

Operating Instructions for Hot Melt Applicator PAM Powerline Extrusion - PAM Powerline Spray



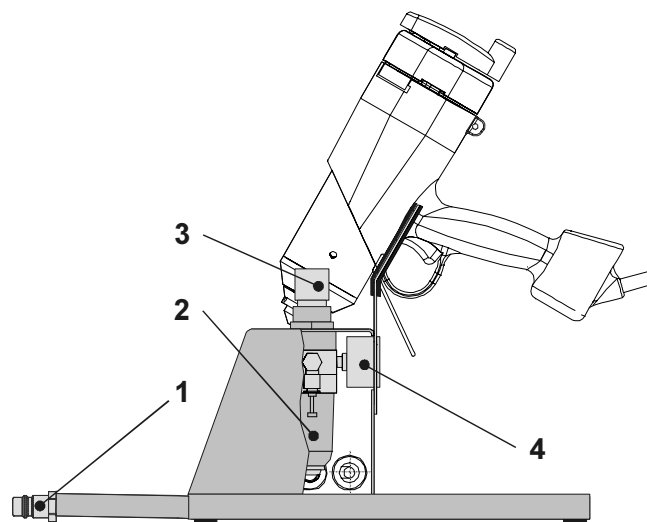
*Read these instructions carefully before putting into service! Keep them for future use!
Adherence to these operating and safety instructions and all statutory regulations is the responsibility
of the operator*

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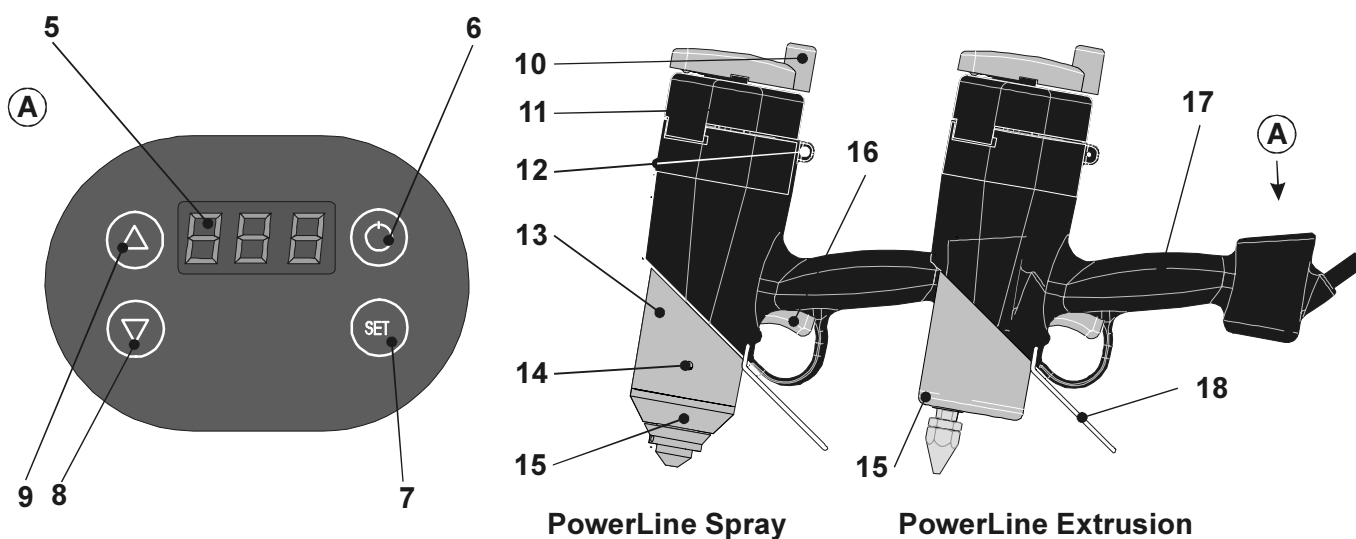
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Arrangement

Working bracket



Applicator



POS	Description
1	Compressed air connection
2	Water separator
3	Pressure gauge
4	Pressure regulator
5	Digital display
6	Start/Stop-button
7	Set-button
8	Down-button
9	Up-button

POS	Description
10	Lever
11	Closure cap
12	Suspension point
13	Protection cap
14	Spray air choke
15	Protection cap
16	Trigger
17	Handle
18	Stand hoop

