

## WAREWASHING



# Dishwashers/Glasswashers ECOMAX PLUS

G403  
G503  
F503

**Installation and  
Operation Instructions**

EN

**Publisher**

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**Product disclaimer**

Installations and repairs carried out by non-authorized technicians or using non-genuine spare parts, and any technical alterations to the machine not approved by the manufacturer will invalidate the manufacturer's warranty and product liability.

HOBART reserves the right to make changes or improvements to its products without prior notice.

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## 1 Notes on the documentation

### 1.1 Application

This document contains the most important information for the installation and commissioning of the machine by qualified personnel, as well as the information required for day-to-day operation by the operator.

- ▶ Keep the operating instructions and all referenced documents in a safe and accessible place.
- ▶ If you sell the machine, pass on the installation and operating instructions.

### 1.2 Layout of the documentation

Referenced documents are all instructions that describe the installation, operation, maintenance and repair of the device, as well as additional instructions for all accessories used.

#### For the operator:

- Operating instructions

#### For the specialised tradesman:

- Installation instructions
- Circuit diagram
- Spare Parts Catalogue

### 1.3 Representation convention

#### 1.3.1 Symbols used

Symbol	Meaning
	Warning of hazardous electrical voltage
	Beware of explosion
	Warning of risk of crushing
	Beware of hazardous substances

**Notes on the documentation**

Symbol	Meaning
	Beware of hand injuries
	Beware of slipping
	Beware of hazard area
	Useful additional information and tips

**1.3.2 Representation in the text**

Representation	Meaning
<b>NOTE</b>	Important information on machine operation, not a warning notice
►	Step
↳	Outcome/result
—	Listing 1st level
•	Listing 2nd level

## 2 Safety instructions and regulations

### 2.1 Safety instructions and warning notices

- ▶ During machine operation, observe the general safety instructions and warning notices that precede each action.

#### 2.1.1 Hazard levels

The hazard level is part of the safety instructions and is denoted by the signal word. Potential consequences are differentiated by the choice of signal word.

<b>DANGER</b>	imminent danger: <b>results in serious</b> physical injury or death
<b>WARNING</b>	potentially hazardous situation: <b>can</b> cause <b>serious</b> physical injury or death
<b>CAUTION</b>	potentially hazardous situation: <b>can</b> cause <b>minor</b> physical injury
<b>NOTICE</b>	potentially harmful situation: <b>can</b> cause <b>damage</b> to the product or other objects

#### 2.1.2 Layout of warning notices

Warning notices are depicted with warning symbols and signal word in the corresponding safety colours.



##### **CAUTION**

###### Nature and source of the hazard

Explanation on the nature and source of the hazard

- ▶ Measures for averting the hazard
- ▶ additional measures for averting the hazard, where applicable

### 2.2 Basic safety instructions

#### 2.2.1 Product safety

The machine conforms to state-of-the-art technology and the recognised safety regulations. Nonetheless, hazards may occur.

Operate the machine only if it is in perfect working order, and in

**Safety instructions and regulations**

compliance with the operating instructions.

All modifications and alterations to the product are reserved for persons authorised by HOBART. Configuration is password-protected.

### **2.2.2 Personnel qualification**

- ▶ Observe the regulations on occupational health and safety.
- ▶ Carefully read through the operating instructions before use.

<b>Activity</b>	<b>User group</b>	<b>Qualifikation / Ausbildung</b>
<b>Installation</b>	Qualified personnel	Hobart Service or an electrically qualified person trained by Hobart or a competent person acc. to the German technical regulations for occupational safety (TRBS 1203) trained by Hobart.
	Trainees	Only under professional supervision and scrutiny.
<b>Commissioning</b>	Qualified personnel	Hobart Service or an electrically qualified person trained by Hobart or a competent person acc. to the German technical regulations for occupational safety (TRBS 1203) trained by Hobart.
	Trainees	Only under professional supervision and scrutiny.
<b>Work on electrical equipment</b>	Qualified personnel	Hobart Service or an electrically qualified person trained by Hobart or a competent person acc. to the German technical regulations for occupational safety (TRBS 1203) trained by Hobart.
<b>Work on refrigeration systems</b>	Qualified personnel	Certified competent person, category 1 according to: - Ordinance (EU) No. 517/2014 Article 10 - Implementing regulation (EU) 2015/2067 - German Chemicals Climate Protection Ordinance §5
<b>Operation</b>	Operating personnel and persons over the age of 14	Only under supervision and after instruction by the operator on the basis of the operating instructions, instructions on dangers.
	Disabled persons	The suitability must be assessed by the operator on an individual basis.
	Persons up to the age of 13	Persons up to the age of 13 are not suited for machine operation.
<b>Maintenance, repair</b>	Qualified personnel	Hobart Service or an electrically qualified person trained by Hobart or a competent person acc. to the German technical regulations for occupational safety (TRBS 1203) trained by Hobart.
	Trainees	Only under professional supervision and scrutiny.

### **2.2.3 Product-specific hazards**

**Avoid body parts being crushed or knocked:**

- ▶ Observe the instructions on the packaging for storage, lifting or transporting.

**Avoid risk of explosion:**

- ▶ Do not install machine in a potentially-explosive location.

