

# Hako



## **Scrubmaster B400 R, RM, RH (7190)**

### **Service booklet**

Part number 88-10-3256 - 4480-28

Valid as from: 05.2022

## 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. Hako system maintenance:

- Assures the reliable readiness for use of the Hako cleaning machines (preventive maintenance).
- Minimises operating costs, repair costs, costs for maintenance.
- Assures long life and readiness for use of the machine.

### Hako system maintenance I (every 250 hours):

Performance by an expert of an authorised Hako workshop by reference to the machine-specific system maintenance.

### Hako system maintenance II (every 500 hours):

Performance by an expert of an authorised Hako workshop by reference to the machine-specific system maintenance.

### Hako system maintenance III/S (every 1000 hours/safety check):

Performance by an expert of an authorised Hako workshop by reference to the machine-specific system maintenance at least once a year. Performance of all legally stipulated safety-relevant tests according to the BGV specifications.

### Machine data:

Your machine is described clearly by the following data.

- Machine type: \_\_\_\_\_
- Manufacturing no.: \_\_\_\_\_
- Start-up on: \_\_\_\_\_

### Your nearest authorised Hako dealer:

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

## Maintenance certificate

<p><b>Handover</b></p> <p>Equipment Trial run Handover to customer Instruction</p> <p>performed on:</p> <p>at _____ operating hours</p>	<p><b>Hako system maintenance I</b> 250 operating hours Workshop stamp</p> <p>performed on:</p> <p>at _____ operating hours</p>	<p><b>Hako system maintenance II</b> 500 operating hours Workshop stamp</p> <p>performed on:</p> <p>at _____ operating hours</p>
<p><b>Hako system maintenance I</b> 750 operating hours Workshop stamp</p> <p>performed on:</p> <p>at _____ operating hours</p>	<p><b>Hako system maintenance S</b> 1000 operating hours Workshop stamp</p> <p>performed on:</p> <p>at _____ operating hours</p>	<p><b>Hako system maintenance I</b> 1250 operating hours Workshop stamp</p> <p>performed on:</p> <p>at _____ operating hours</p>
<p><b>Hako system maintenance II</b> 1500 operating hours Workshop stamp</p> <p>performed on:</p> <p>at _____ operating hours</p>	<p><b>Hako system maintenance I</b> 1750 operating hours Workshop stamp</p> <p>performed on:</p> <p>at _____ operating hours</p>	<p><b>Hako system maintenance S</b> 2000 operating hours Workshop stamp</p> <p>performed on:</p> <p>at _____ operating hours</p>
<p><b>Hako system maintenance I</b> 2250 operating hours Workshop stamp</p> <p>performed on:</p> <p>at _____ operating hours</p>	<p><b>Hako system maintenance II</b> 2500 operating hours Workshop stamp</p> <p>performed on:</p> <p>at _____ operating hours</p>	<p><b>Hako system maintenance I</b> 2750 operating hours Workshop stamp</p> <p>performed on:</p> <p>at _____ operating hours</p>
<p><b>Hako system maintenance S</b> 3000 operating hours Workshop stamp</p> <p>performed on:</p> <p>at _____ operating hours</p>	<p><b>Hako system maintenance I</b> 3250 operating hours Workshop stamp</p> <p>performed on:</p> <p>at _____ operating hours</p>	<p><b>Hako system maintenance II</b> 3500 operating hours Workshop stamp</p> <p>performed on:</p> <p>at _____ operating hours</p>

## Hako system maintenance

### Hako system maintenance I (every 250 hours)

#### Battery and charger

- Check the battery and the charger
- Check the cables and plug connections of the battery and the charger for ease of movement, wear and corrosion
- Check the battery acid level and acid density, refill demineralised water if necessary
- Check the setting in the battery management system (BMS) and in the charger

#### Electrical system

- Check the electrical system (lighting, fuses and relays), replace parts if necessary
- Make sure the latest software version is installed, update software if necessary
- Read out the event log memory
- Check all the power connections to the controllers, drive control, power relays, fuses, power distributors

#### Steering and brake

- Check the steering for stiffness
- Check bearing clearance of the pinion and the universal joints
- Check the steering pinion and gear rim for damage, grease if necessary.
- Check proper functioning of the power steering
- Check proper functioning of the parking brake at the front and rear (only X-AC drive)
- Check the unlocking function of the parking brake at the front and rear (only X-AC drive); check indication on the multifunction display
- Check the brake for proper functioning  
Braking deceleration when pressing the brake button must be noticeably stronger than when releasing the accelerator pedal

#### Wheels

- Front wheel: check the condition of tyres and the wheel mounting screws, re-tighten if necessary ( $170 \pm 25$  Nm).
- Rear wheels: check the condition of tyres and the wheel mounting screws, re-tighten if necessary. Standard drive: 50 Nm, X-AC drive: 72 Nm

