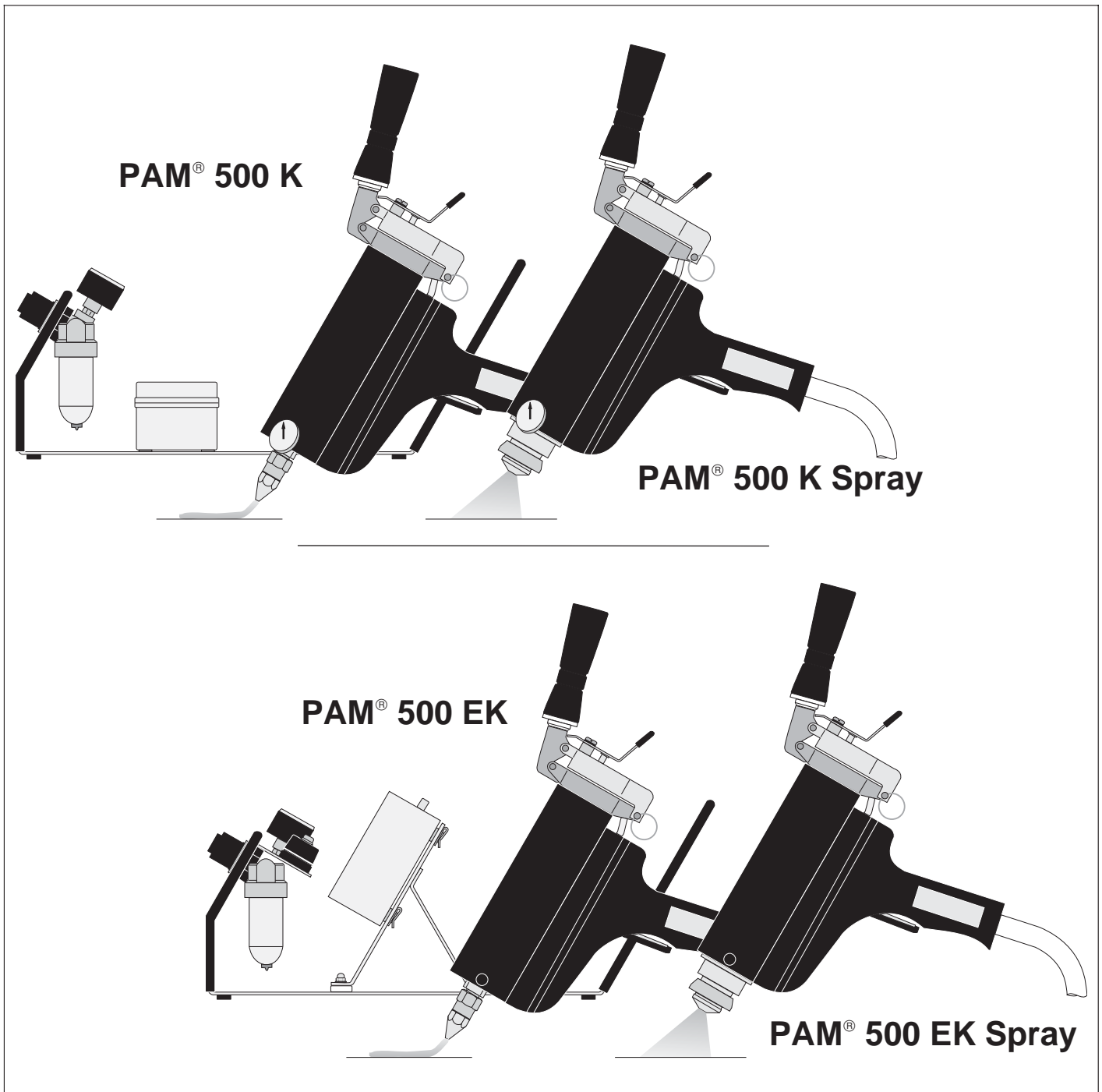


# Operating Instructions

## Hot-Melt Applicators for Cartridges



Read these instructions carefully before using this tool! Keep these instructions for future reference! Adhering to the operating and safety instructions and all statutory regulations is the responsibility of the operator.