***Avoid electric shock:***

- ▶ Do not allow water to flow under live components.
  - Make sure the machine is correctly stored (see frost damage section [2.3](#)).
  - Make sure that the machine does not overflow when being filled.
- ▶ Do not damage the connection cable while unpacking.
- ▶ Have the machine connected to the power supply by qualified personnel.
- ▶ Have additional feed tanks mounted by qualified personnel.

***Avoid fire risk:***

- ▶ Do not allow water to flow under live components.
  - Make sure the machine is correctly stored (see frost damage section [2.3](#)).
  - Make sure that the machine does not overflow when being filled.
- ▶ Have the machine connected to the power supply by qualified personnel.
- ▶ Have all modifications to the machine carried out by qualified personnel.

***Avoid chemical burns, sensitisation of the skin, poisoning:***

- ▶ Wear protective equipment (gloves, safety goggles, protective clothing) when handling chemicals.
- ▶ Use only suitable chemicals. Observe the manufacturer's data.
- ▶ Have chemical sensor system set by authorised trained service technicians.
- ▶ Do not open the machine during operation, wait for the program to finish.
- ▶ Disconnect the machine from the mains prior to cleaning.
- ▶ For cleaning, wear protective equipment (gloves, safety goggles, protective clothing) when touching parts contaminated by detergent.

***Avoid burns, scalds (to the hands):***

- ▶ Do not open the machine during operation or the evaporation phase, wait for the program to finish.
- ▶ Disconnect the machine from the mains prior to cleaning.
- ▶ For cleaning, wear protective equipment (gloves, safety goggles, protective clothing) when touching parts contaminated by washing solution.

***Avoid slipping:***

- ✓ Moisture can build up on the machine floor.
- ▶ Provide a floor covering that is guaranteed to be non-slip in case of moisture.

***Residues on the washware, hygiene regulations not main-***

## Safety instructions and regulations

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tained.

- ▶ Hygiene regulations must be maintained and/or demonstrated in accordance with the national provisions.

### 2.2.4 Additional hazards

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Potential hazards caused by operating resources to be used can be found in the enclosed safety datasheets. Workplaces must be signed accordingly.

## 2.3 Property damage

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### **Avoid frost damage:**

- ✓ Temperatures below 0°C during transport/storage cause function impairments.
- ▶ Prior to installation, store the machine at room temperature (min. 15°C) for 24h.

### **Avoid water damage:**

- ▶ Configuration is password-protected and permitted only by certified service technicians. Observe documentation.
- ▶ Do not operate the machine unsupervised.
- ▶ Close site shut-off valves at end of operation.

### **Avoid environmental hazards:**

- ▶ Dispose of the machine correctly and in accordance with environmental regulations (see section [11](#))

## **3 Product description**

### **3.1 Intended purpose**

The machine is an item of technical equipment intended solely for commercial dishwashing.

The machine is designed solely for cleaning crockery (porcelain, glass, ceramic, temperature-resistant plastics or stainless steel or similar) from the food industry.

Not for washing:

- Containers that do not come into contact with foodstuffs, such as ashtrays, candlesticks, electric appliances etc.
- Animals or textiles
- Foodstuffs intended for further consumption

### **3.2 Designation**

The rating plate is located at the front of the machine and contains the following information: model, serial number, date of manufacture, country of manufacture, voltage, connection rating, design-state number and CE mark.

### **3.3 Technical specifications**

Dimensionen (H x B x T)	825 x 600 x 600 mm (G403: 705 x 460 x 590)
Water consumption per rinse cycle	2,8 l (G403: 2,5 l)
Line flow pressure	0.5 – 10 bar min. 0.8 bar with integrated softener
Cold or hot water connection	max. 60°C
Voltage	see rating plate
Total connected load	
Fuse protection	
Tank capacity	10,6 l (G403: 8 l)
Rack height	425 mm (G403: 315 mm)
Noise emission (workplace-related emission value)	62 dB (A) for undercounter machine (G403: 58 dB (A))
Weight	60 kg (G403: 50 kg)

### 3.4 Conformity



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#### EG-Konformitätserklärung

Declaration of Conformity / Déclaration de Conformité / Declaración de Conformidad / Dichiarazione di conformità / Conformiteitsverklaring / Deklaracija zgodnosti / Декларация о соответствии / Uygunluk beyanı / Deklaracija o sukladnosti / Izjava o skladnosti / Declaração de Conformidade / Prohlášení o shodě

**Hersteller / Dokumentationsbevollmächtigter:**

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Fabricant / autorisé à constituer le dossier technique:  
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Fabrikant / Geautoriseerd om de technische documentatie samen te stellen:  
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Proizvođač / ovlašten za sastavljanje tehničkog spisa:  
Proizvajalec / pooblaščeni za dokumentacijo:  
Fabricante / Responsável pela documentação:  
Výrobce / osoba zpříjemněná sestavením dokumentace:

HOBART GMBH / Verena Wiedenhöfer  
Robert-Bosch-Straße 17  
77656 Offenburg / Germany

**Maschine:**

Geschirrspülmaschine  
Dishwasher  
Machine à laver la vaisselle  
Lavavajillas  
Lavastoviglie  
Vaatwasmachine  
Zmywarka do naczyń  
Посудомоечная машина  
Tezgahaltı bulşak makineleri  
Perilica posuda  
Stroj za pomicivanje posode  
Máquina lava-loça  
Stroj:  
Máquina:  
Ztroj:

**Marke:**

ecamax by HOBART  
Trade mark / Marque / Marca  
comercial / Marchio / Merk /  
Marka / Mapria / Marca /  
Značka

**Type:**

Ecomax plus G503 - Serie  
Ecomax plus F503 - Serie

Design State: FXB-12-03

Serial No.: 86 66 XXXXX

**Hiermit bestätigen wir, dass die genannte Maschine entsprechend den nachfolgend aufgeführten Normen gefertigt und geprüft worden ist.**

Herewith our confirmation that the named machine has been manufactured and tested in accordance with the following standards.