Specifications

1. Specifications

Description	PowerLine Extrusion	PowerLine Spray
Part no.	H206600	H206700
Scope of supply	Applicator, tool set, working bracket/workstation (optional)	
Weight of applicator	approx. 3.09 lbs / 1.40 kg	approx. 3.74 lbs / 1.70 kg
Power requirements	120 V AC / 60 Hz	
Power input	600 watts	
Current input	5 A	
Degree of protection (acc. to DIN IEC 34 T5)	IP 30	
Protection class (acc. to DIN VDE 0720)	I (safety earth terminal)	
Heat control	electronic	
Heat limitation	Safety temperature controller (500 °F / 260 °C ± 11 °C) limiting thermostat	
Operating temperature	100 °F to 410 °F / 40 - 210 °C (variable adjustment)	
Temperature tolerance	± 2 °F	
Factory adjustment	350 °F / 180 °C	
Temperature indication	Digital by LED display	
Automatic temperature reduction system (ACE)	The temperature is reduced by 100 °F / 40 °C after operation break of 30 minutes	
Heat up time	Approx. 3 - 4 min.	
Melting capacity (according to hot melt type)	For plugs: 7.5 lbs/h / 3.2 kg/h For granulate: 2.87 lbs/h / 1.3 kg/h	
Capacity melt tank	200 ml	
Feed system	Compressed air	
Compressed air supply	145 psi / 10 bar max. (maintenance unit with quick-action connector)	
Operating pressure	15 to 87 psi / 1.5 to 6 bar	
Protection against excess pressure	Pressure limitation (reaction pressure) 87.2 psi / 6 bar	
Air consumption (at 87 psi operating pressure)	1 l per trigger	max. 1 l per second
Nozzles (Standard)	Conical nozzle dia 1.5 mm	Spiral nozzle dia 1.5 mm
Length of supply line with electric and pneumatic connection	9.84 ft / 3.0 m	
Recommended hot melt adhesive	BÜHNEN-Hot melt adhesives in plugs or granulate	

Safety / Operation settings

2. Safety

Warning!

The applicator is used to heat hot melt adhesive 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.

The maximum temperature and the maximum permissible operating pressure may not be exceeded for safety reasons!

2.1 Normal use

2.1.1 Scope of application

Applicator to heat and apply metered quantities of thermoplastic materials (such as hot melt adhesives or waxes) in form of bead (PowerLine) or spray application (PowerLine Spray).

2.1.2 Restriction of use

The tool is designed for commercial use.

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

The applicator may only be handled and operated with the nozzle pointing downwards.

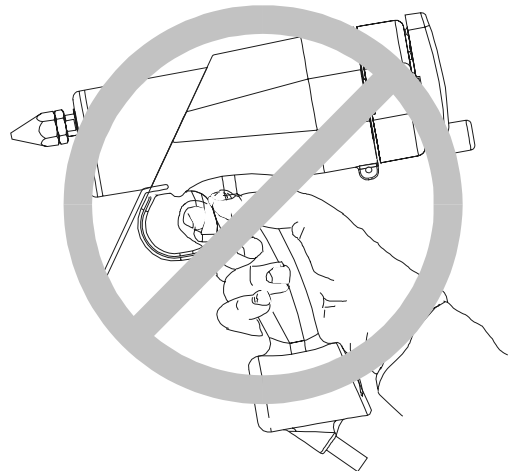
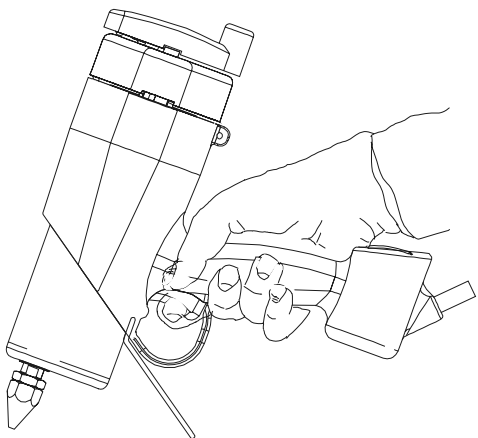
2.2 Potential hazards

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

Risk of explosion in operation with oxygen or combustible gases!

Irritation of the mucous membranes by vapours emitted by hot melt adhesive.

2.3 Instructions on safe operation



The applicator may only be used with the nozzle pointing downwards.

Do not overfill the melt tank (max. level = 1 inch below top).

If the heated applicator is tilted and/or the tank is overfilled, the hot melt adhesive can enter the ventilation pipe. This may cause malfunctions and may result in injury.