#### Rotating brush unit and side wiper

- Check proper raising, lowering and proper functioning of the pressure reinforcement
- Check the brush decoupling and coupling function
- Check the condition and proper functioning of the driver of the rotating brushes, replace if necessary
- Check the rotating brushes for wear, replace if necessary

- Remove fluff and dirt from the air inlet grilles of the brush motors
- Check the wiper rubber of the side wiper, turn or replace if necessary

- Check the front collision protection with deflecting roller for damage

### **Flex wall tank**

- Check the cover seal of the flex wall tank, replace if necessary
- Check proper functioning of the cover support
- Check the waste water and suction system, replace worn parts if necessary
- Check the flex wall for damage
- Check the fresh water level indicator, calibrate if necessary
- Check leak tightness and proper functioning of the drain hoses (fresh and waste water), replace if necessary
- Check the closure and seal at the drain hose, replace if necessary
- Remove coarse dirt and clean the filter sieve

- Check the fresh water supply, replace worn parts if necessary
- Check the cover seal of the fresh water inlet
- Check the sieve insert and cover seal of the fresh water filter for damage, replace if necessary

### **Squeegee and vacuum motors**

- Check the sealing and slot strip of the squeegee, turn or replace if necessary
- Check the folding function of the squeegee
- Check the deflecting bracket/deflecting rollers at the squeegee, replace if necessary
- Check the squeegee setting, reset if necessary
- Check the supporting rollers of the squeegee for ease of movement and wear, replace if necessary
- Check proper functioning of the vacuum motors
- Check the vacuum motor drainage valve, clean if necessary

### **Pre-sweep suction unit**

- Check the high dump function (only B400 RH)
- Check the hydraulic oil level, top up oil if necessary (only B400 RH).  
For oil, see annex *Engine/Vehicle fluids*
- Check the V-belt drive, replace if necessary
- Check the sweeping roller for wear, re-adjust or replace if necessary
- Check the sweeping roller setting, reset if necessary
- Check the carbon brushes of the sweeping roller motor
- Check the agitating function and suction of the filter system
- Clean the plate filter
- Check the sealing strips in the broom compartment for correct distance setting, wear and damage, adjust or replace if necessary

## Hako system maintenance

- Check the side broom for wear, replace if necessary
- Check the side broom setting, reset if necessary
- Check proper functioning of the coarse dirt flap lock (only B400 RH)

### High-pressure cleaner

One-off oil change. For oil, see annex *Engine/Vehicle fluids*

### Spray the following locations on the machine with penetrating lubricant:

#### Caution! Do not spray DU dry or plain bearing bushes!

- Hinges at the squeegee lift system
  - Hinges at the side deflectors
  - Hinge and joint locations of the brush lift system
  - Grease the high dump chain (only B400 RH)
  - Lubricate the grease nipple on the lifting cylinder (only B400 RH)
- Check the optical condition of the machine (corrosion and labels)
- Trial run and function test

## Hako system maintenance II:

### Every 500 hours

- All maintenance work according to Hako system maintenance I
- Check the side broom system for ease of movement and damage, repair if necessary
- Check the brush unit lift system for ease of movement and damage, repair if necessary

### Pre-sweep suction unit

- Check the ropes of the pre-sweep suction unit lift system
- Change the plate filter
- Trial run and function test

## Hako system maintenance III/S (safety check):

### Every 1000 hours, at least once a year

- All maintenance work according to Hako system maintenance II

Check the following electrical output:

- Drive motor
- Brush motors
- Suction turbines
- Pre-sweep suction unit with side broom

- Replace the backup battery of the electrical control and set a real-time clock

- Remove coal dust from the brush motors, the vacuum motors and the sweeping roller motor and check the carbon brushes for ease of movement and wear, replace carbon brushes if necessary

#### Standard drive rear axle

- Check the wheel bearing clearance of the rear wheels (non-driven axle), replace wheel bearing if necessary

#### Dosing system (optional)

- Replace the dosing pump hose
- Replace the dosing pump rotor after three years

#### High-pressure cleaner (optional)

Oil change. For oil, see annex *Engine/Vehicle fluids*

#### Pre-sweep suction unit

- Replace the ropes of the pre-sweep suction unit lift system
  - Change the V-belt in the pre-sweep suction unit
- Perform a trial run and function test

### Every 2000 hours

- Remove coal dust from the brush motors, the vacuum motors and the sweeping roller motor and check the carbon brushes for ease of movement and wear, replace carbon brushes

#### Pre-sweep suction unit

- Replace the side broom motor
  - Replace the motor of the dust extraction system
- Perform a trial run and function test

## Engine/Vehicle fluids

### Oil in the machine

#### High-pressure cleaner:

SAE 15-W 40 mineral oil. Filling volume: 0.154 kg

#### High dump hydraulic unit (only B400 RH):

Hydraulic oil HVLP 46 zinc-free. Filling volume: 0.5 l



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