating hours</p>
<p><b>Hako system maintenance II/S 1000 operating hours</b> Workshop stamp</p> <p>performed on: at _____ operating hours</p>	<p><b>Hako system maintenance I 1500 operating hours</b> Workshop stamp</p> <p>performed on: at _____ operating hours</p>	<p><b>Hako system maintenance II/S 2000 operating hours</b> Workshop stamp</p> <p>performed on: at _____ operating hours</p>	<p><b>Hako system maintenance I 2500 operating hours</b> Workshop stamp</p> <p>performed on: at _____ operating hours</p>
<p><b>Hako system maintenance II/S 3000 operating hours</b> Workshop stamp</p> <p>performed on: at _____ operating hours</p>	<p><b>Hako system maintenance I 3500 operating hours</b> Workshop stamp</p> <p>performed on: at _____ operating hours</p>	<p><b>Hako system maintenance II/S 4000 operating hours</b> Workshop stamp</p> <p>performed on: at _____ operating hours</p>	<p><b>Hako system maintenance I 4500 operating hours</b> Workshop stamp</p> <p>performed on: at _____ operating hours</p>
<p><b>Hako system maintenance II/S 5000 operating hours</b> Workshop stamp</p> <p>performed on: at _____ operating hours</p>	<p><b>Hako system maintenance I 5500 operating hours</b> Workshop stamp</p> <p>performed on: at _____ operating hours</p>	<p><b>Hako system maintenance II/S 6000 operating hours</b> Workshop stamp</p> <p>performed on: at _____ operating hours</p>	<p><b>Hako system maintenance I 6500 operating hours</b> Workshop stamp</p> <p>performed on: at _____ operating hours</p>
<p><b>Hako system maintenance II/S 7000 operating hours</b> Workshop stamp</p> <p>performed on: at _____ operating hours</p>	<p><b>Hako system maintenance I 7500 operating hours</b> Workshop stamp</p> <p>performed on: at _____ operating hours</p>	<p><b>Hako system maintenance II/S 8000 operating hours</b> Workshop stamp</p> <p>performed on: at _____ operating hours</p>	<p><b>Hako system maintenance I 8500 operating hours</b> Workshop stamp</p> <p>performed on: at _____ operating hours</p>
<p><b>Hako system maintenance II/S 9000 operating hours</b> Workshop stamp</p> <p>performed on: at _____ operating hours</p>	<p><b>Hako system maintenance I 9500 operating hours</b> Workshop stamp</p> <p>performed on: at _____ operating hours</p>	<p><b>Hako system maintenance II/S 10000 operating hours</b> Workshop stamp</p> <p>performed on: at _____ operating hours</p>	<p><b>Hako system maintenance I 10500 operating hours</b> Workshop stamp</p> <p>performed on: at _____ operating hours</p>
<p><b>Hako system maintenance II/S 11000 operating hours</b> Workshop stamp</p> <p>performed on: at _____ operating hours</p>	<p><b>Hako system maintenance I 11500 operating hours</b> Workshop stamp</p> <p>performed on: at _____ operating hours</p>	<p><b>Hako system maintenance II/S 12000 operating hours</b> Workshop stamp</p> <p>performed on: at _____ operating hours</p>	<p><b>Hako system maintenance I 12500 operating hours</b> Workshop stamp</p> <p>performed on: at _____ operating hours</p>

