

# HB-THERM<sup>®</sup>

## CLEAN-5

### Cleaning Unit

Product Information 2015-10





## Cleaning Unit Clean-5

Aside from reducing flow, impurities lead to a degradation in heat transfer, and thus to a deterioration in performance.

Clean-5 removes corrosion and scale in moulds, temperature control units and hoses, and provides extended protection in storage.

It offers easy and ecological operation, prompts the user to add the respective amounts of agent, and then automatically continues its work.

### *...for channels to become nicely clean*

Higher process reliability

- Perfect heat transfer between medium and mould
- Precise temperature control
- No blocked circuits

Longer service life

- Less component failures
- Removes corrosion and scale in the mould

### *...easy, intelligent and convenient*

Simple operation

- Well-arranged menus in 18 languages
- Intuitive navigation
- Interactive user guidance allows use without prior knowledge
- On-the-spot instructions at the push of a button

Bright display

- Easily legible with accentuated contrast
- Free choice of display windows and values

Convenient functions

- Exactly calculates the amounts of the required agents
- Integrated logbook tracks the cleaning process
- Easy front-side sampling
- Recording of data via USB and analysis in Excel

Tu 2015-08-25, 14:38		HB-THERM		Warning ▶ Add agent	
Cleaning			✓	Please add 217 g or 146 ml	
Neutralisation			✓	neutralisation agent DOS N720.	
Before Conservation			✓	> Continue by pressing OK	
Rinsing	1/3	00:09	<div><div></div></div>		
Preservation					
Finishing					
Cleaning effectiveness		8.4	% <sub>min</sub>		
Main line pressure		1.5	bar		
Filling volume tank		8.0	L		
1			Rinsing	1	Neutralisation

### *...cleans, rinses and conserves*

Intensive cleaning

- Efficiently releases deposits with automatic flow reversal
- Cleans only as long as necessary

Thoroughly neutralizes and rinses

- Multiple rinsing with automated filling and draining

Sustained protection

- Conserves the cleaned surfaces
- No corrosion of moulds in storage

### *...safe, reliable and low on maintenance*

Fully automated process monitoring

- Tracks the cleaning success

Durable construction

- Solely non-corroding materials in the hydraulic circuit
- Sealless pump in stainless steel
- Medium-separated ultrasonic fill-level measurement
- Easy-to-remove filter cage

### *...easy on the environment*

- Only uses as much agent as necessary
- Neutralization before draining of the cleaning liquid



## Procedure

The Clean-5 cleaning unit cleans, flushes and preserves circuits of moulds, water temperature control units and hoses. The automated flow reversal optimises cleaning success. Flushing and preservation prepare the circuits for new use or damage-free storage. Requests for the addition of the required amounts of cleaning, neutralisation and preservation agents are signalled by the unit. The cleaning process as well as the filling, flushing and draining cycles are performed automatically by the unit.

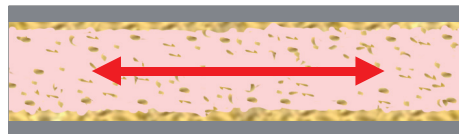
### Initial Situation

- Corrosion and scaling in the circuit



### Cleaning

- Automatic filling
- Addition of cleaning agent
- Cleaning with automatic flow reverse
- Dirt accumulation in filter basket
- Monitoring of the cleaning success
- Automatic circuit evacuation

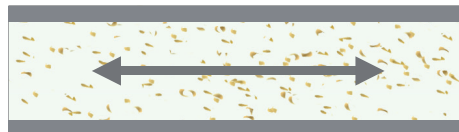


### Neutralisation (tank)

- Addition of neutralising agent
- Neutralisation of the tank medium
- Automatic complete draining

### Pre-preservation

- Addition of pre-preservation agent
- Pre-preservation with automatic flow reverse
- Automatic complete draining



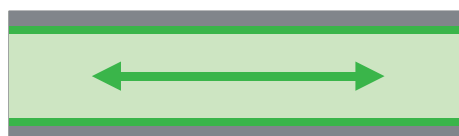
### Rinsing

- Automatic filling
- Rinsing with automatic flow reverse
- Automatic complete draining
- Multiple programmable repetition



### Conservation

- Automatic filling
- Addition of preserving agent
- Conservation with automatic flow reverse
- Optional circuit evacuation
- Automatic draining of the tank



## Necessary Agents

HB-Therm cooperates with partners and provides advice for the procurement of the preferred agents for cleaning, neutralisation, treatment and preservation. Trade and application are subject to national regulations.