Par la présente, nous déclarons que la machine citée ci-dessus a été fabriquée et testée en conformité aux normes.

Por la siguiente confirmamos que la máquina mencionada ha sido fabricada conforme a las siguientes normas.

Con la presente confermiamo che la macchina indicata è stata costruita in conformità alle norme di seguito riportate.

Hierbij bevestigen wij dat de genoemde machine is gefabriceerd en getest volgens de hiervolgende voorwaarden.

Niniejszym deklarujemy, że wyprodukowany produkt spełnia wymogi następujących norm.

Настоящим мы подтверждаем, что указанная машина изготовлена в соответствии с приведенными ниже нормами.

İşbu belge ile belirtilen makinenin aşağıda listelenen normalar doğrultusunda hazırlanlığını beyan ederiz.

Ovime potvrđujemo da je gore navedeni stroj proizveden i testiran u skladu sa spodnjim sljedećim standardima.

S tem izjavljamo, da je naveden stroj izdelan in preizkušen v skladu s spodnjimi navedenimi standardi.

Com a presente declaramos que a máquina supracitada foi construída e inspecionada segundo as normas referidas a seguir.

Timo potvrzuje, že uvedený stroj byl vyroben a zkонтrolovan podle následujících norem.

DIN SPEC 10534:2019-02

EN 55014-1:2006 + A1:2009 + A2:2011

EN 55014-2:2015

EN 60335-2-58:2005 + Corr. 2007 + A1:2008 + A11:2010 + A2:2015 + A12:2016

EN 61000-6-2:2005

EN 61000-6-3:2007 + A1:2011

EN ISO 12100:2010

**Die Maschine stimmt mit den folgenden Richtlinien überein:**

The product complies with the following directives:

La machine est conforme aux directives fixées:

La máquina armoniza con las siguientes Directivas:

La macchina è conforme alle direttive seguenti:

Het product voldoet aan de volgende richtlijnen:

Urządzenie spełnia wymogi następujących dyrektyw:

Mashina соответствует требованиям следующих директив:

Makine, aşağıdaki yönetmelikler ile uyumluudur:

Ovaj stroj je u skladu sa sljedećim direktivama:

Stroj ustreza zahtevam sledéćih direktiv:

A máquina está em conformidade com as seguintes diretivas:

Stroj je v souladu s ustanovenimi následujúcich smernic:

2006/42/EC (Maschinennrichtlinie, Machinery-Directive)

2014/30/EU (EMV-Richtlinie, EMC-Directive)

2011/65/EU (RoHS Richtlinie, RoHS Directive)

**Die Schutzziele der Niederspannungsrichtlinie 2014/35/EU wurden gemäß Anhang I Nr. 1.5.1 der Maschinenrichtlinie 2006/42/EC eingehalten.**

Protective Goals of the Low Voltage Directive 2014/35/EU are in compliance with Appendix I No 1.5.1 of the Machinery Directive 2006/42/EC.

Les objectifs de protection de la directive sur les basses tensions 2014/35/EU ont été respectés conformément à l'annexe I Nr. 1.5.1 de la directive relative aux machines 2006/42/EC.

Directiva de protecciones de baja tensión 2014/35/EU están en acuerdo con el apéndice I No 1.5.1 de la directiva de maquinaria 2006/42/EC.

Gli obiettivi di protezione della direttiva per basse tensioni 2014/35/EU è stata rispettata secondo allegato I n. 1.5.1 della Direttiva per macchine 2006/42/EC.

De veiligheidsdoelstellingen van de laagspanningsrichtlijn 2014/35/EU zijn nageleefd in overeenstemming met nr. 1.5.1 van bijlage I van de machine richtlijn 2006/42/EC.

Produkt spełnia wymogi bezpieczeństwa dyrektywy niskonapęciowej 2014/35/EU, zgodnie z załącznikiem I pt. 1.5.1 dyrektywy maszynowej 2006/42/EC.

Цели, охраняемые Директивой по высоковольтному оборудованию 2014/35/EU, соблюдаены в соответствии с приложением № 1.5.1 Директивы по машинному оборудованию 2006/42/EC.

Alçak Gerilim Yönetmeliği 2014/35/EU'nın koruyucu hedeflerine, Makine Yönetmeliği 2006/42/EC, ek I no. 1.5.1'e göre uyumluştur.

Sigurnosni ciljevi direktive o niskom napunu 2014/35/EU udovoljavaju dodatku I br. 1.5.1. Direktive o strojevinu 2006/42/EC.

Upoštevani so začitni cilji Direktive o nizki napetosti 2014/35/EU v skladu s prilogom I, št. 1.5.1 Direktive o strojih 2006/42/EC.

Os objetivos de protección da Directiva de Baixa Tensão 2014/35/EU foram cumpridos de acordo com o Apêndice I, nº 1.5.1 da Diretiva de Máquinas 2006/42/EC.