## Maintenance plan

### Maintenance plan for basic vehicle

Hako system maintenance once after 50 operating hours
<b>Engine</b> <ul style="list-style-type: none"><li>• Reading and evaluating the service information of the engine control unit and removing faults if necessary</li><li>• Changing engine oil, changing engine oil filter</li><li>• Checking the load condition of particle filter, performing service regeneration if necessary</li><li>• Replacing the fuel filter</li><li>• Emptying the water trap of the fuel system</li><li>• Checking coolant hoses and radiator</li><li>• Checking coolant level in expansion tank, refilling if necessary Observe antifreeze for winter operation!</li><li>• Checking combination radiator and radiator grille for dirt, cleaning with compressed air if necessary</li><li>• Checking engine bearings for damage and cracks</li><li>• Checking generator and air conditioning system V-belt</li><li>• Checking ECO, standard and maximum speed</li><li>• Checking the exhaust system for function and tightness</li><li>• Checking the fuel pipes for function and tightness</li><li>• Checking air suction pipe for function and tightness</li></ul>
<b>Vehicle control</b> <ul style="list-style-type: none"><li>• Reading and evaluating the service information of the vehicle control system and removing faults if necessary</li><li>• Checking the software status, updating if necessary</li></ul>
<b>Electrical system</b> <ul style="list-style-type: none"><li>• Checking horn, lighting and working functions</li><li>• Checking cabling for abrasion points and damage</li><li>• Checking battery charge condition, cleaning and greasing battery poles</li></ul>
<b>Hydraulics</b> <ul style="list-style-type: none"><li>• Checking the hydraulic oil level, refilling if necessary</li><li>• Checking the lifting cylinder of the front power lift for function and tightness</li><li>• Checking hydraulic pipes for function and tightness</li><li>• Checking the hand pump for function</li></ul>
<b>Steering</b> <ul style="list-style-type: none"><li>• Checking function and ease of movement</li><li>• Checking steering cylinder for play</li></ul>
<b>Brake</b> <ul style="list-style-type: none"><li>• Checking the service brake for function</li><li>• Checking the parking brake for function</li></ul>
<b>Cab</b> <ul style="list-style-type: none"><li>• Cleaning the cab air filter</li><li>• Checking air conditioning system for function</li><li>• Checking heating for function</li><li>• Checking window washing agent</li></ul>
<b>Wheels and tyres</b> <ul style="list-style-type: none"><li>• Tightening the wheel nuts</li><li>• Checking tyres for damage and air pressure</li></ul>
<b>Lubrication service</b> <ul style="list-style-type: none"><li>• Door hinge (4x), front lifting cylinder (4x), articulated steering (4x), steering cylinder (2x), front lift left/right (2x), single-point lubrication system (option) (1x)</li></ul>

**Hako system maintenance once after 250 operating hours****Engine**

- Reading and evaluating the service information of the engine control unit and removing faults if necessary
- Checking the load condition of particle filter, performing service regeneration if necessary
- Emptying the water trap of the fuel system
- Checking coolant hoses and radiator
- Checking coolant level in expansion tank, refilling if necessary  
Observe antifreeze for winter operation!
- Checking combination radiator and radiator grille for dirt, cleaning with compressed air if necessary
- Checking engine bearings for damage and cracks
- Checking generator and air conditioning system V-belt
- Checking ECO, standard and maximum speed
- Checking the exhaust system for function and tightness
- Checking the fuel pipes for function and tightness
- Checking air suction pipe for function and tightness

**Vehicle control**

- Reading and evaluating the service information of the vehicle control system and removing faults if necessary
- Checking the software status, updating if necessary

**Electrical system**

- Checking horn, lighting and working functions
- Checking cabling for abrasion points and damage
- Checking battery charge condition, cleaning and greasing battery poles

**Hydraulics**

- Checking the hydraulic oil level, refilling if necessary
- Checking the lifting cylinder of the front power lift for function and tightness
- Checking hydraulic pipes for function and tightness
- Checking the hand pump for function

**Steering**

- Checking function and ease of movement
- Checking steering cylinder for play

**Brake**

- Checking the service brake for function
- Checking the parking brake for function

**Cab**

- Cleaning the cab air filter
- Checking air conditioning system for function
- Checking heating for function
- Checking window washing agent

**Wheels and tyres**

- Tightening the wheel nuts
- Checking tyres for damage and air pressure

**Lubrication service**

- Door hinge (4x), front lifting cylinder (4x), articulated steering (4x), steering cylinder (2x), front lift left/right (2x), single-point lubrication system (option) (1x)

