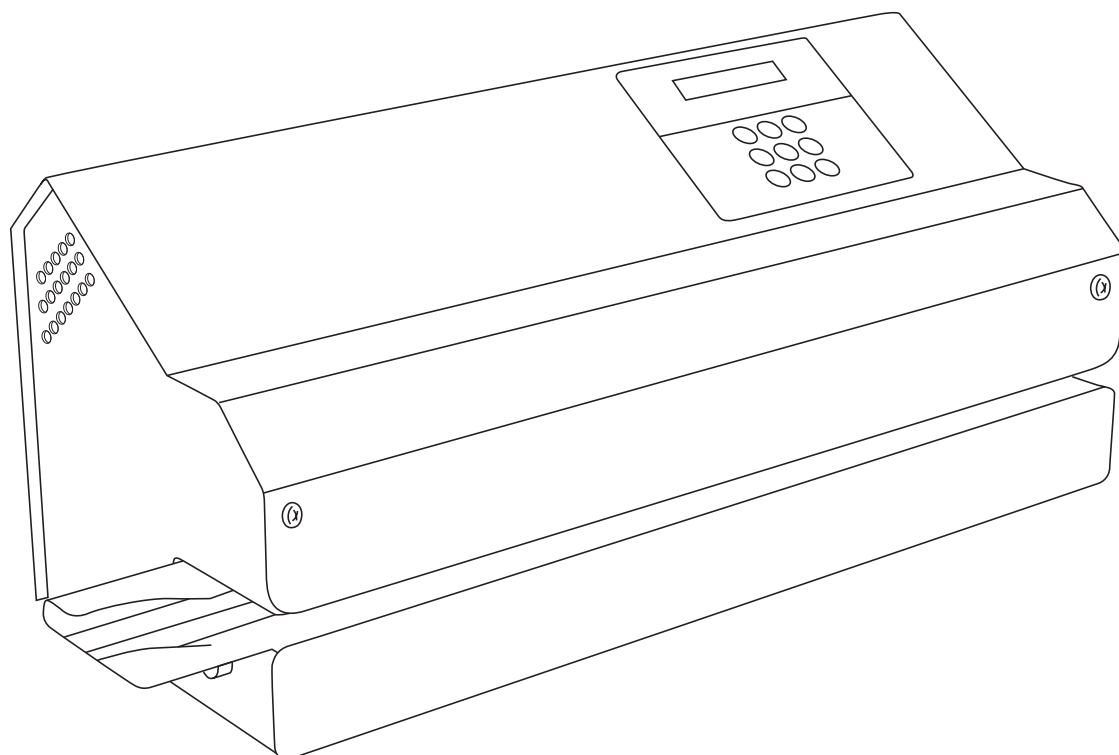


MEDICAL DEVICE POUCH SEALER

MD-850 SERIES

OPERATING INSTRUCTIONS



van der stahl®
SCIENTIFIC

www.vanderstahl.com

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ENGLISH

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Introduction

First we would like to thank you for purchasing the MD 850 DC hawomed sealing machine. These instructions include information on the machine, its function and operation.

! Please read these operating instructions thoroughly before using the machine so that you will be familiar with the capabilities of the machine and can utilize its features to the optimum.



Always keep these instructions in the vicinity of the machine.



Important note:

This device is a packaging machine for the processing of thermoplastic films and composite films according to the thermal – bonding or sealing process.

In this respect , please pay attention to the “Intended use” chapter in the operating instructions.

According to the intended use , the CE symbol was affixed on the basis of the EU Directives named below:

89/336/EEC, 98/37/EC

and 73/23EEC amended by 93/68EEC.

The 93/42EEC Directive is not applicable to bonding and sealing devices.

The limit values stipulated in IEC 60601 – 1 cannot be applied in case of the electrical repetition tests.

The manufacturer will not assume any liability for damage caused by tests according to standards which are not listed in the declaration of conformity .

Note

Since we continuously improve our products we reserve all rights to modify these operating instructions and the functions described therein.

We make all possible efforts to keep these instructions free of errors and complete. If you note any errors or unclear points please advise us.

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Guide to these Operating Instructions

Before Starting	This chapter contains information on the functions of the machine and instructions for handling and installation. BE SURE TO READ!
Basic Functions	Adjustment and operation of the machine are explained here.
Troubleshooting and Maintenance	Instructions for finding causes of malfunctions and eliminating them. This chapter includes information on the required maintenance, parts subject to wear and replacement parts.
Technical Data	Shows the interrelationship between various item numbers, the circuit and diagram plans and machine specifications.