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

Protection against injury during maintenance and repair work.

Protect the applicator against moisture and wetness.

Protection against electric shock.

Observe the instruction sheet for the hot melt adhesive.

Only operate in adequately ventilated rooms.

Protection against possible irritation of the mucous membranes by the hot melt adhesive.

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

3. Operation settings

3.1 Setting up

Return the applicator to its working bracket or suspend it using the suspension point (12).

Never lay the applicator down in flat position!

Place the supply unit on a flat surface where the tool cannot slip (e.g. workbench).

Operation settings

3.2 Connecting

The pressure of the compressed air supply must never exceed 145 psi.

The compressed air must be free of moisture and acid.

If necessary, fit a pressure reducing valve with inline safety valve (reaction pressure 145 psi) and add suitable filters to the supply line.

3.2.1 with appliance bracket/stand

Connect the compressed air hose to the compressed air connection (1) with a quick-action release connector (6 mm).

Set the operating pressure (see pressure gauge, 3) initially to 58 psi / 4 bar using the pressure regulator (4).

3.2.2 with separate pressure reducing valve

Connect the compressed air hose to the pressure reducing valve and the pressure reducing valve to a quick-action release connector.

Set the operating pressure initially to 58 psi / 4 bar using the pressure regulator.

Make sure the main voltage is the same as the working voltage indicated on the maker's plate.

Plug the applicator into a 120 V grounded receptacle.

3.3 Switching on

As soon as the start/stop-button (6) has been pressed, the applicator heats up.

Press the start/stop-button (6) for at least 1 second.

The digital display (5) lights up and the left decimal dot flashes until the target temperature has been reached.

The digital display (5) indicates the actual temperature of the applicator. When the set-button (7) is pressed, the preset temperature is indicated.

3.4 Settings at the temperature controller

3.4.1 Setting of control parameters in the first operating level

Never set the temperature higher than the working temperature of the hot melt adhesive to avoid burning it.

The temperature has been set by the manufacturer to approx. 356°F / 180 °C.

Press set-button (7).

Using the Down (9) and Up (8) buttons, adjust the pre-set temperature showing on the digital display (5) to the level recommended by the adhesive manufacturer.

Switching off, even for a long period, does not change the temperature set. Environmental conditions (as influence of strong high frequency interference / transmitter stations) and electrical fluctuations may cause differences of 2 - 4 °F. It is therefore recommended that the preselected temperature is checked occasionally and adjusted if necessary.

3.4.2 Setting of control parameters in the second operating level

By pressing the Up and Down button (8/9) for at least 4 seconds you will enter a list for control parameter (starting with P1). With the Up button you can browse the list upwards and with the Down button downwards again.

Pressing the set-button (7), the value of the concerning parameter. By pressing additional the Up and Down button the value will be changed. After releasing all buttons the new value will be stored constantly. If no button is pressed longer than 60 seconds, the temperature controller is set to its basic settings.

Parameter	Function specification	Setting range	Standard value	Customer value
P1	Scheduled value reduction	1...100 K	40,0 K	
P2	Waiting time until reduction	1...999 minutes	30 min	
P11	Working hour meter, „1 to 999“			
P12	Working hour meter, „1000 to 9999“			
P13	Quantity of triggering, „1 to 999“			
P14	Quantity of triggering, „1000 to 9999“			
P19	Button locking (Altering of value blocked)	0: Not locked 1: Locked	0	

P1 Scheduled value reduction

If the hot melt applicator is not in use for a longer period, the temperature controller switches automatically to operation with scheduled value reduction. The temperature controller is set to a value, which is less than the factory adjustment by the reduction, adjusted at P1 (Reduced value = S1 – P1).

The temperature controller switches back to normal operating value S1, if either the Up and Down button will be pressed or if the trigger (16) will be squeezed.

Operation settings / Operation

P2 Waiting time until reduction

The temperature controller switches automatically to operation with value reduction, if the hot melt applicator is not in use for the time adjusted here.

P19 Button locking

Button locking allows the blocking of operating buttons. When locked, alteration of factory adjustment by buttons is impossible. When trying to do so, the report “—” will be shown in the display.

