



Translation of the Original Operating Instructions

Micro Application Head HB 11



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1 General

Please read these operating instructions carefully and thoroughly before putting the micro application head into operation the first time. Pay particular attention to the safety notes in Chapter 2.

These operating instructions must be readily accessible to every user at all times.

Please also comply with the operating instructions for the

- tank system and the
- heatable hose,

especially the safety notes contained within.

1.1 Operative range

The micro application head HB 11 is used for the dosed discharge (bead or line form) of hot melt adhesives with exchangeable nozzles (intended use).

1.2 Technical data

Model	HB 11
Parts No.	NKT 0590 (Ni 120) FCH 0479 (Pt 100)
Scope of delivery	<ul style="list-style-type: none"> • Micro Application Head HB 11 • Module HB 1 • Solenoid valve • Connecting cable for solenoid valve The nozzle is specific to application and not included in the delivery. Please order separately!
Weight [kg]	0.54
Supply voltage for solenoid valve [V DC]	24
Operating current solenoid valve [A]	0.7
Heating capacity [W]	160
Class of protection	IP40
Operating temperature [°C]	up to 200
Warming up period [min]	<10
Temperature sensor	Pt 100 or Ni 120 (alternatively: NTC or FeCuNi)
Compressed air connection [bar]	5...6 The compressed air must be free of condensate and acid.
max. hot melt adhesive pressure [bar]	100
Hot melt adhesive viscosity [mPas]	500...15,000
Switching frequency* [cycles/s]	max. 200
Response time of the solenoid valve* [ms]	3
Nozzle thread	UNF 3/8"
Connection for hot melt adhesive	9/16"-18 UNF for standard hose width 8 (other thread types possible)
Head bracket	For holding rod with 11...12 mm Ø
Dimensions [mm]	150 x 18 x 99 (H x W x D)
Recommended hot melt materials	BÜHNEN hot melt adhesives