More information → Accessories Program (D8064-E)



# Technical Data

## Standard Equipment

<b>Hydraulics</b>	Hydraulic circuit made of non-corroding materials
	Stainless steel pump without mechanical seal; Energy efficiency class IE2
	Medium-separated ultrasonic fill-level measurement
	Shut-off valve on front panel for sampling
	Removable filter basket (mesh size 0,2 mm)
<b>Functions</b>	Automatic filling and draining
	Automatic neutralisation of cleaning agent
	Conservation without disassembling
	Automatic dosing calculation of required agents
	Automatic rinsing function without disassembling
	Automatic flow reversal for cleaning, rinsing and conservation
<b>Monitoring / Safety</b>	Mixing function of the manually added agents
	Monitoring of the cleaning success
	Safe handling through configuration and naming of agents
	Easy monitoring of the pH value (with test kit or pH meter)
<b>Command / Display</b>	Lockable and abrasion resistant castors (PUR)
	TFT-Colour display 3,5" with interactive user guidance in 18 languages
	Help button with context sensitive information
	Large choice of display windows and values
	Display of cleaning success in L/min
	Display of date and time
	Visual and acoustic alarms; volume adjustable
	Hours run counter and service interval display
	Integrated logbook for test results, average use, dilution and alarms
	Data input password protected
<b>Interface</b>	USB-Connection (Host / Device) for software updates, parameter transfer and data recording

## Additional Equipment

<b>ZK</b>	<b>Keyboard-protection</b>	Transparent flap over display and controls
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## Technical Specifications

Cleaning unit		Type	HB-CL
		Housing size	
<b>Pump</b>	sealless, stainless; 0,5 kW; 30 L/min, 52 m	<b>2M</b>	●
<b>Additional equipment</b>	Keyboard-protection	<b>ZK</b>	○
<b>Mains voltage</b>	400 V (380–415 V), 50 Hz; 3LPE	<b>405</b>	●
	400 V (380–415 V), 60 Hz (50/60 Hz); 3LPE	<b>406</b>	○
	210 V (200–220 V), 50 Hz; 3LPE	<b>215</b>	○
	210 V (200–220 V), 60 Hz (50/60 Hz); 3LPE	<b>216</b>	○
	460 V (440–480 V), 60 Hz; 3LPE	<b>466</b>	○