3.4.3 Status reports and malfunction display

Reading	Reason	Action
Decimal point left flashes	Heating activated	heating will be finished, if the scheduled value is reached within less than 2 degree
Decimal point right lights up	Scheduled value reduction activated	see parameter P1 and P2
ERR	Exceeding the temperature noted in parameter P31	let cool down
F1L	Sensor failure, short circuit	Check sensor Fault indication will be shown even after remedy of fault until it is acknowledged with the Down button
F1H	Sensor failure, sensor break	Check sensor Fault indication will be shown even after remedy of fault until it is acknowledged with the Down button
--	Button locking activated	see parameter P19
EP	Loss of data in the parameter memory	Repair of the temperature controller

4. Operation

4.1 Filling

Only open the applicator when it is heated!

Protection against damage to the cover seal

Risk of burns on hot metal parts.

Place the applicator in the supply unit.

Heat up the applicator.

Hold the applicator by the handle (16) with one hand.

Turn the lever (10) with the other hand clockwise and open the closure cap (11).

Do not overfill the melt tank (max. level = 1 inch below top).

Hot melt adhesives expand with increasing temperature.

Place hot melt adhesive into the melt tank.

Close the closure cap (11).

4.2 Applying and metering hot melt adhesive

Ensure that there is always sufficient hot melt adhesive in the melt tank to avoid "running empty".

Heat up the applicator for approx. 5 minutes.

Pull the trigger (15).

You can meter the application quantity by changing the pressure (up to 87 psi / 6 bar) and/or selecting an appropriate nozzle size.

As soon as you release the trigger (15) the compressed air supply is stopped and the melt tank is vented.

4.3 Setting the spray (PowerLine Spray)

The spray pattern can be altered by adjusting the pressure regulator (5).

Establish the optimum application spray by adjusting the spray air choke (14) in the protection cap (13).

Adjusting clockwise decreases spray air pressure, adjusting counterclockwise increases spray air pressure.

Operation

4.4 Automatic temperature reduction system ACE (AntiCharElectronic)

To protect the hot melt adhesive from unnecessarily high temperature the operating temperature is automatically reduced by 104°F / 40 °C to a stand-by level if the applicator is not used for approx. 30 minutes.

The right decimal dot of the digital display (5) flashes.

Squeeze the trigger (15) or push the UP and DOWN buttons (9/8) to heat up to operating temperature.

4.5 Interruption of work / End of shift

Press the start/stop-button (6) to switch off the temperature controller.

Reduce with the pressure regulator (3) the operating pressure to "0" or turn off the compressed air supply.

4.6 Troubleshooting and remedying faults

In the event of malfunctions first check the compressed air and power supply.

In the event of a fault in the heating system a safety temperature controller prevents the applicator from heating up over 500 °F (± 11 °C).

Fault	Possible cause	Remedy	see Section
Nozzle leaks	Nozzle valve damaged	PowerLine Extrusion: Clean or change nozzle foot	5.3.2
		PowerLine Spray: Clean or change spiral nozzle, dowel pin, compression spring and ball	5.3.4
Insufficient hot melt adhesive or non at all is being discharged	Operating pressure too low	Increase (up to 87 psi)	
	No supply of compressed air	Check supply lines	
	Nozzle system blocked	PowerLine Extrusion: Change conical nozzle and nozzle foot if necessary	5.3.1 5.3.2
		PowerLine Spray: Clean or change spiral nozzle, dowel pin, compression spring and ball	5.3.4
	Processing temperature too low	Increase temperature	3.4.1
Compressed air escaping from cover	Cover pressure not enough	Increase the cover pressure	5.4
	Cover gasket soiled	Clean sealing surface	
Compressed air escaping from the air maintenance unit	Connections loose	Check connections	
	Inspection glass of water separator (2) cracked	Change	
only PowerLine Spray			
Spray not perfect	Air setting incorrect	Adjust air setting	4.3
	Nozzle system blocked	Clean or change spiral nozzle, dowel pin, compression spring and ball	5.3.4

5. Maintenance / Servicing

Servicing and maintenance work, which afford the opening of the housing, may only performed by competent electrician personell. Before servicing or performing any maintenance work always turn off the compressed air supply and powersupply. Wearing personal safety equipment (heat protection gloves, protective goggles) increases safety.

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

Troubleshooting

5.1 Maintenance intervals

Daily	Empty the water separator (2) on the air maintenance unit
	Check the applicator for leaks, damage, missing parts and loose screws
Weekly	Remove any residue of hot melt adhesive and other dirt

5.2 Cleaning

Never use strong detergents or ones containing solvents. They may damage components of the applicator. We advise, to use petroleum for the cleaning of the housing. Parts which can no longer be cleaned, particularly on account of hot melt adhesive which has burned or hardened, must be completely changed or the applicator must be returned to the manufacturers or dealer for cleaning. Remove any residual hot melt adhesive and other dirt mechanically, e.g. with a rag, soft brush, wood spatula or the like.