**PAM<sup>®</sup>**  
**FASTENING TECHNOLOGY, INC.**  
Division of BUEHNEN Group, Germany

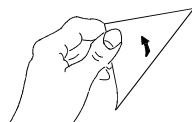
**Fastening Technology Inc.**  
2120 Gateway Blvd., Charlotte N.C. 28208  
P.O. Box 669063, Charlotte N.C. 28266  
Tel. (704) 394 3141, Tfx. (704) 394 9339

# Contents

	Page
<b>Controls</b> . . . . .	3
<b>1 Specifications</b> . . . . .	4
<b>2 Safety</b> . . . . .	5
<b>2.1 Normal use</b> . . . . .	5
2.1.1 Scope of application	
2.1.2 Restriction of use	
<b>2.2 Potential hazards</b> . . . . .	5
<b>2.3 Instructions on safe operation</b> . . . . .	5
<b>3 Operation settings</b> . . . . .	5
<b>3.1 Set up</b> . . . . .	5
<b>3.2 Air and electrical requirements</b> . . . . .	5
<b>3.3 Start up</b> . . . . .	6
3.3.1 PAM 500 K/PAM 500 K Spray	
3.3.2 PAM 500 EK/PAM 500 EK Spray	
<b>3.4 Changing the temperature setting</b> . . . . .	6
3.4.1 PAM 500 K/PAM 500 K Spray	
3.4.2 PAM 500 EK/PAM 500 EK Spray	
<b>4 Operation</b> . . . . .	6
<b>4.1 General</b> . . . . .	6
<b>4.2 Loading the cartridge</b> . . . . .	6
<b>4.3 Applying hot melt glue</b> . . . . .	7
<b>4.4 Removing the cartridge</b> . . . . .	7
<b>4.5 Setting the spray (spray applicators only)</b> . . . . .	7
<b>4.6 Stopping work / end of shift</b> . . . . .	7
<b>4.7 Applying PU hot melt glue</b> . . . . .	7
4.7.1 Stopping work / end of shift	
4.7.2 Long periods of non-use	
<b>4.8 Troubleshooting and remedying faults</b> . . . . .	8
<b>5 Maintenance / Servicing</b> . . . . .	8
<b>5.1 Maintenance intervals</b> . . . . .	8
<b>5.2 Cleaning</b> . . . . .	9
5.2.1 Cleaning the nozzle	
<b>5.3 Nozzle systems</b> . . . . .	9
5.3.1 Changing the extrusion nozzle	
5.3.2 Changing the nozzle adapter	
5.3.3 Changing the spiral nozzle, compression spring and ball	
<b>5.4 Changing the basic setting of the electronic controller</b> . . . . .	9
5.4.1 Switching the temperature range LOW/HIGH (PAM 500 K/Spray)	
5.4.2 Setting the spray air delay	
<b>6 Repairs</b> . . . . .	10
<b>7 Guarantee</b> . . . . .	10

# Explanation

	<b>Danger!</b> Follow these instructions to avoid <b>injuries</b> and/or <b>damage to property!</b>
	<b>Directions!</b> Follow these instructions to avoid <b>malfunctions</b> and/or <b>wrong operation!</b>
	Procedures to be done by user.
	Consequences after adjustments.
(#)	The position numbers refer to the drawings on page 3.

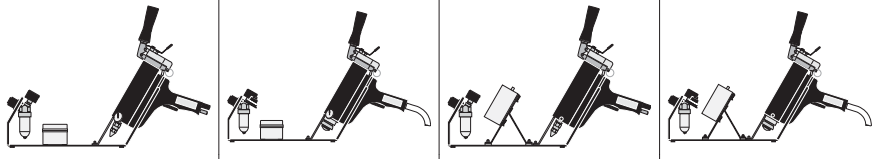


# Arrangement

Supply unit		Applicator			
Power Controls					
<b>A - 500 K / 500 K Spray</b>		<b>B - 500 EK / 500 EK Spray</b>			
POS	Description				
1	Pressure regulator	•	•	•	•
2	Water separator	•	•	•	•
3	Pressure gauge	•	•	•	•
4	Spray air choke	•	•	•	•
5	Rubber foot	•	•	•	•
6	Illuminated push button "ON", red	•	•		
7	Temperature potentiometer	•	•		
8	Protection cap	•	•		
9	Indicator "HEATING", white	•	•		
10	Digital display			•	•
11	Protection cap			•	•
12	Protection cap			•	•
13	Push switch "adjust/temp."			•	•
14	Rotary knob "+/-"			•	•
15	LED "heat", red			•	•
16	LED "power", green			•	•
17	Power switch			•	•
18	Cover handle	•	•	•	•
19	Cover safety clip	•	•	•	•
20	Cover	•	•	•	•
21	Suspension loop	•	•	•	•
22	Handle	•	•	•	•
23	Trigger	•	•	•	•
24	Thermometer	•	•		