<b>Hako system maintenance I (every 500 operating hours)</b>
<p><b>Engine</b></p> <ul style="list-style-type: none"> <li>• Reading and evaluating the service information of the engine control unit and removing faults if necessary</li> <li>• Changing engine oil, changing engine oil filter</li> <li>• Checking the load condition of particle filter, performing service regeneration if necessary</li> <li>• Replacing the fuel filter</li> <li>• Emptying the water trap of the fuel system</li> <li>• Replacing air filter insert</li> <li>• Checking coolant hoses and radiator</li> <li>• Checking coolant level in expansion tank, refilling if necessary Observe antifreeze for winter operation!</li> <li>• Checking combination radiator and radiator grille for dirt, cleaning with compressed air if necessary</li> <li>• Checking engine bearings for damage and cracks</li> <li>• Checking generator and air conditioning system V-belt</li> <li>• Checking ECO, standard and maximum speed</li> <li>• Checking the exhaust system for function and tightness</li> <li>• Checking the fuel pipes for function and tightness</li> <li>• Checking air suction pipe for function and tightness</li> </ul>
<p><b>Vehicle control</b></p> <ul style="list-style-type: none"> <li>• Reading and evaluating the service information of the vehicle control system and removing faults if necessary</li> <li>• Checking the software status, updating if necessary</li> </ul>
<p><b>Electrical system</b></p> <ul style="list-style-type: none"> <li>• Checking horn, lighting and working functions</li> <li>• Checking cabling for abrasion points and damage</li> <li>• Checking battery charge condition, cleaning and greasing battery poles</li> </ul>
<p><b>Hydraulics</b></p> <ul style="list-style-type: none"> <li>• Checking the hydraulic oil level, refilling if necessary</li> <li>• Checking the lifting cylinder of the front power lift for function and tightness</li> <li>• Checking hydraulic pipes for function and tightness</li> <li>• Checking the hand pump for function</li> </ul>
<p><b>Steering</b></p> <ul style="list-style-type: none"> <li>• Checking function and ease of movement</li> <li>• Checking steering cylinder for play</li> </ul>
<p><b>Brake</b></p> <ul style="list-style-type: none"> <li>• Checking the service brake for function</li> <li>• Checking the parking brake for function</li> <li>• Checking the Bowden cable of the parking brake for abrasion points</li> </ul>
<p><b>Cab</b></p> <ul style="list-style-type: none"> <li>• Cleaning the cab air filter</li> <li>• Checking air conditioning system for function</li> <li>• Checking heating for function</li> <li>• Checking window washing agent</li> </ul>
<p><b>Wheels and tyres</b></p> <ul style="list-style-type: none"> <li>• Tightening the wheel nuts</li> <li>• Checking tyres for damage and air pressure</li> </ul>
<p><b>Lubrication service</b></p> <ul style="list-style-type: none"> <li>• Door hinge (4x), front lifting cylinder (4x), articulated steering (4x), steering cylinder (2x), front lift left/right (2x), single-point lubrication system (option) (1x)</li> </ul>

**Hako system maintenance II (additionally every 1000 operating hours)**

**Engine**

- Changing the safety cartridge
- Checking and if necessary adjusting valve play with cold engine
- Changing the valve lid seal
- Changing membrane in the valve lid of the engine ventilation

**Hydraulics**

- Checking the hydraulic oil. Taking and sending in a sample.
- Changing the return filter of the hydraulic system
- Changing the venting filter of the hydraulic system
- Checking the hydraulic oil level, refilling if necessary

**Hako system maintenance (additionally every 2000 operating hours)**

**Engine**

- Replace V-belt of generator
- Replace V-belt of air conditioning system
- Changing the coolant (at the latest after two years)  
Observe antifreeze for winter operation!  
VW G13 according to TL-VW 774 or equivalent coolant. Coolant content minimum 40 % and maximum 60 %.  
Note: Even in warm countries, never drive without coolant additive G13, since the coolant additive protects the engine against corrosion and increases the boiling point of the cooling water