5.2.1 Cleaning the nozzle

In the case of minor external soiling wipe the nozzle with a rag.

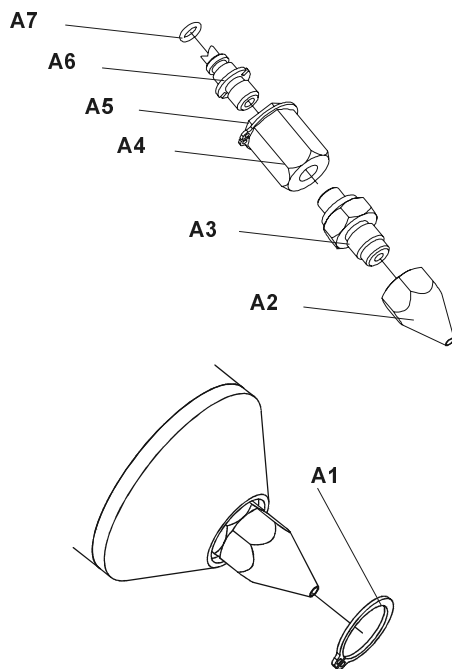
In the event of clogging insert a drill bit, needle or piece of wire into the nozzle hole.

In cases of stubborn dirt change the nozzle (see Section 5.3.1 and 5.3.4).

5.3 Nozzle systems

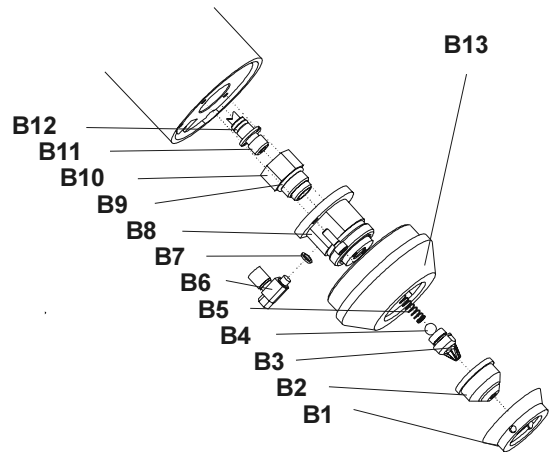
PowerLine Extrusion

Fig 1



PowerLine Spray

Fig 2



5.3.1 Changing the conical nozzle (PowerLine Extrusion - only heated up - Fig 1)

Tools required:

2 size 19 open-ended spanner,

1 spring-ring pliers

Remove the cartridge.

Remove the circlip (A1).

Remove the nozzle kit (part A2 to A7) out of the applicator.

Prevent the nozzle foot (A3) from moving and unscrew the conical nozzle (A2).

Screw the new nozzle (A2) on hand-tight and allow the nozzle to heat up for 2 minutes after mounting the applicator vice versa.

Keep the nozzle foot (A3) from moving and tighten the nozzle (A2) until snug. Do not overtighten!

For applicators with loose nozzle kit first remove the circlip (A1), after this the complete cartridge with screwed on nozzle kit. Reassemble as above but in reverse order.

Maintenance / Servicing

5.3.2 Changing the nozzle foot (PowerLine Extrusion - only heated up - Fig 1)

Tools required:

2 size 19 open-ended spanner,

1 spring-ring pliers

Remove the cartridge.

Remove the circlip (A1).

Remove the nozzle kit (part A2 to A7) out of the applicator.

Unscrew the conical nozzle (A2) (see Chapter 5.3.1).

Keep the valve seat (A4) (size 19) from moving and unscrew the nozzle foot (A3).

Reassemble as above but in reverse order.

For applicators with loose nozzle kit first remove the circlip (A1), after this the complete cartridge with screwed on nozzle kit. Reassemble as above but in reverse order.

5.3.3 Changing the nozzle setting (PowerLine Extrusion)

The position of the conical nozzle can optionally be swivelled around the center line of the melt tank.

Tools required:

1 size 6 Allen key,

1 size 12 open-ended spanner

Heat up the tool for about 15 min. to 338°F / 170°C (the tool should be thoroughly heated).

Turn off the compressed air supply.

Loosen the Allen screw (A5) in the protection cap (A4) for half a turn.

Turn the valve seat (A6) by means of the open-ended spanner to the desired direction.