Intended Use

The MD 850 machine is intended for commercial and industrial applications and should be used only for the intended purpose.

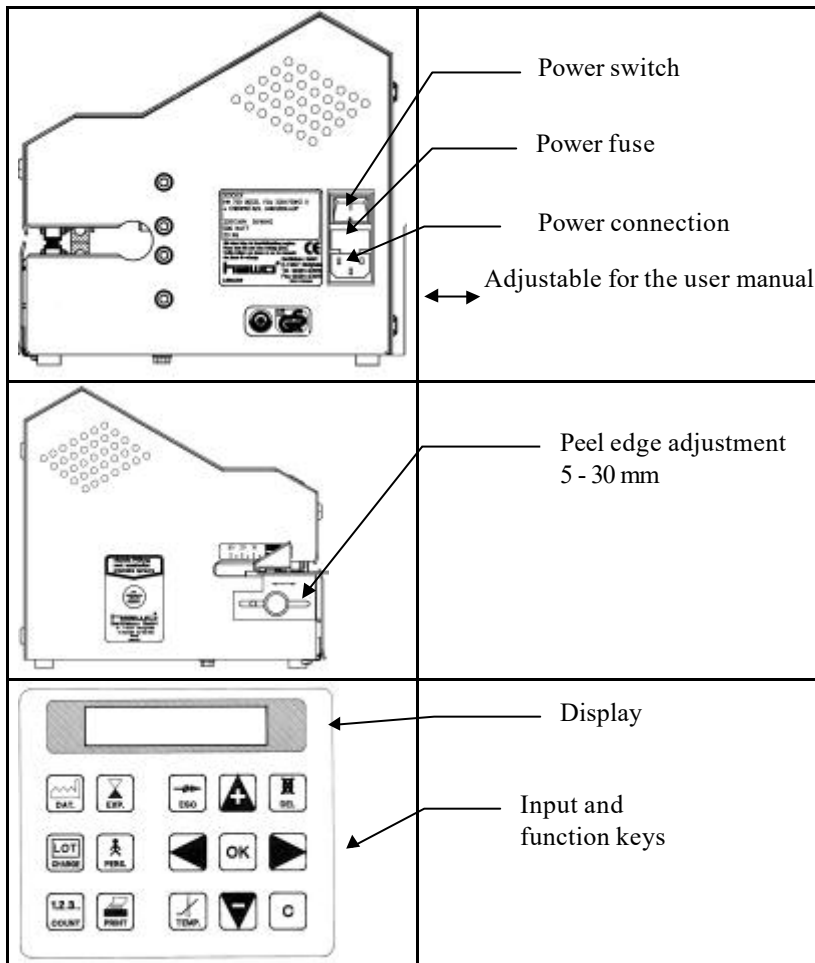
The MD 850 machine is a sealing machine for sealing sterilization packages consisting of paper, paper laminate foil or Tyvek foil.

! **It is not suitable** for sealing pure polyethylene foils, soft PVC foils, hard PVC foils, polyamide foils or polypropylene foils.

The machine capacity depends on the characteristics of the sealing material used.

MD 850	Before Starting	3
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Set-Up and Function



Sealing and Printing Operation Sequence

1. After inserting the sterilization package switch on transport.
2. The sterilization package is then transported and the area of the sealing seam is heated to the sealing temperature set on the upper and lower heating dies.
3. The hot seam is pressed together by the sealing roller sealing it.
4. The printing operation is activated and the activated print data is printed onto the sealed package.
5. The finished sterilization package is transported to the discharge side.
6. If more packages to be sealed are not fed in the transport mechanism shuts off after approx. 30 s.

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General safety instructions



The device must not be installed or operated by persons under 14 years of age.

The device must not be operated unattended.

Turn off the device or disconnect the power cord when it is not in use.

Installation



Do not install or operate the machine in explosion hazard areas.



Use only power sockets with protective ground.



Set up the machine only in dry areas.
Heavy dust, vapor, dripping or spraying water have a negative effect on the machine functions.



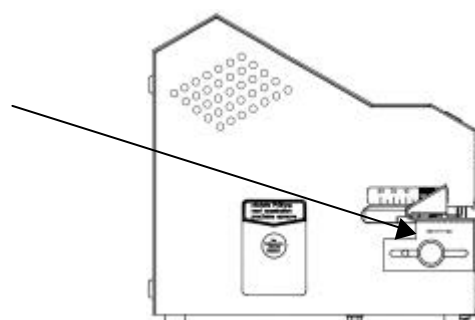
Always ensure that the operating power corresponds to the specifications on the machine rating plate.