Cíle ochrany die nízkonapěťové směrnice 2014/95/ES byly splněny dle přílohy I č. 1.5.1 směrnice o strojních zařízeních 2006/42/ES.

Bestätigt durch:  
Confirmed by:

Offenburg, 22.07.2019

ppa.

*Harald Disch*

Harald Disch  
Direktor Produktentwicklung Europa  
Director Warewash Engineering Europe



Original

## EG-Konformitätserklärung

Declaration of Conformity / Déclaration de Conformité / Declaración de Conformidad / Dichiarazione di conformità / Conformiteitsverklaring / Deklaracija zgodnosti / Декларация о соответствии / Uygunluk beyanı / Deklaracija o sukladnosti / Izjava o skladnosti / Declaração de Conformidade / Prohlášení o shodě

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Producent / autoryzowany przedstawiciel:

Изготовитель / ответственный за составление документации:

Üretici / Dokümantasyon yetkilisi:

Proizvođač / ovlašten za sastavljanje tehničkog spisa:

Prolizvajalec / pooblaščeni za dokumentacijo:

Fabricante / Responsável pela documentação:

Výrobce / osoba zplnomocněná sestavovat dokumentace:

## HOBART GMBH / Verena Wiedenhöfer

Robert-Bosch-Straße 17

77656 Offenburg / Germany

## Maschine: Gläserspülmaschine

Machine: Glasswasher

Máquina: Lavavasos

Macchina: Lava bicchieri

Machine: Glazenwasmachine

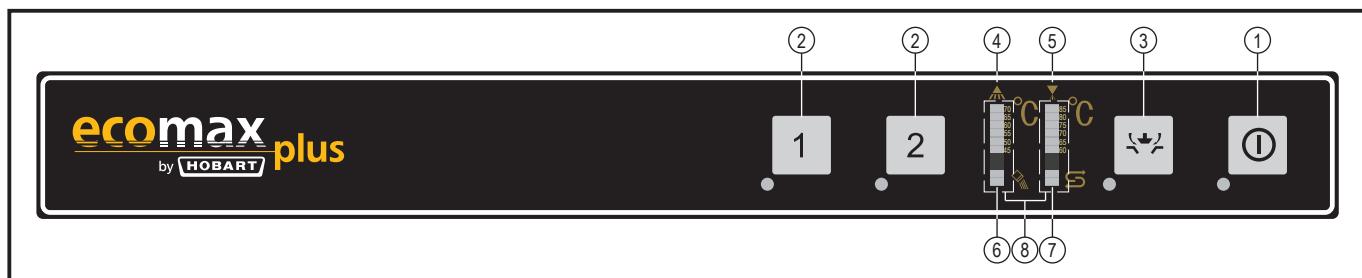
Urzadzenie: Zmywarka do naczyń ze szkła

Máquina: Secadora de loiça

Máquina:

## Controls

## 4 Controls



①	ON/Escape key	<p>Pressing this key switches the machine on. LED illuminates after being pressed.</p> <ul style="list-style-type: none"> <li>- LED flashing = machine being filled and heated.</li> <li>- LED permanently lit = machine is ready for operation.</li> </ul> <p>In case of operating error or faults, the machine can be switched off immediately without the drain cycle by pressing this key.</p> <p>After switch off, however, the machine is not voltage free.</p>																				
②	Program keys	<p>Press these keys to choose between short program (1) and standard program (2).</p> <p>The corresponding LED illuminates.</p>																				
③	Drain/OFF key	<p>Pressing and holding (3 seconds) this key activates the automatic self-cleaning cycle and then switches off the machine automatically. On machines with drain pump, the tank is emptied.</p> <p>After switch off, however, the machine is not voltage free.</p>																				
④	Temperature display, washing																					
⑤	Temperature display, rinsing																					
⑥	Salt deficiency display	Indicates regenerating salt deficiency in the water softener (if built-in).																				
⑦	Regeneration display	<p>Water softener regeneration active.</p> <p>Program run time can extend.</p>																				
⑧	Setting functions display	<p>The individual LEDs are also used for various settings and special functions.</p> <div style="text-align: center;"> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td>10</td><td>20</td></tr> <tr><td>9</td><td>19</td></tr> <tr><td>8</td><td>18</td></tr> <tr><td>7</td><td>17</td></tr> <tr><td>6</td><td>16</td></tr> <tr><td>5</td><td>15</td></tr> <tr><td>4</td><td>14</td></tr> <tr><td>3</td><td>13</td></tr> <tr><td>2</td><td>12</td></tr> <tr><td>1</td><td>11</td></tr> </table> </div> <p><b>Left display:</b> LEDs 1 to 5 illuminate depending on the function selected.</p> <ul style="list-style-type: none"> <li>1 = Detergent dosing time</li> <li>2 = Rinse aid dosing time</li> <li>3 = Hardness setting</li> <li>4 = Hose fill, detergent</li> <li>5 = Hose fill, rinse aid</li> </ul> <p><b>Right display:</b> Indicates the set value.</p>	10	20	9	19	8	18	7	17	6	16	5	15	4	14	3	13	2	12	1	11
10	20																					
9	19																					
8	18																					
7	17																					
6	16																					
5	15																					
4	14																					
3	13																					
2	12																					
1	11																					

## 5 Installation

### 5.1 Personnel qualification

Installation must only be carried out by qualified personnel (see section [2.2.2](#)).