Ordering example: HB-CL2-2M-ZK, 405, English

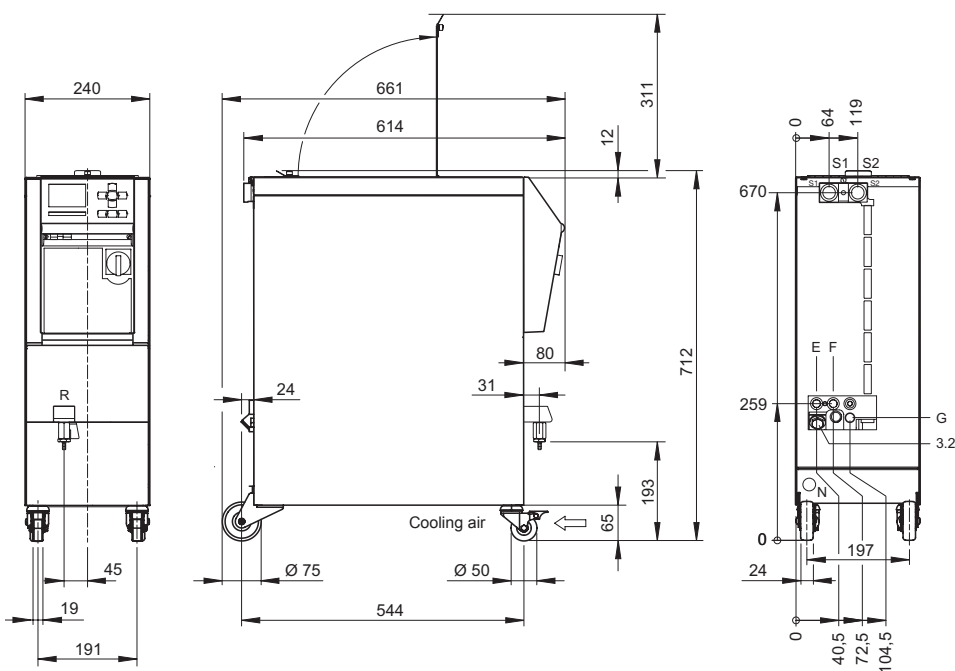
● Standard specification    ○ Optional

**General Technical Data**

Power connection	Mains cable to unit	2,5 mm <sup>2</sup> 3LPE, 4 m (plug on request)
	Connected load; maximum fusing	0,6 kW; 3x16 A
Dimensions	Height	712 mm
	Width	240 mm
	Depth	661 mm
Weight max.		55 kg
Tank utilization capacity		23,8 L
Connection 1, 2	Thread	G $\frac{3}{4}$
	Resistance	10 bar, 60 °C
Connection, fresh water inlet	Pressure	2–5 bar
	Thread	G $\frac{3}{8}$
	Resistance	10 bar, 60 °C
Connection, discharge water outlet	Thread	G $\frac{3}{8}$
	Resistance	10 bar, 60 °C
Drain	Thread	G $\frac{3}{8}$
Environment	Temperature	5–40 °C
	Humidity	35–85 % RH (non-condensing)
Colour	Cover	RAL 7035 (glossy light grey), RAL 5012 (glossy light blue)
	Control panel	RAL 7012 (basalt grey)
Protection class		IP 44
Standards		EN 12953-6, EN 60204-1, EN 60335-1, EN 61000-6-2, EN 61000-6-4, EN ISO 12100, EN ISO 13732-1
Certification / Approval		CE (compliance with relevant CE directives)

**Dimensions**

Housing size 2, scale 1:15



- |                     |                          |                              |
|---------------------|--------------------------|------------------------------|
| S1 Connection 1     | F Discharge water outlet | R Water sampling (Test)      |
| S2 Connection 2     | G Drain                  | 3.2 Fresh water inlet filter |
| E Fresh water inlet | N Mains connection cable |                              |

**Interface**


# HB-THERM®

## Temperature Control Technology

### **HB-Therm worldwide.**

Since 1967 HB-Therm AG has been developing and producing innovative „Swiss-made“ temperature control technology to the highest quality standards. With its comprehensive know-how and motivated workforce, the company has succeeded in becoming the technology leader in its sector.

This Swiss family enterprise employs around 110 staff and has established itself as a systems supplier offering seamless customer support from machine design through to a complete after-sales service. Production is exclusively in St. Gallen.

Own subsidiaries (Sales & Service) in Germany and France as well as 40 other national agencies are representing HB-Therm around the globe.

The company's quality and environmental management system is based on the continual improvement of all activities and processes and is certified to ISO 9001/14001. All its products and services are based on a philosophy of offering „Swiss-made“ quality to customers.

### **Customer service. Included.**

With our sales and marketing network service we can offer comprehensive expert advice and assistance in:

- Optimum temperature control process
- Determination of the specification of the product and advice regarding functionality
- Electrical and hydraulic connections
- Data interfaces
- Heat transfer medium
- Servicing of the equipment

Our experts are always available for support when questions of specialist requirements or applications arise or when putting the equipment into operation, or for the operational training of your staff.