**Bowden cable**

- Replacing the Bowden cables of the parking brake

**Hako system maintenance (additionally every 3000 operating hours)**

**Hydraulics**

- Changing hydraulic oil



## Maintenance plan for vacuum sweeping system

Hako system maintenance once after 50 operating hours
<b>Sweeping unit</b> <ul style="list-style-type: none"><li>• Checking wear and damage</li><li>• Checking the sweeping level, adjusting if necessary</li><li>• Checking the spray nozzles, spray nozzle filter and sieve filter of the water system, cleaning if necessary</li><li>• Checking the Bowden cable of the sweeping unit for function and ease of movement</li></ul>
<b>Suction mouth</b> <ul style="list-style-type: none"><li>• Checking wear and damage</li><li>• Checking the suction mouth setting, adjusting if necessary</li><li>• Checking the suction hose for wear and seating</li><li>• Checking the seal between suction duct and dirt hopper</li><li>• Checking the fresh water nozzle and circulating water system at the suction mouth</li><li>• Checking the suction mouth flap</li><li>• Checking the Bowden cables for function and ease of movement</li></ul>
<b>Dirt hopper</b> <ul style="list-style-type: none"><li>• Checking contamination</li><li>• Checking the settling tank</li><li>• Checking the suction fan for speed and contamination</li><li>• Checking the hydraulic pipes of the suction fan motor for leaks</li><li>• Checking the impact plate of the hopper lid for wear</li><li>• Checking the seals of the hopper lid for tightness and damage</li><li>• Checking the exhaust side of the hopper lid for contamination</li><li>• Raising the dirt hopper with hand pump (optional)</li></ul>
Hako system maintenance once after 250 operating hours
<b>Sweeping unit</b> <ul style="list-style-type: none"><li>• Checking wear and damage</li><li>• Checking the sweeping level, adjusting if necessary</li><li>• Checking the spray nozzles, spray nozzle filter and sieve filter of the water system, cleaning if necessary</li><li>• Checking the Bowden cable of the sweeping unit for function and ease of movement</li></ul>
<b>Suction mouth</b> <ul style="list-style-type: none"><li>• Checking wear and damage</li><li>• Checking the suction mouth setting, adjusting if necessary</li><li>• Checking the suction hose for wear and seating</li><li>• Checking the seal between suction duct and dirt hopper</li><li>• Checking the fresh water nozzle and circulating water system at the suction mouth</li><li>• Checking the suction mouth flap</li><li>• Checking the Bowden cables for function and ease of movement</li></ul>
<b>Dirt hopper</b> <ul style="list-style-type: none"><li>• Checking contamination</li><li>• Checking the settling tank</li><li>• Checking the suction fan for speed and contamination</li><li>• Checking the bedding of the suction fan (rubber-metal buffer)</li><li>• Checking the intake sieve in the dirt hopper</li><li>• Checking the hydraulic pipes of the suction fan motor for leaks</li><li>• Checking the impact plate of the hopper lid for wear</li><li>• Checking the seals of the hopper lid for tightness and damage</li><li>• Checking the joints and bearings of the hopper flap</li><li>• Checking the exhaust side of the hopper lid for contamination</li></ul>



**Hako system maintenance (every 500 operating hours)**

**Sweeping unit**

- Checking wear and damage
- Checking the sweeping level, adjusting if necessary
- Checking the spray nozzles, spray nozzle filter and sieve filter of the water system, cleaning if necessary
- Checking the Bowden cable of the sweeping unit for function and ease of movement

**Suction mouth**

- Checking wear and damage
- Checking the suction mouth setting, adjusting if necessary
- Checking the suction hose for wear and seating
- Checking the seal between suction duct and dirt hopper
- Checking the fresh water nozzle and circulating water system at the suction mouth
- Checking the suction mouth flap
- Checking the Bowden cables for function and ease of movement

**Dirt hopper**

- Checking contamination
- Checking the settling tank
- Checking the suction fan for speed and contamination
- Checking the bedding of the suction fan (rubber-metal buffer)
- Checking the intake sieve in the dirt hopper
- Checking the hydraulic pipes of the suction fan motor for leaks
- Checking the impact plate of the hopper lid for wear
- Checking the seals of the hopper lid for tightness and damage
- Checking the joints and bearings of the hopper flap
- Checking the exhaust side of the hopper lid for contamination

**Hako system maintenance (additionally every 1000 operating hours)**

**Sweeping unit**

- Changing the Bowden cable of the sweeping unit

**Dirt hopper**

- Raising the dirt hopper with hand pump (optional)

**Hako system maintenance (additionally every 2000 operating hours)**

**Suction mouth**

- Changing the Bowden cable of the coarse material flap and of the circulating water valve

**Sweeping system maintenance plan**

**Hako system maintenance (additionally every 500 operating hours)**

**Front sweeping roller**

- Changing the gearbox oil

## Hako: environmentally friendly from the start

We want to leave a clean earth behind. Protecting resources, the environment and the climate therefore governs all our activities. Independent institutes have confirmed this.

## Everywhere and always in your vicinity

Our efficient distribution and service network guarantees short journeys and fast help.

## Purchasing, leasing, renting

We offer you a multitude of individual and attractive financing and procurement possibilities.

## We are here for you day and night

The Hako stand-by and spare parts express service guarantees the highest availability.



Cleanliness combined with safety  
Our machines meet the highest demands.



Blue Competence is an initiative of the VDMA (www.vdma.org). By using the trademark "Blue Competence", we commit ourselves to these twelve Sustainability Guidelines of the Mechanical Engineering Industry: [www.bluecompetence.net/about](http://www.bluecompetence.net/about)

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