* depends on utilised hot melt adhesive

1.3 Dimensioned drawing

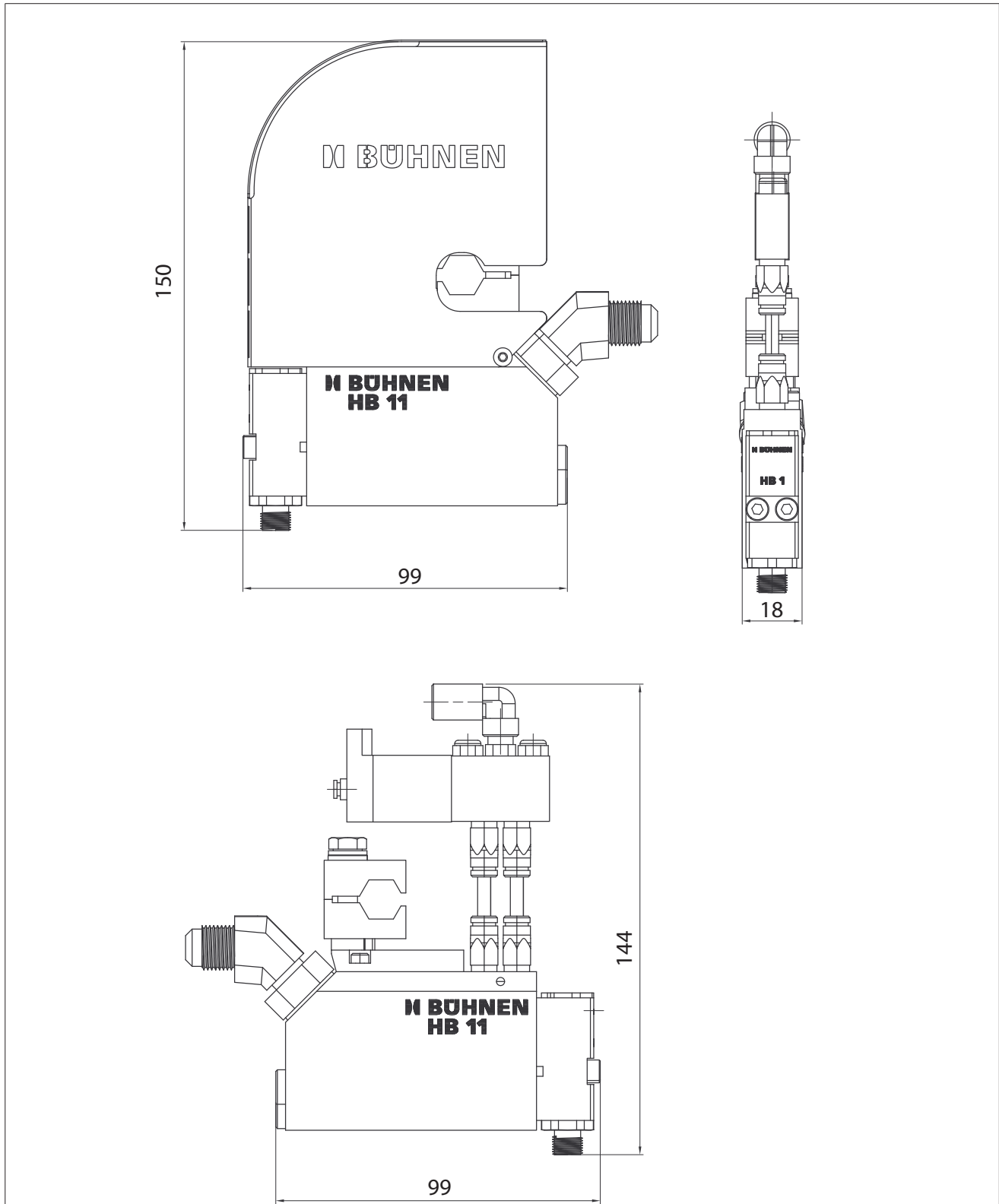


Figure 1: Dimensioned drawing

2 Security advice
2.1 Possible dangers



Danger!

Never point the operational device at other persons.
 Danger due to high pressure!



Danger of burns!

The nozzle and melted hot melt adhesive can reach temperatures over 200°C. Wear heat protection gloves whenever contact is unavoidable.



Danger due to vapours!

PU hot melt adhesives give off harmful vapours (isocyanates) even when applied in accordance with instructions. If the prescribed processing temperature is exceeded for a longer period, harmful decomposition products will develop.

For your safety, please observe the following notes:

- Make sure there is sufficient ventilation (S statement 51).
- Do not inhale vapours and atomised sprays (S statement 23).
- Do not smoke, eat or drink during work (S statement 20/21).

Measures for First Aid

After skin contact:	Cool the affected areas immediately with plenty of cold water.
After contact with eyes:	Rinse your eyes immediately with running water for several minutes. Have a doctor remove the cooled adhesive.
If nauseous after inhaling vapours:	Provide fresh air. For persistent malaise, consult a doctor.
After swallowing:	For persistent malaise, consult a doctor.

2.2 Notes on safe operation

To avoid functional disruptions and faulty operation, comply exactly with the following notes at all times:

- The maximum permissible operating pressure of the hot melt adhesive (100 bar) must never be exceeded.
- Remove combustible or heat-sensitive objects out of the range of the nozzle.
- Protect the device from moisture and wetness (protection from electric shock).
- Comply with the processing data sheet of the hot melt adhesive (protection from processing errors).
- Disconnect the power supply (plug-in connection at heatable hose) before every engagement at the device (maintenance, cleaning).
- Allow the device to cool off completely before storage.
- Should you become aware of damage to the device or to the supply leads, disconnect the device from the power supply immediately. Have the device inspected immediately by a specialist. It may only be put back into operation after proper repairs (see chapters 6 and 7).