# Specifications

## 1 Specifications

<b>Description</b>				
	<b>PAM 500 K</b>	<b>PAM 500 K Spray</b>	<b>PAM 500 EK</b>	<b>PAM 500 EK Spray</b>
<b>Tool no.</b>	WCH 1096	WCH 1074	WCH 1126	WCH 1086
<b>System Components</b>	Applicator, supply unit, tool set, cartridge puller			
<b>Weight of applicator</b>	approx. 1.7 kg (3.7 lb)			
<b>Power requirements</b>	120 V AC / 60 Hz / grounded socket			
<b>Power input</b>	350 watts			
<b>Current input</b>	1.5 A			
<b>Degree of protection</b> (to DIN IEC 34 Part 5)	IP 30			
<b>Protection class</b> (to DIN VDE 0720)	I (grounded terminal)			
<b>Heat control</b>	Electronic			
<b>Heat limitation</b>	Safety temperature controller (500 °F ± 2 °F)			
<b>Operating temperature</b>	LOW range: 70 - 350 °F HIGH range: 210 - 450 °F		120 - 450 °F variable adjustment	
<b>Factory setting</b>	Approx. 240 °F		Approx. 250 °F	
<b>Temperature tolerance</b>	± 2 °F			
<b>Temperature indication</b>	Analog thermometer		Digital with LED display	
<b>Heat up time</b>	Approx. 45-60 min.			
<b>Capacity</b>	1 hot melt cartridge 310 ml (12 oz, size: 1.9" in dia. and 8.5" in length)			
<b>Feed system</b>	Compressed air			
<b>Compressed air supply</b>	8 bar (120 psi) max.			
<b>Operating pressure</b>	3 to 5 bar (15 to 75 psi)			
<b>Protection against excess pressure</b>	Safety valve (reaction pressure: 5.5 bar / 82.5 psi)			
<b>Air consumption</b>	0.35 l (12 oz) per trigger max.	1 l (35 oz) per sec. max.	0.35 l (12 oz) per trigger max.	1 l (35 oz) per sec. max.
<b>Nozzles (standard)</b>	Extrusion nozzle dia. 1.5 mm	Spiral nozzle dia. 1.2 mm	Extrusion nozzle dia. 1.5 mm	Spiral nozzle dia. 1.2 mm
<b>Length of electric cord</b>	3.0 m (9.8 ft)			
<b>Length of compressed air hose</b>	3.0 m (9.8 ft)			
<b>Recommended hot melt glue</b>	PAM® Hot melt glues in aluminium cartridges, 310 ml (12 oz)			

# Safety / Operation Settings

## 2 Safety



### Warning!

This applicator is only to be used to heat hot melt glue and apply it under pressure.

If the instructions and information contained in this operating manual are not observed, or the applicator is used for a purpose other than that for which it was intended, or the applicator is modified and/or used by insufficiently trained personnel, there will be a risk of injury.

### 2.1 Normal use

#### 2.1.1 Scope of application

This applicator is for applying hot melt glues in aluminium cartridges with a capacity of 310 ml (12 oz). The applicators dispense a bead (PAM 500 K/EK) or a spray pattern (PAM 500 K/EK Spray).

#### 2.1.2 Restriction of use

The tool is designed for commercial use.

Only hot melt glues recommended by the manufacturer may be heated up and applied.

### 2.2 Potential hazards



**Risk of burns on hot metal parts, hot cartridge in operation and hot melt glue.**



**Risk of explosion in operations with oxygen or combustible gases!**



**Irritation of the mucous membranes by vapours emitted by hot melt glue. Use in well ventilated areas.**

### 2.3 Instructions on safe operation



**In special situations always wear protective equipment (heat protection gloves, protective goggles).**

Protects against injury during maintenance and repair work.



**Handle the hot cartridge in use only with the cartridge puller (included).**

Protects against burns.



**Protect the applicator against moisture.**

Protects against electric shock.