### 5.2 Special safety instructions

#### **WARNING**

##### **Risk of electric shock, fire hazard**

Water (frost damage, machine overflow) flowing over live components can cause injury from electric shock or fire.

- ▶ Do not allow water to flow under live components.
- ▶ Make sure the machine is correctly stored (see frost damage section [2.3](#)).
- ▶ Make sure that the machine does not overflow when being filled.



#### **CAUTION**

##### **Risk of being crushed or knocked**

When being lifted or transported, the machine can overturn or fall and cause injury.

- ▶ Observe the instructions on the packaging for storage, lifting or transporting.



#### **WARNING**

##### **Risk of explosion**

Installing the machine in a potentially explosive location can cause explosion and serious injury from ejected parts.

- ▶ Do not install machine in a potentially-explosive location.



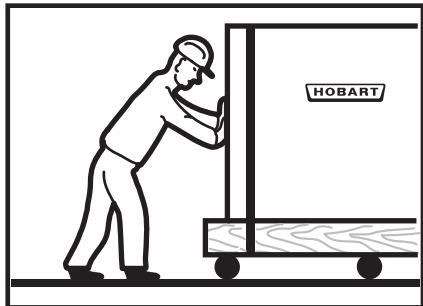
#### **NOTICE**

##### **Frost damage**

Temperatures below 0°C during transport/storage cause function impairments.

- ▶ Prior to installation, store the machine at room temperature (min. 15°C) for 24h.

## Installation



### 5.3 Transporting to the installation location

- ▶ Where possible transport packed on the pallet.
- ▶ Use suitable transport means (elevating truck, crane etc.).
- ▶ If using a forklift, shim the machine with wooden trusses.

### 5.4 Removing the packaging



#### **! CAUTION**

##### **Risk of electric shock, fire hazard**

When the machine is unpacked, the connection cable can become damaged and cause injury from electric shock or fire.

- ▶ Do not damage the connection cable while unpacking the machine.
- ▶ Take cable measurement BGV A3.

- ▶ Remove packaging materials and accessories from the machine.
- ▶ Inspect the machine for possible transport damage.

### 5.5 Installing the machine



#### **! WARNING**

##### **Risk of electric shock, fire hazard**

Water ingress can cause short circuit and mortal danger from electric shock and fire.

- ▶ Machine must be shimmed and be accessible only from the front.
- ▶ If the machine cannot be shimmed, a rear cover must also be ordered.

Wall clearance is not required.

- ▶ Align machine by turning the adjusting feet according to the spirit level.
- ▶ Distribute machine weight equally onto all feet.

#### **NOTICE**

##### **Property damage**

Vapour may escape from the dishwasher door and damage the furniture.

- ▶ Adjacent furniture has to be protected to prevent swelling.

## 5.6 Connecting to the power supply

### WARNING



#### Risk of electric shock

Failure to connect properly to the power supply can cause mortal danger from electric shock.

- Have the machine connected to the power supply by an authorized technician according to the local and national codes. For Australia: in accordance with AS/NZS3500.1

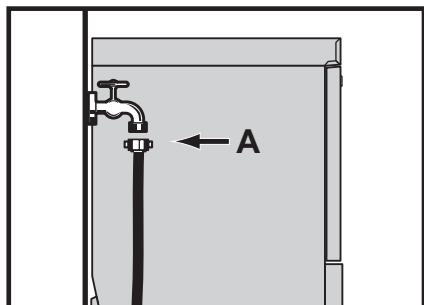
**NOTE:** To guarantee the electrical safety of the machine, it must be connected to a protective earthing equipment conductor installed as specified. In addition, the machine must be connected on site to the equipotential bonding connection. The connecting screw ( $\nabla$ ) provided for this purpose is located next to the cable inlet.

These fundamental safety requirements and the professional design of the on-site installation must be verified by a qualified electrician.

Hobart does not accept any liability for damage caused by improper installation! Any applicable local installation instructions must be observed!

The mains cable must be connected via a cut-out device (main switch or accessible plug device).

Modification to an alternative power supply is possible as per the variants on the circuit diagram. Connection diagrams are located adjacent to the connection terminals.



## 5.7 Connecting the water

**NOTE:** The machine must be operated with potable water.

- Connect to warm water, if possible (max. 60°C).

Water hardness:

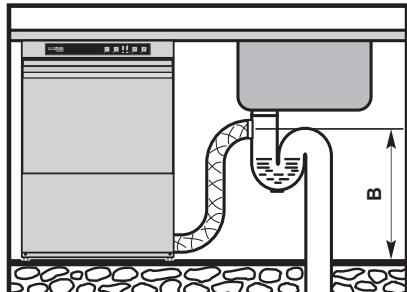
- Machines without softener: max.  $1^{\circ}\text{d}$  = 0.18 mmol/l.
- Machines with softener: max.  $30^{\circ}\text{d}$  = 5.3 mmol/l.

Line flow pressure:

- Machines without softener: 0.5 – 10 bar
- Machines with softener: 0.8 – 10 bar
- If the line flow pressure is above 10 bar: provide pressure reducing valve.