3 Assembly

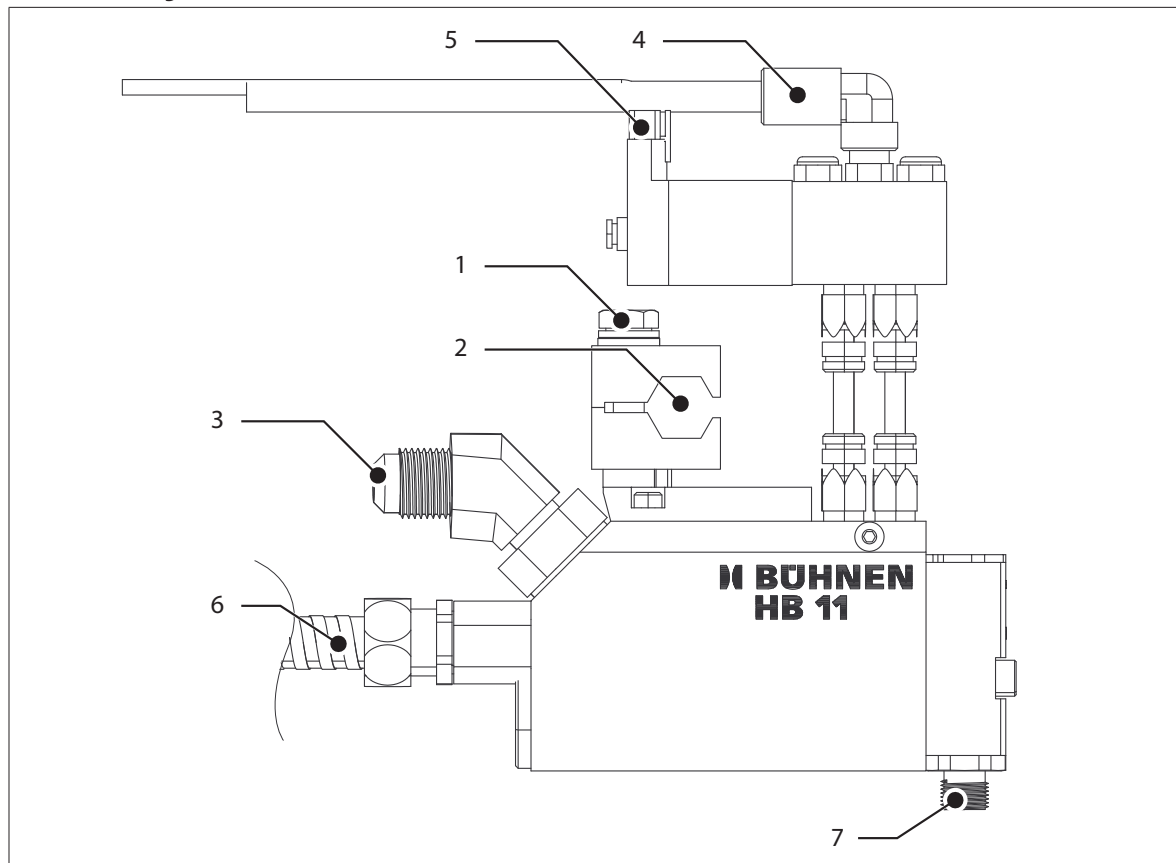


Figure 2: Connections HB 11

Cons. No.	Function
1	Clamping screw
2	Opening for holding rod
3	Connection heatable hose
4	Connection compressed air (PK 4)
5	Connection solenoid valve (for PLC/controller)
6	Connection heater/temperature sensor (for heatable hose)
7	Nozzle foot