Tighten the Allen screw (A5) again.

5.3.4 Changing the spiral nozzle, compression spring and ball (PowerLine Spray - Fig 2)

Tools required:

1 hook wrench,

1 size 11 open-ended spanner,

1 size 32 open-ended spanner or a pipe wrench

Ensure that there is no cartridge in the melt tank before changing.

Turn off the compressed air supply.

Undo retaining ring (B1) without using force with the applicator **heated up**.

Remove the protection cap (B13) and the air cap (B2).

Unscrew spiral nozzle (B3) by the size 11 open-ended spanner, hold nozzle block (B8) by the size 32 open-ended spanner.

Compression spring (B5) and ball (B4) are located behind the nozzle.

Reassemble as above but in reverse order.

5.4 Increasing the cover pressure (only when heated up - Fig 3)

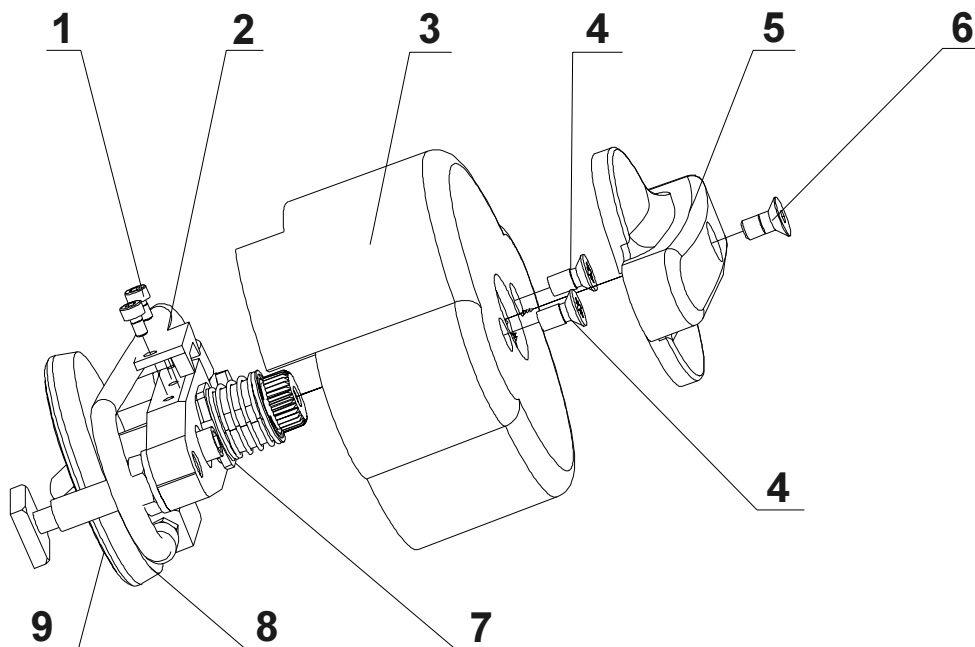


Fig 3

If air leaks through cover, the lid pressure has to be increased.

Maintenance / Servicing / Repairs

Tools required:

1 size 20 open-ended spanner,

1 size 3 allen key,

1 size 2.5 allen key,

1 four-way wheel brace size 2

Turn the lever (5) to open position.

Remove the countersunk screw (6) from the lever.

Remove lever (5).

Remove the countersunk screws (4) and the cover (3).

Loosen screw (1) and push back locking device (2).

Adjust thread insert (7) of tightening spindle clockwise for 1/6 turn.

Check whether the cover (8) closes perfectly by reinstalling the handle (5) and pressurizing the tool (Check that the thread insert does not turn).

Reassemble in reverse order. Check that the lever is adjusted horizontal in open position when inserted.

Tighten screws (1) of locking device (2) after adjustment.

If the leak cannot be rectified, change the cover seal (9).

5.5 Changing the cover seal

If the change of cover pressure will not solve the leak, the cover seal has to be changed.

Tools required:

1 small screw-driver

Remove the cover gasket (9) by means of the screw-driver.

Renew the cover gasket (9).

6. Repairs

Repair work may only be performed by authorized personnel using original spare parts.

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

For your safety, send a faulty applicator to the manufacturer or your supplier for repair.

PAM Fastening Technology, Inc.
Division of BÜHNEN
Charlotte, N. C. USA
Telefon (704) 394 31 41
Telefax (704) 394 93 39
www.pamfast.com
sales@pamfast.com