- Connect the union nut "A" (3/4") of the water supply hose to the site shut off valve.
- Do not kink or cut the water supply hose.
- Any required extension must be executed using a suitable pressure hose, e.g. 324088-1.

## Installation



### 5.8 Connecting the drain

The connection between machine and site drain “B” must not exceed the max. height of 0,75 m (G403: 0,6 m).

- Do not kink or lay the drain hose loose on the ground.

## 6 Commissioning

### 6.1 Personnel qualification

Commissioning must only be carried out by qualified personnel (see section 2.2.2).

### 6.2 Setting the water hardness (optional)

Machines with integrated softener have a water hardness setting.

**Note:** The softener must be set to the existing water hardness (ask at the local water works).

- ▶ Set hardness range according to 8.4.

### 6.3 Filling the salt reservoir (optional)

#### NOTICE

##### Property damage

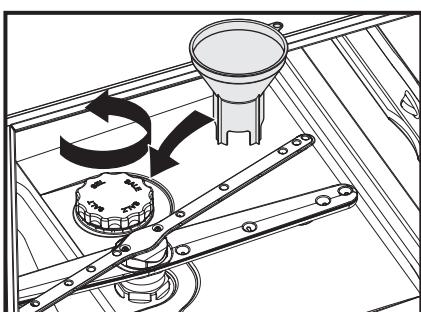
Accidentally filling the salt reservoir with detergent will damage the water softener.

- ▶ Do not fill the salt reservoir with detergent.



Unlike the regular salt fill, additional water has to be added during the commissioning procedure.

- ▶ Open the door.
- ▶ Unscrew the salt reservoir lid and add 1.5 kg of granular (2-8 mm) regenerating salt (do not use salt tablets).



- ▶ Fill up the reservoir with potable water (only at commissioning).
- ▶ Make sure the lid seal is free of dirt and salt.
- ▶ Screw lid back on and tighten.

**NOTICE****Property damage**

Salt residues on the tank floor cause corrosion damage.

- ▶ Remove salt residues by hand.
- ▶ On completion of the commissioning procedure, start a wash cycle to remove all traces of salt if necessary.

## 6.4 Filling chemical hoses



We recommend the use of HOBART Hyline detergent and rinse aid.

**⚠ CAUTION****Chemical burns, sensitisation of the skin, poisoning**

The use of unsuitable chemicals can cause injury.

- ▶ Use only commercial detergent and rinse aid.
- ▶ Observe the manufacturer's application and safety instructions.

**⚠ WARNING****Chemical burns, sensitisation of the skin, poisoning**

Filling the chemical container or chemical hoses with detergent or rinse aid for the first time incorrectly can cause serious injury.

- ▶ Wear protective equipment (gloves, safety goggles, protective clothing) when handling chemicals.

### 6.4.1 Provisioning external chemical canisters

***Preparing the detergent:***

- ✓ Suction height of dosing pump: max. 1.5 m.
- ▶ Place suction hose **without** colour marking at the suction valve at the bottom of the external reservoir.

***Preparing the rinse aid:***

- ✓ Suction height of dosing pump: max. 1.5 m.
- ▶ Place suction hose with **blue** marking at the suction valve at the bottom of the external reservoir.

### 6.4.2 Filling the intake hoses

**NOTE: Possible only when the machine is switched off.**

- ▶ Open door.
- ▶ Press the two PROGRAM keys ② at the same time.

- ↳ Key LEDs illuminate.
- ↳ In the display ⑧, LEDs 1 and 11-20 illuminate (depending on basic setting).
- ▶ Press PROGRAM key “1” repeatedly until LED 3 illuminates in the display ⑧.
- ▶ Close door.
- ▶ Press PROGRAM key “1” again.
  - ↳ Display ⑧ LED 4 illuminates.

***Filling the cleaner hose:***

- ▶ Press PROGRAM key “2” and hold down until the intake hose is visibly filled.
  - ↳ The hose is being filled.
  - ↳ Running light display ⑧ LEDs 15–18.

Releasing the key interrupts the filling process.

***Filling the rinse aid hose:***

- ▶ Press program key “1” again.
  - ↳ Display ⑧ LED 5 illuminates.
- ▶ Press PROGRAM key “2” and hold down until the intake hose is visibly filled.
  - ↳ The hose is being filled.
  - ↳ Running light display ⑧ LEDs 15–18.

Releasing the key interrupts the filling process.

***Aborting the hose filling process:***

- ▶ Open door or do not press any key for 30 seconds.

## 7 Operation

### 7.1 Personnel qualification

The machine must be operated by instructed personnel (see section 2.2.2).

### 7.2 Special safety instructions

#### CAUTION

##### **Chemical burns, sensitisation of the skin, poisoning**

If the door is opened during operation, wash water can spurt out and cause injury.

- ▶ Do not open the door during operation, wait for the program to finish.

#### WARNING

##### **Slipping**

Moisture can build up on the machine floor and cause slipping.

- ▶ Provide a floor covering that is guaranteed to be non-slip in case of moisture.

### 7.3 Notes for optimum washing result

The rinse result is significantly affected by the water quality. If the mineral content is high, the minerals dissolved become visible on the glasses in the form of spots and streaks during the drying process.



Authorised HOBART service personnel can determine the content of minerals by measuring the electrical conductivity. Values of less than 80 µS/cm are non-critical for rinsing glasses and cutlery. If the values are higher, we recommend the use of a HOBART HYDROLINE desalination cartridge or a reverse osmosis system.