HB-THERM AG  
Spinnereistrasse 10 (WU 3)  
Postfach  
9006 St. Gallen  
Switzerland  
Phone +41 71 243 6-530, Fax -418  
info@hb-therm.ch, www.hb-therm.ch

### Subsidiaries

HB-THERM GmbH  
Dammstrasse 70-80  
53721 Siegburg  
Germany  
Phone +49 2241 5946-0, Fax -20  
info@hb-therm.de, www.hb-therm.de

HB-THERM S.A.S.  
La Grande Vaupière  
01390 St. Jean de Thurigneux  
France  
Phone +33 4 74 00 43 30  
Fax +33 4 26 23 68 22  
commercial@hb-therm.fr, www.hb-therm.fr

### Distributors

**Australia (AU)**  
Parrington Group Pty. Ltd., Magill SA 5072

**Austria (AT)**  
Luger Gesellschaft mbH, 3011 Purkersdorf

**Belgium (BE)**  
AJ Solutions BVBA, 2240 Zandhoven

**Brazil (BR)**  
HDB Representações Ltda, Cotia (SP) 06705-110

**China (CN)**  
ARBURG (Shanghai) Co., Ltd., 201100 Shanghai  
ARBURG Machine & Trading, 518108 Shenzhen  
Dongguan Chang An Shihui, 523850 Dongguan City  
Tianjin Cenglary Trading Co., Ltd., 300452 Tianjin City

**Croatia (HR)**  
Luger Gesellschaft mbH, 3011 Purkersdorf

**Czech Republic (CZ)**  
Luger spol. s.r.o., 251 01 Ricany

**Denmark (DK)**  
SAXE Hansen, 3500 Værløse

**Finland (FI)**  
Engel Finland Oy, 00380 Helsinki

**France (FR)**  
HB-THERM S.A.S., 01390 St. Jean de Thurigneux

**Germany (DE)**  
HB-THERM GmbH, 53721 Siegburg

**Hong Kong (HK)**  
ARBURG (HK) Ltd., Quarry Bay

**Hungary (HU)**  
Luger Kft., Budapest 1147

**India (IN)**  
Salnik Solutions, 400072 Mumbai

**Indonesia (ID)**  
ARBURG Indonesia, Jakarta 10150

**Ireland (IE)**  
KraussMaffei (UK) Ltd, WA5 7TR Warrington

**Israel (IL)**  
Israpack Ltd., 31097 Haifa

**Italy (IT)**  
Nickerson Italia Srl, 24030 Brembate di Sopra (BG)

**Japan (JP)**  
ARBTECHNO Ltd., Iwaki 973-8406

**Korea, Republic of (KR)**  
IMTS, Seoul

**Liechtenstein (LI)**  
HB-THERM AG, 9006 St. Gallen

**Luxembourg (LU)**  
AJ Solutions BVBA, 2240 Zandhoven

**Malaysia (MY)**  
ARBURG Sdn Bhd, 46150 Petaling Jaya

**Mexico (MX)**  
Engel Mexico S.A. de C.V., 76246 El Marques, Querétaro

**Netherlands (NL)**  
ROBOTECH bv, 4824 JS Breda

**New Zealand (NZ)**  
AOTEA MACHINERY LTD., Auckland 1145

**Poland (PL)**  
ELBI-Wrocław Sp. z o.o., 53-234 Wrocław

**Portugal (PT)**  
novaELECTROLIS, Comércio de, 2401-970 Leiria

**Romania (RO)**  
Plastic Technology Service Srl, 032451 Bucuresti

**Singapore (SG)**  
ARBURG PTE LTD., Singapore 139965

**Slovakia (SK)**  
Luger spol. s.r.o., 251 01 Ricany

**Slovenia (SI)**  
Luger Gesellschaft mbH, 3011 Purkersdorf

**South Africa (ZA)**  
Maritime Marketing, 1684 Kyalami

**Spain (ES)**  
Netstal Máquinas, S.A., 08100 Mollet del Vallès

**Sweden (SE)**  
Forvema AB, 511 54 Kinna

**Switzerland (CH)**  
HB-THERM AG, 9006 St. Gallen

**Taiwan (TW)**  
Morglory International Co., Ltd., Taichung City 407

**Thailand (TH)**  
ARBURG (Thailand) Co., Ltd., Samutprakarn 10540

**Turkey (TR)**  
ARBURG Plastik Enjeksiyon, 34524 Yakuplu-Büyükcçekmece/Istanbul

**United Kingdom (GB)**  
KraussMaffei (UK) Ltd, WA5 7TR Warrington

**United States (US)**  
Frigel North America, East Dundee, IL 60118