3.1 Mechanical assembly

Required tools

- 1 Allen key 2 mm
- 1 open-end wrench size 10

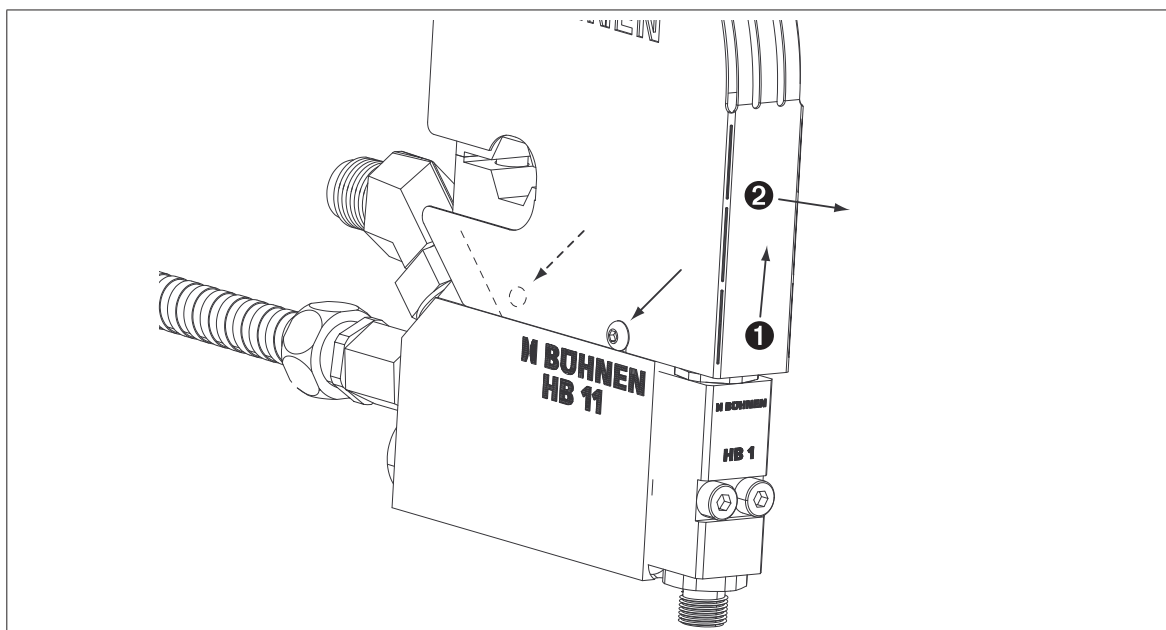


Figure 3: Release the hood

To assemble, carry out the following steps:

1. To release, turn the screws shown in *Figure 3* 2-3 revolutions using an Allen key (2 mm).
2. Slightly raise the covering cap (❶) and pull off towards the front (❷).
3. Release screw (1) (see *Figure 2*) with an open-end wrench (size 10).
4. Push the opening (2) of the clamp over the holding rod (11...12 mm Ø).
5. Align the application head in the required position.
6. Tighten the screw (1).

3.2 Electrical connection

For the electrical connection, carry out the following steps:

1. At the tank system, switch off the heater of the output to which the application head will be connected.
2. At the controller/PLC, switch off the activation of the solenoid valve.
3. Insert the plug (5) (see *Figure 2*) of the cable for the activation of the solenoid valve.
4. Apply the free ends of the cable to the corresponding connections of the controller/PLC.
5. Connect the plug-in connector at the end of the cable (6) to the mating connector at the heatable hose.



Danger of burns!

If the heater is not switched off (see *step 1*), the application head can be heated now and reach temperatures exceeding 200 °C!

3.3 Compressed air connection

Connect the compressed air supply (quick coupler PK4) to the connection (4) (see *Figure 2*).

The supplied compressed air must be free from condensate and oil.

3.4 Heatable hose

Required tools

- 1 open-end wrench size 14
- 1 open-end wrench size 19 (Pt 100) or.
- 1 open-end wrench size 18 (Ni 100)

To connect the heatable hose, carry out the following steps:

1. At the tank system, activate the heater of the corresponding output.
2. Allow the heatable hose to heat to operating temperature.
3. Screw on the heatable hose with connection (3) (see "*Figure 2: Connections HB 11*" on page 6).

While doing so, secure the application head with the open-end wrench size 14.

After placing and screwing on the hood (see *Figure 3*), assembly is completed.

The application head can now be put into operation.

4 Operation

4.1 Initial operation

The heating time of the application head is significantly less than those of the other components (tank system/heatable hose).

After the tank system has heated, the application head can be put into operation immediately. Additional preparations are not necessary.

4.2 Adjusting the adhesive dosage

The adhesive discharge per timing cycle depends on the parameters

- Adhesive pressure
- Nominal diameter of the nozzle
- Opening time of the solenoid valve

After initial operation, use trials to determine the optimal combination of these parameters for your application.

4.3 Interruptions in work/End of shift

In case of longer periods of interrupted work/end of shift, the application head can be put out of operation by switching off the heater.

When switched back on, the heating time of the heater is less than 10 minutes.

4.4 Processing PU hot melt adhesives

For PU (polyurethane) adhesives, the humidity triggers a chemical reaction which leads to the firm bonding of the objects to be glued.

Please also observe our "Product Information Polyurethane Hot Melt Adhesive."

5 What happens if...

This chapter provides an overview of possible status and error messages and offers help on error correction

In case of occurring functional disruptions, please first check

- the power supply and the
- compressed air supply for proper function as well as
- whether the device or the supply leads (power supply, compressed air) show mechanical damage.

If you determine mechanical damage, do not in any case put the device back into operation. Have the device inspected and repaired by a qualified service centre.