If you have any questions, please contact your authorised HOBART service partner.



We recommend the use of special HOBART glass racks. HOBART racks hold the glasses in slightly inclined positions – this improves the rinse efficiency.

To avoid unpleasant smelling glasses, only chlorine-free detergent should be used for washing the glasses.

Before washing new glasses the first time with a commercial glass washer, intensive basic cleaning is mandatory to reduce the greasy film which is on most glasses for protection during production. We recommend this basic clean is carried out by hand (wear gloves) with a higher detergent concentration (minimum 10 g/l) in a sink using a brush.

## 7.4 Preparations for washing

### 7.4.1 Preparing the machine

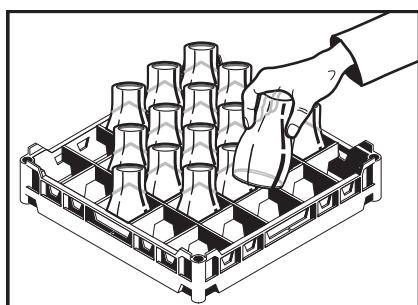
- ▶ Check correct position of wash/rinse arms and strainers.
- ▶ Open site shut-off valve.
- ▶ Turn on main switch or insert the plug.
- ▶ Check level of detergent and rinse aid containers.
- ▶ Close door.
- ▶ Press the ON/OFF key ①.
  - ↳ Machine is switched on.
  - ↳ The tank is filled.

During the filling and heating processes, the key LED flashes. This process can take several minutes.

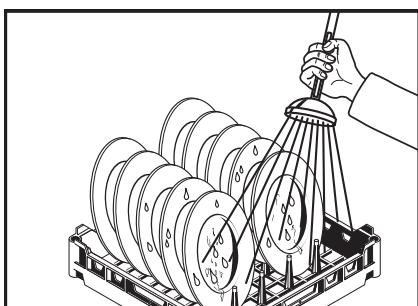
As soon as the LED is permanently lit, the machine is ready for operation.

### 7.4.2 Preparing the washware

- ▶ Remove large food scraps.
- ▶ Place washware face down in the rack.



- ▶ Rinse off washware.



## 7.5 Washing

- ▶ Slide rack into the machine and close the door.
- ▶ Start either program 1 or 2 via the respective key.
  - Key "1" = short program
  - Key "2" = standard program
    - ↳ While the program is running, the program key LED flashes.
    - ↳ As soon as the LED is permanently lit, the rinsing process is complete.
- ▶ Open the door and remove the rack.
- ▶ Allow the washware enough time to dry.

## 7.6 Switch off machine

- ▶ Close door.
- ▶ Press the DRAIN key ③ for three seconds.
  - ↳ During evacuation, the DRAIN key LED illuminates.



**During the drain cycle, the machine interior is cleaned automatically. On machines with drain pump, the tank is emptied. At the end of the program, the machine switches off automatically. Then remove any food debris.**

- ✓ When the machine has been switched off:
- ▶ Turn off main switch or remove the plug.
- ▶ Close on-site shut-off valve.

## 7.7 Executing daily cleaning

### NOTICE

#### Property damage

The use of unsuitable agents can cause corrosion damage.

- ▶ Do not use any chloric, acidic or metal-containing additives to clean the machine.
- ▶ Do not use metal brushes.

- ▶ Open the door.
- ▶ Remove sieves and clean. **Make sure that food debris does not enter pump intake!**
- ▶ Clean machine interior.
- ▶ Replace sieves.
- ▶ Leave the door open for ventilation.

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## 7.8 Executing weekly cleaning

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- ▶ Loosen screw or clip fastener on the wash and rinse arms. Remove the wash and rinse arms and clean..
- ▶ Reinsert wash and rinse arms.

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## 7.9 Top up salt reservoir

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- ✓ The salt deficiency display ⑥ flashes during operation.
- ▶ Top up salt reservoir, see [6.3](#).
  - ↳ The display takes a few minutes to extinguish.

## 8 Settings

The machine can be operated as soon as the commissioning procedure is complete.

The following settings can be individually set as required using the operator menu.

### 8.1 Opening the operator menu

**NOTE: Possible only when the machine is switched off.**

- ▶ Open door.
- ▶ Press the two PROGRAM keys ② at the same time.
  - ↳ Key LEDs illuminate.
  - ↳ In the display ⑧, LEDs 1 and 11-20 illuminate (depending on basic setting).

### 8.2 Exiting the operator menu

- ▶ Open the door and close it again, or do not press a button for 30 seconds!
  - ↳ The display switches off.
  - ↳ The configured settings will be saved.

### 8.3 Making the chemical settings

#### CAUTION

#### Chemical burns, sensitisation of the skin, poisoning

The use of unsuitable chemicals can cause injury.

- ▶ Use only commercial detergent and rinse aid.
- ▶ Observe the manufacturer's application and safety instructions.



Setting	Selection
Detergent dosing	One LED = approx. 3.5 s ≈ 1 g/l Factory setting: LED 11-13 = 10.5 s ≈ 3 g/l Possible range: 0–10 g/l
Rinse aid dosing	One LED = approx. 0.7 s ≈ 0.1 g/l Factory setting: LED 11-13 = 2.1 s ≈ 0.3 g/l Possible range: 0.1–1.0 g/l

***Making the settings:***

- Open the operator menu, see section [8.1](#).
- ↳ Key LEDs illuminate.
- ↳ In the display ⑧, LEDs 1 (left) and 11-20 (right) illuminate.
- ↳ The right display shows the set value for the cleaner dosing time.