**Read the technical data sheet for the hot melt glues to obtain proper operating temperature.**

**Only operate in adequately ventilated rooms.**

Protects against possible irritation to the mucous membranes from the hot melt glue.



**Turn off the compressed air supply and electric supply if the applicator is faulty or not operating properly and during any maintenance or repair work.**

## 3 Operation settings

### 3.1 Set up



**We recommend:**

**Return the applicator to its supply unit or hang it up on hanger bracket (21).**

- Place the supply unit on a flat surface where the tool cannot slip (e.g. workbench).
- Firmly anchor the supply unit at the work place by using bolts or screws in place of the rubber feet (5).

### 3.2 Air and electrical requirements



**The compressed air supply must never exceed 8 bar / 120 psi.**

**The compressed air must be free of oil, condensation and acid.**

- If necessary, add a pressure reducing valve with downline safety valve (reaction pressure 8 bar / 120 psi) and, if necessary, add suitable filters to the supply line.
- Connect the air hose to the air line with a quick-disconnect (6 mm / 1/4").



**Make sure electric source is the same voltage indicated on the specification label.**

- Plug the applicator into a grounded socket.

# Operation Settings / Operation

## 3.3 Start up



**As soon as the temperature controller has been switched on, the applicator heats up.**

### 3.3.1 PAM 500 K/PAM 500 K Spray

- Press the red illuminated push button “ON” (6).
- The white “HEATING” indicator (9) lights up and flashes when the preset temperature has been reached.
- ⇒ The thermometer (24) indicates the actual temperature of the applicator.

### 3.3.2 PAM 500 EK/PAM 500 EK Spray

- Press the master switch “Power” (17). A colored dot means “On”.
  - ⇒ The green “power” LED (16) lights up. The red “heat” LED (15) lights up and flashes when the preset temperature has been reached.
- The digital display (10) indicates the actual temperature of the applicator and when the “adjust/temp.” button (13) is pressed it indicates the preset temperature.

## 3.4 Changing the temperature setting

**i Never set the temperature higher than the working temperature of the hot melt glue to avoid charring the glue.**

Switching off, even for a lengthy period, does not change the temperature set. Environmental conditions and electrical fluctuations may cause differences of 2 - 4 °F. It is therefore recommended that the preselected temperature be checked occasionally and adjusted if necessary.

### 3.4.1 PAM 500 K/PAM 500 K Spray

The temperature has been set by the manufacturer to LOW of 240 °F.

- Remove protection cap (8).
- Use a small screwdriver to adjust potentiometer spindle (7) in small steps.
- Read the temperature of the thermometer (24) after a few minutes and readjust if necessary.
- Fit the protection cap back in place.

To switch the temperature range from LOW to HIGH refer to Section 5.4.1.

### 3.4.2 PAM 500 EK/PAM 500 EK Spray

The temperature has been set by the manufacturers to approx. 250 °F.

- Simultaneously press the “adjust/temp.” push switch (13) and turn the knob “+/-” (14) to set the correct temperature.
- Release the knob and button.

## 4 Operation

---

### 4.1 General

- The applicator is ready for operation when the preset temperature has been reached and the hot melt glue has melted.
- A cartridge in the applicator may take at least 45-60 minutes to heat up, to maintain continuous operation it is necessary to use a cartridge preheater (accessory).

**i The cover handle (18) should not be used as a second grip.**

### 4.2 Loading the cartridge

The cartridge is punctured by two pins when it is inserted. The nozzle pin opens the cartridge tip and compressed air flows through the back of the cover into the cartridge to push the plunger.

**i Complete puncture is only achieved if the cartridge has been preheated. Cold cartridges must therefore only be placed in the melt tank loosely and only pressed in after heating up.**

**i On the PAM 500 K/EK the nozzle assembly is not firmly attached to the melt tank. To open the cartridge tip at the center and to protect the o-ring of the nozzle dome the tool must be kept vertical with the nozzle pointing down when the cartridge is being inserted.**

- Place the applicator in the supply unit.
- Heat up the applicator.
- Hold the applicator by the handle with one hand (22).
- Unlock the cover safety clip (19).
- Tilt cover handle (18) towards you and open cover (20).
- Insert a preheated cartridge into the melt tank.
- Using the cover handle firmly press the cover against the cartridge until the pin pierces the cartridge.

# Operation

- Close the cover.