5.1 Troubleshooting and repair

Fault	Possible Cause	Remedy	see chapter
Nozzle drips	Module HB 1 defective	Clean nozzle foot/needle Replace module	6.3
Too little hot melt material or none at all is discharged	Operating pressure too low	Increase operating pressure (max. 100 bar)	
	Compressed air supply interrupted	Check compressed air lead	
	Nozzle system clogged	Clean or replace nozzle	6.2.1
	Temperature sensor defective	Replace temperature sensor	
	Processing temperature too low	Increase temperature	
	Module HB 1 defective	Replace module	6.3

6 Maintenance/servicing



Danger!

Danger due to electrical voltage.

All work which requires the device to be opened must only be done by qualified, electrically skilled personnel.



Danger of burns!

The nozzle and melted hot melt adhesive can reach temperatures over 200°C. Wear heat protection gloves for maintenance and repair work.

6.1 Maintenance intervals

Comply with the listed maintenance intervals to ensure continuous faultless and safe operation:

Daily:	Check the nozzle system for passage (visual check)
	Clean the nozzle system as necessary
Weekly:	Check of all attachments for correct fit and tightness (visual check)

6.2 Cleaning

- Do not use aggressive solvents to clean the device. The solvents could damage the device components.
For cleaning we recommend BÜHNEN Cold Cleaner (Art.-No. F91500).
- Replace parts that cannot be cleaned (e.g. due to burnt or fully cured hot melt material) completely. We recommend having this work done by BÜHNEN Service.
- Remove the residues of hot melted material and other contaminations by mechanical means only, e.g., using a cloth, soft brush, wood spatula or similar.

6.2.1 Clean nozzle

Required tool

- 1 open-end wrench 11 mm



Danger of burns!

The module and melted hot melt adhesive can reach temperatures over 200°C. Wear heat protection gloves for the following work steps.

To clean the nozzle, carry out the following steps:

1. Heat up the application head to operating temperature.
2. Unscrew the nozzle with the open-end wrench (11 mm).
3. Push the appropriate nozzle cleaning needle (Art. No. see table) through the nozzle:

For nozzle-Ø	Art.No.
0.15...0.20	NKT0244
0.20...0.35	NKT0241
0.30...0.50	NKT0241
> 0.40	NKT0243

4. Screw on nozzle.

6.3 Replace module HB 1

Required tools

- 1 Allen key 3 mm
- 1 open-end wrench 11 mm

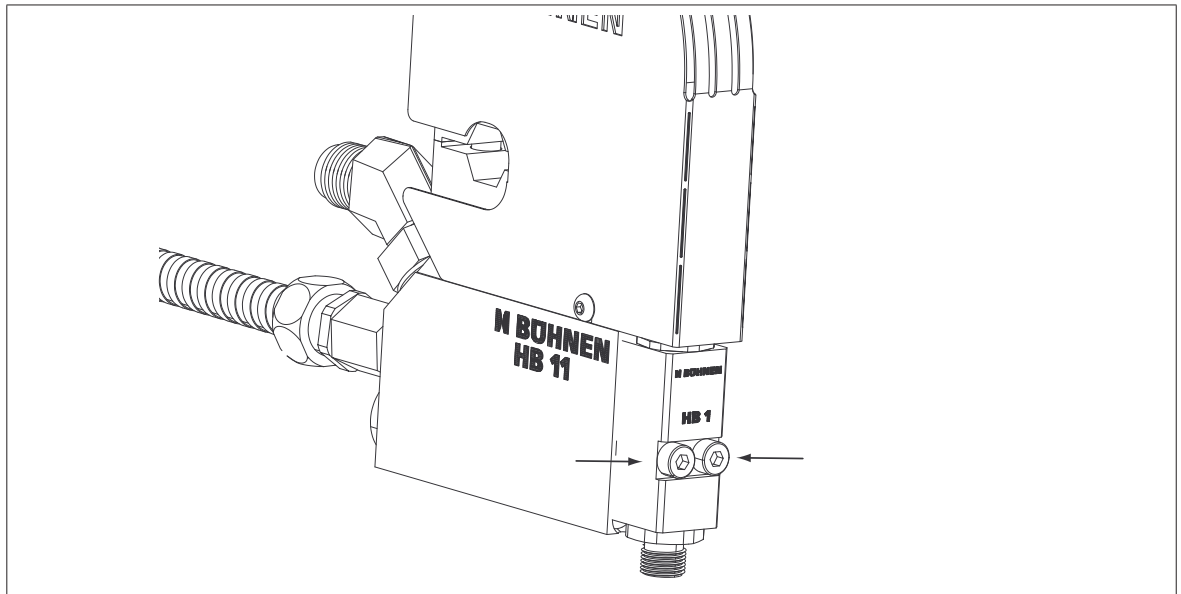


Figure 4: Replacement of module HB 1



Danger of burns!