***Setting the detergent dosing quantity***

- Press PROGRAM key “2” until the desired value is displayed.

***Setting the rinse aid dosing quantity***

- Press PROGRAM key “1” again.
- ↳ In the display ⑧, LEDs 1 and 2 (left) and 11-20 (right) illuminate.
- ↳ The right display shows the set value of the rinse aid dosing time.
- Press PROGRAM key “2” until the desired value is displayed.

## 8.4 Setting the water hardness (optional)

With optional softener only.

**Note: The softener must be set to the existing water hardness (ask at the local water works).**

LED “on”	Hardness range	Water hardness
11	H01	up to 7°dH
11 and 12	H02	8 to 14°dH
11 to 13	H03	15 to 21°dH
11 to 14	H04	22 to 30°dH

***Making the settings:***

- Open the operator menu, see section [8.1](#).
- ↳ Key LEDs illuminate.
- ↳ In the display ⑧, LEDs 1 (left) and 11-20 (right) illuminate.
- Press program key “1” again.
- ↳ In the display ⑧, LEDs 1 and 2 (left) and 11-20 (right) illuminate.
- Press program key “1” again.
- ↳ In the display ⑧, LEDs 1 to 3 (left) and 11-20 (right) illuminate.
- ↳ The right display indicates the set water hardness value.
- Press PROGRAM key “2” until the desired value is displayed.

**Problems and malfunctions****9 Problems and malfunctions****9.1 Remedyng the problem****9.1.1 Poor wash result**

Nature of the problem	Possible cause	Remedy
Washware not clean.	Wash arms stiff (you should be able to turn them easily by hand).	Remove wash arms and clean them thoroughly. Also check water outlet from machine to wash arms is clear.
	Wash arm nozzles are clogged (visual check).	Remove wash arms, remove cleaning caps and rinse wash arms thoroughly until all contamination is removed. Replace cleaning caps.
	Rinse nozzles clogged (usually by lime deposit).	Remove rinse arms and decalcify them in separate container. Check site softener system for function.
	Regeneration concentration is too low or too high.	Check detergent concentration setting.
	Coarse strainer clogged.	Remove, empty and clean strainer.
	Wrong program selected for heavily soiled washware.	Select program with longer wash cycle.
Washware dries poorly.	Rinse aid dosing too low.	Increase concentration (see operating instructions).
	Washware still greasy.	Detergent concentration too low: increase (see operating instructions). Check if detergent is appropriate. If not, choose a stronger one. Drain contaminated water and refill machine. Clear washware more thoroughly beforehand.
	Rack is not suitable for type of dishes (sloping).	Use appropriate racks to create a sloping position which allows water to drain away from cavities.
	Washware remains in the machine too long at the end of rinse cycle.	Remove washware as soon as cycle is completed to enable it to dry.

**Problems and malfunctions**

<b>Nature of the problem</b>	<b>Possible cause</b>	<b>Remedy</b>
Streaks and stains on washware.	Rinse aid concentration too high (stripe or bubble formation).	Reduce concentration (see operating instructions).
	Hard water or high mineral content.	Check water quality. Every local water works holds data on the composition of the water they supply and will provide these on request. Reference values: Ideal hard water value: 0 - 3 °d (total hardness). Ideal mineral content value: for glasses, max. conductivity 100 µS/cm, for dishes, still viable to max. 400 µS/cm.
	Rack is not suitable for type of dishes (sloping).	Use appropriate racks to create a sloping position which allows water to drain away from cavities.
	Inadequate rinse aid dosing causes stains.	Increase rinse aid dosing (see operating instructions).
	Machines with integrated softener: use of wrong salt (e.g. tablets).	Do not use salt tablets.

**9.1.2 Other problems**

<b>Nature of the problem</b>	<b>Potential causes</b>	<b>Remedy</b>
Glasses are totally or partially cloudy.	Surface of glasses is rough and porous, this is called glass corrosion.	Use new glasses, this is not caused by a malfunction on the machine.
Glass/dish breakage.	Use of unsuitable dish or glass racks.	Use suitable racks.

**9.2 Malfunctions**

<b>Nature of the problem</b>	<b>Potential causes</b>	<b>Remedy</b>
Machine switches off suddenly during operation.	Machine coupled to a maximum system or locked against other current consumers.	Have machine connected separately (electrician!).
	A site fuse has tripped.	Check site fuses.
	Temperature sensor/pressure transmitter, boiler or tank defective.	Contact your Service Partner.
All 4 key LEDs flash.	Controller faulty	Contact your Service Partner.

**Maintenance****10 Maintenance**

In order to maintain the warranty, as well as a permanently safe, efficient, and trouble-free operation of the machine(s), the required maintenance must be carried out by authorized service technicians.

We therefore recommend the conclusion of an inspection and maintenance contract, which guarantees qualified support by specially trained service technicians according to a time schedule based on the operating conditions.

## 11 Disposal



The machine operator is responsible for disposing of the machine and its operating materials correctly and in accordance with environmental regulations. Observe the national and local legal provisions and regulations.

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