**Always secure the cover safety clip (19) properly.**  
Protection against opening the melt tank unintentionally.

## 4.3 Applying hot melt glue

- Squeeze the trigger (23).
  - You can meter the application quantity by changing the pressure (up to 5.5 bar / 82.5 psi) and/or selecting an appropriate nozzle (accessory).
- ⇒ As soon as you release the trigger (23) the compressed air supply is stopped and the melt tank is vented.

## 4.4 Removing the cartridge

**i** **The nozzle on the applicator must always point up when removing the cartridge, for approx. 1 minute if the cartridge is not completely empty.**

This ensures that hot melt glue will not leak into the melt tank.

- Turn air supply off or disconnect air supply to tool. Turn nozzle facing up approximately 1-2 min.
- Open the cover (see Section 4.2) (nozzle pointed up).
- Position the cartridge puller and remove the cartridge pulling back forwards you.
- Remove any glue that has leaked into tank.

## 4.5 Setting the spray (spray applicators only)

The spray pattern can be changed by regulating the spray air.

- Establish the optimum application spray by adjusting the spray air choke (4) and by test spraying.

Scale value	Spray air
0	without choke (random spray pattern)
10	with choke (extrusion)
From experience, optimum spray air supply is achieved at a value between 2 and 4.	

## 4.6 Stopping work / end of shift

- When stopping work for any length of time or at the end of a shift, always switch the electronic temperature control off.
- Reduce operating pressure to "0" or turn the compressed air supply off.

## 4.7 Applying PU hot melt glue

In the case of PU (polyurethane) hot melt glue, moisture in the air causes a chemical reaction which creates a firm bond between the items being glued together. To prevent the nozzle system from becoming blocked we recommend observing the following rules. Please also refer to our "Polyurethane Hot Melt Glue Product Information".

### 4.7.1 Stopping work / end of shift

- Before switching off the applicator place the nozzle in a bath of paraffin oil.
  - Before resuming operation allow the cartridge to heat up properly for approx. 45-60 minutes.
  - Remove the tip of the nozzle from the bath of paraffin oil and wipe it with a cloth.
  - Squeeze the trigger to remove approx. 1 cm<sup>3</sup> (0.4 ft<sup>3</sup>) of glue.
- ⇒ The applicator is ready for operation again.

### 4.7.2 Long periods of non-use

- Remove the cartridge (see Section 4.4).
  - Insert a preheated cartridge with PAM Cleaner U7488.
  - Squeeze the trigger to remove about half the cleaner to clean out the applicator, then switch off the applicator.
  - Before resuming operation allow the cartridge to heat up properly for approx. 45-60 minutes.
  - Squeeze the trigger to remove the remaining cleaner.
- ⇒ The applicator is ready for operation again.

# Troubleshooting / Maintenance

## 4.8 Troubleshooting and remedying faults

- In the event of a malfunction, first check the compressed air and electric supply.

**i** In the event of a fault in the heating system a safety temperature controller prevents the applicator from heating above 500 °F.

Fault	Possible cause	Remedy	see Section
Nozzle leak	Nozzle valve damaged	<b>PAM 500 K/EK:</b> Change nozzle adapter <b>Spray applicators:</b> Change spiral nozzle, compression spring and ball	5.3.2 5.3.3
Insufficient hot melt glue or none at all is being discharged	Operating pressure too low	Increase (up to 5.5 bar / 82.5 psi)	
	No supply of compressed air	Check supply lines	
	Nozzle system blocked	<b>PAM 500 K/EK:</b> Change conical nozzle and nozzle adapter if necessary <b>Spray applicators:</b> Change spiral nozzle, compression spring and ball	5.3.1 5.3.2 5.3.3
Temperature fluctuates considerably	Fault in the heating system	Check	6
Applicator fails to heat up	Electric lead break	Change	6
	Supply cable break	Change	
	Fault in heating system	Check	
Compressed air escaping from cover	Cover seal defective	Change	
Compressed air escaping from the air maintenance unit	Safety valve activated	Reduce operating pressure	
	Inspection glass cracked	Change	
<b>Spray applicators only</b>			
Spray not perfect	Spray air not set correctly	Adjust spray air choke	4.5
	Nozzle system blocked	Change spiral nozzle, compression spring and ball	5.3.3
Blobs after spray application	Spray after-air not set correctly	Adjust spray air choke	5.4.2