The module and melted hot melt adhesive can reach temperatures over 200°C. Wear heat protection gloves for the following work steps.

To replace the module HB 1, carry out the following steps:

1. Heat up the application head to operating temperature.
2. Unscrew the nozzle with the open-end wrench (11 mm).
3. Release the screws (M4) shown in *Figure 4* using an Allen key (3 mm).
4. Remove the module

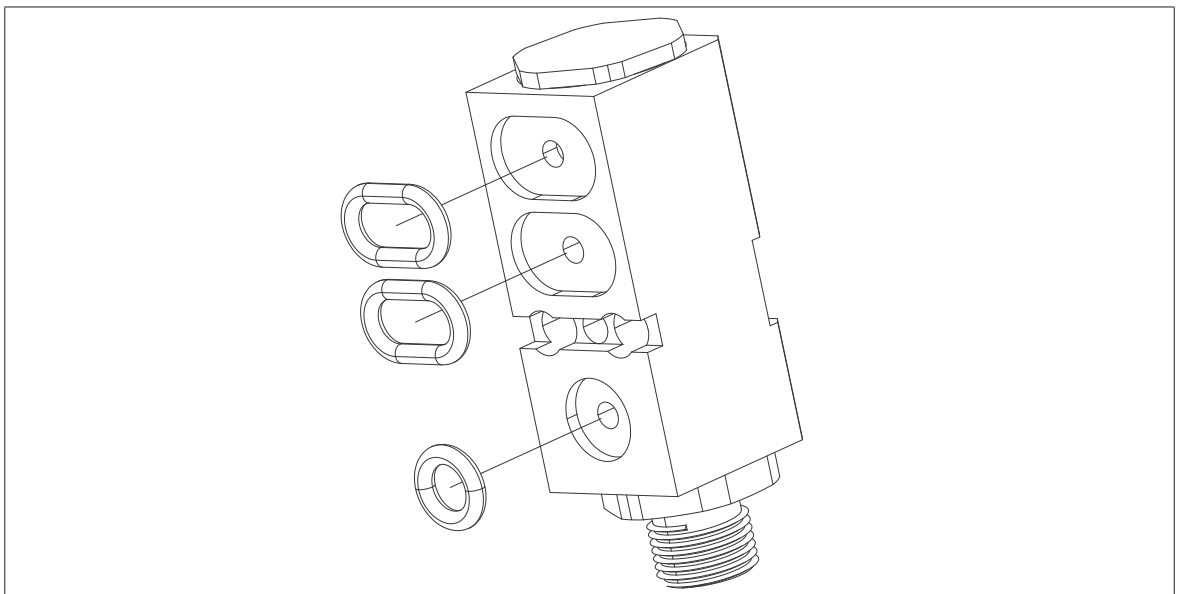


Figure 5: Insert O-rings

5. Check the supplied O-rings for completeness and correct fit (see *Figure 5*).
6. Position the module to the application head and screw on.
7. Screw on the nozzle at the nozzle foot of the module (*Item (7) in Figure 2*).
It may be necessary to wait until the new module has reached the operating temperature.

7 Repairs

Repairs other than those described in these operating instructions may only be implemented by competent persons commissioned by BÜHNEN or otherwise competent persons with the use of original BÜHNEN spare parts.

8 Warranty

The unit was developed and manufactured according to the latest state of technology. The first purchaser receives warranty on function, material, and processing according to statutory regulations. Normal wear and tear is excepted.

The warranty is void if improper handling, use of violence, repairs by third parties and the installation of spare parts other than the original has been determined.

The warranty extends to servicing or replacing according to our choice. Warranty beyond our scope of delivery is excluded, as we do not have any influence on the competent and expert use of the unit.

Please observe our terms and conditions!

9 Disposal



Take the unit, packaging, and accessories to an environmentally friendly recycling centre (in accordance with Directive 2002/96/EG of the European Parliament and the Council of January 27, 2003).