## 5 Maintenance / Servicing



**Before servicing or performing any maintenance work always disconnect the compressed air and electrical supplies. Wearing personal safety equipment (heat protection gloves, protective goggles) increases safety.**

**i** **Before servicing or performing maintenance work on components which come into contact with hot melt glue they must be heated (heat up the applicator or use an external hot-air gun).**

### 5.1 Maintenance intervals

<b>Daily</b>	Empty the water separator on the air maintenance unit
	Check the applicator for leaks, damage, missing parts and loose screws
<b>Weekly</b>	Remove any residue of hot melt or other debris
	Check the o-ring of nozzle pin, change if necessary

### 5.2 Cleaning

# Maintenance / Servicing

- i** Never use strong detergents or ones containing solvents. They may damage components of the applicator. Parts which can no longer be cleaned, particularly those with hot melt glue that has burned or hardened, must be replaced or the applicator returned to the manufacturer or distributor for cleaning or repair.

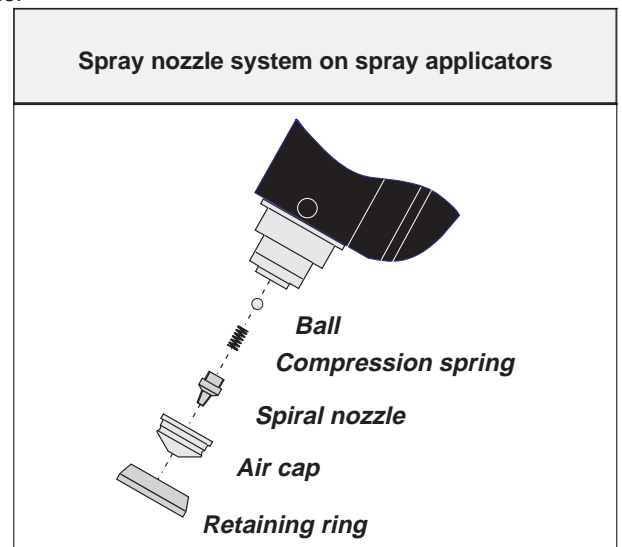
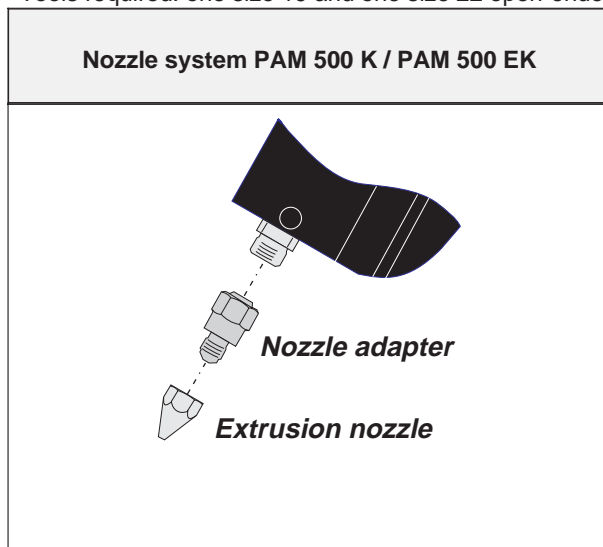
## 5.2.1 Cleaning the nozzle

- In the case of minor external contamination, wipe the nozzle with a rag.
- In the event of clogging, insert a drill bit, needle or piece of wire through the nozzle hole.  
**Caution: Disconnect air supply before doing this operation.**
- In cases of extreme charring replace the nozzle.

## 5.3 Nozzle systems

### 5.3.1 Changing the extrusion nozzle

Tools required: one size 19 and one size 22 open-ended spanner



- Keep the nozzle adapter from moving and unscrew the nozzle.
- Screw the new nozzle on hand-tight and allow the nozzle to heat up for 2 minutes.
- Keep the nozzle adapter from moving and tighten the nozzle until snug. **Caution: do not over tighten**

### 5.3.2 Changing the nozzle adapter

Tools required: two size 22 open-ended spanners

- Remove the cartridge (see Section 4.4).
- Turn off the electrical and air supply after heating tool.
- Unscrew the nozzle (see Section 5.3.1).
- Keep the nozzle block from moving and unscrew the nozzle adapter.
- Reassemble as above but in reverse order.