10

Spare parts

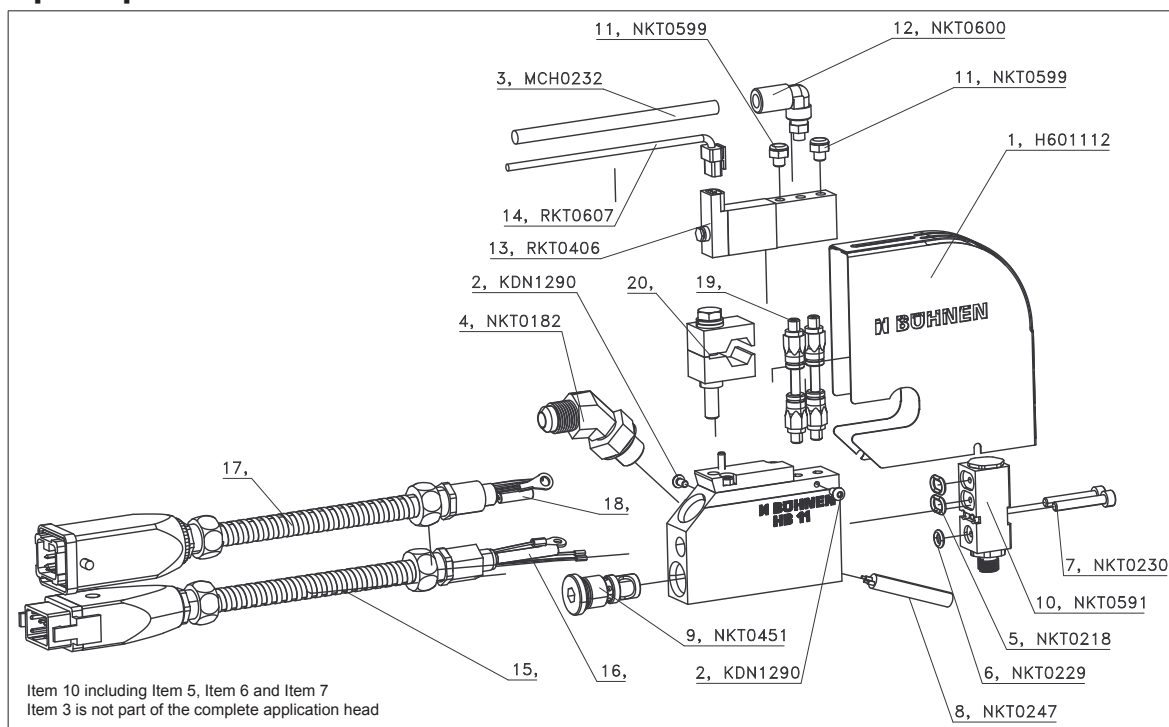


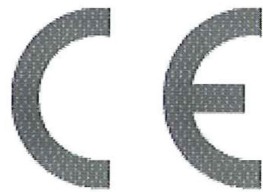
Figure 6: Spare parts

Spare parts list

Item	Order No.	Quantity	Designation
1	H601112	1	Panelling with BÜHNEN logo
2	KDN1290	2	Hexagon socket
3	MCH0232	1	Air hose NW4 PTFE
4	NKT0182	1	Adapter 45°
5	NKT0218	1	O-ring 21.95 x 1.78
6	NKT0229	1	O-ring
7	NKT0230	2	Cheese head screw
8	NKT0247	1	Heating cartridge 6.5 x 40
9	NKT0451	1	Head filter unit Series BM
10	NKT0591	1	Module HB 1
11	NKT0599	2	Silencer
12	NKT0600	1	Air nipple 90°
13	RKT0406	1	5/2-way valve
14	RKT0607	1	Connector
15	·	1	Cord set Ni 120
16	·	1	Temperature sensor Ni120
17	·	1	Cord set Pt 100
18	·	1	Temperature sensor Pt 100
19	·	1	Tube with quick coupler (set)s
20	·	1	Bracket

* upon request

Declaration of Conformity



Conformity Declaration

We, the **Bühnen GmbH & Co. KG**
D-28277 Bremen

declare on our sole responsibility that the product

Applicator Head HB 11

to which this declaration refers, complies with the following Standards or normative documents in its supplied condition:

EN 55014

EN 60204-1

EN 61000-3

in accordance with the stipulations of guideline

2001/95/EC

2002/95/EC


2002/96/EC


2004/108/EC

2006/95/EC

2011/65/EU

Bremen, March 2014


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