### 5.3.3 Changing the spiral nozzle, compression spring and ball

Tools required: 1 pin spanner, 1 size 11 open-ended spanner

- Remove the cartridge (see Section 4.4).
- Turn off the electrical and air supply after heating tool.
- Loosen the retaining ring with the pin spanner. **Caution: don't force.**
- Remove the air cap.
- Unscrew spiral nozzle.
- Remove compression spring and ball located behind the nozzle.
- Reassemble as above but in reverse order.

## 5.4 Changing the basic setting of the electronic controller

The electronic controller controls the temperature of the melt tank and also the spray air delay on spray applicators.



**Adjustments to the electronic controller may only be performed by authorized electrical personnel. Before opening controller boxes always switch off the energy supply.**

### 5.4.1 Changing the temperature range from LOW/HIGH (PAM 500 K/Spray)

# Servicing / Repairs / Guarantee

The temperature range jumper is located on the electronic controller board and must be connected to "h" (HIGH) setting.

## 5.4.2 Setting the spray air delay

The spray air delay cleans the nozzle after application of hot melt glue. The spray air delay time has been preset by the manufacturer to approx. 1 second and should only be altered in special cases.

### PAM 500 K Spray

The potentiometer for changing the spray air delay is located on the electronic control board.

### PAM 500 EK Spray

The potentiometer for changing the spray air delay is located behind the protection cap (11).

## 6 Repairs



**Repair work on the electrical equipment should only be performed by authorized electrical personnel using original PAM® spare parts. Repairs must be performed in accordance with DIN standard 57701 and VDE 0701.**

For your safety, send a faulty applicator to the PAM® or your distributor for repair.

## 7 Guarantee

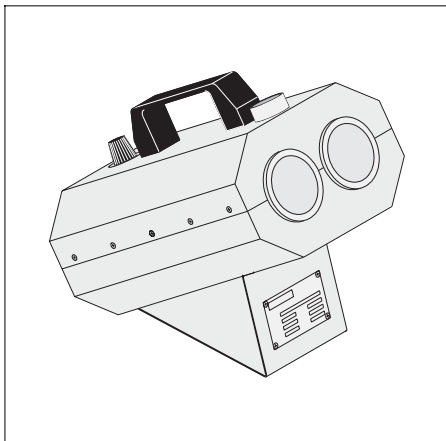
This equipment was designed and manufactured according the latest technology. We guarantee the original buyer proper function, material and workmanship for a period of 6 months after delivery. Normal wear and tear excluded.

The guarantee is null and void when improper handling, use of force, repair by third parties and use of unauthorized parts can be established.

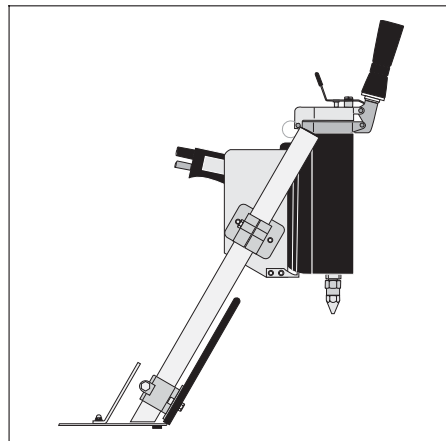
The guarantee extends to either repair or replacement at the manufacturer's option.

Please refer to our Standard Terms and Conditions of Sale.

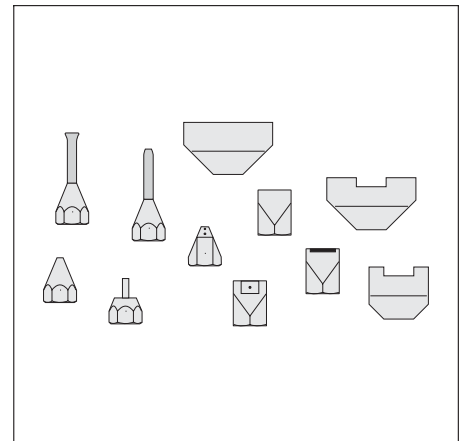
# Accessories



Cartridge preheater



Stand



Quick exchange nozzles

# PAM®

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Division of BUEHNEN Group, Germany

P.O. Box 669063, Charlotte N.C. 28266  
2120 Gateway Blvd, Charlotte N.C. 28208  
Telephone: (704) 394 - 3141  
FAX: (704) 394 - 9339

Distributor