Please choose a socket where the line power is stable.



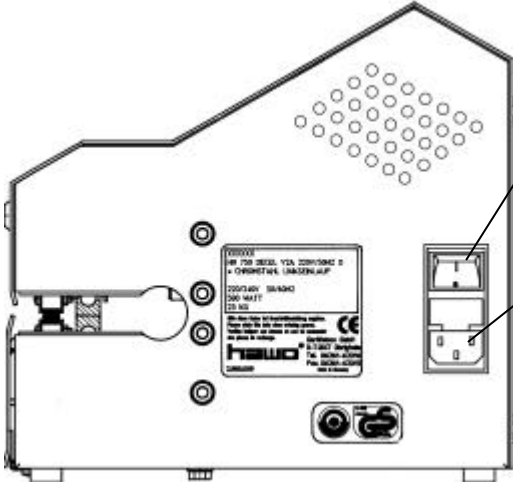
Please do not transport device on the peel edge setting!



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MD 850	Before Starting	3
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Start-Up

● Plug power cable into power socket on machine ● Insert plug into wall socket ● Switch on machine with power switch	 Power switch Switch connection
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FUNCTION		DISPLAY
Machine switched on Self-test runs for approx. 30 s		Please wait
Display for approx. 5 seconds: V2.8 = Program version 956579 = Machine number		Control 850 V2.8 956579
If maintenance deadline is exceeded	Acknowledge maintenance message  OK Perform maintenance	MAINTENANCE
Display of date, time Actual temperature. Set temperature		17-02-00 14:30 025°C Nominal temp 140°C
After 5 minutes is the set temperature reached Machine is ready for operation		17-02-00 14:35 140°C

MD 850	Basic Functions	4
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Programming Aids

FUNCTION	KEYS	DISPLAY
INPUT AIDS Cursor control Press - cursor right - key once	 Cursor left Cursor right   1x	100°C ^ Cursor flashes at 1st digit 100°C ^ Cursor flashes at 2nd digit
INPUT AIDS Changing numbers and Letters Press key – position +1 - once	 Position +1 Position -1  1x 	100°C ^ 1st digit is number 1 200°C ^ 1st digit is number 2
INPUT AIDS Return to previous menu point without activating entry		
INPUT AIDS Activate input		
INPUT AIDS Space at selected point Set piece counter to 0		

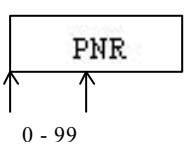
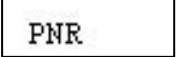
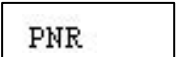
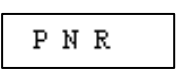
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MD 850	Basic Functions	4
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Configuration

FUNCTION	KEYS	DISPLAY
CONTRAST SETTING	 →    Contrast ↑ Contrast ↓	display - contrast
DATA INPUT Selection: Language, symbols, temperature unit Language: German, English, French, Spanish, Italian, Finnish, Swedish Symbols: yes/no Temperature unit: C / F	 →   Language selection   yes / no   Celsius / Fahrenheit 	set language GB pictogramm NO temperature unit C

Printer Set-Up

FUNCTION	KEYS	DISPLAY
PRINTER SET UP	 →    Yes / No	printer set up YES
Printing direction 0°  180° 	  0 / 180	print out 0
Start printing 0 - 99 mm  0 - 99	Input Start printing 	distance 00 0-99mm
Character width 0 - 5  	Input Character width 	character width 0 0-5
Character interval 0 - 5  	Input Character interval 	character distance: 0 0-5

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Data Input

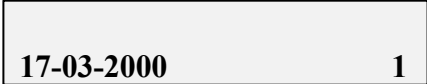
FUNCTION	KEYS	DISPLAY
TEMPERATURE Nominal temperature input 1 150 – 220 °C / 302 - 428 °F 2 120 - 150 °C / 248 - 302 °F 3 80 - 120 °C / 176 - 248 °F	   Input Temperature 1,2,3 	nominal temp. 175°C 1
DATA INPUT Date and time Input of 6 different date Formats 1 dd-mm-yyyy 2 mm-dd-yyyy 3 yyyy-mm 4 mm-yyyy 5 yyyy 6 yyyy-mm-dd	   1,2,3,4,5,6  Input date, time 	format date & time DD-MM-YYYY DD-MM-YY hh:mm 17-02-2000 08:57
DATA INPUT Expiration date Enter 3 differnt expiration dates, ex works: 1= Date + 1 Month 2= Date + 3 Month 3= Date + 6 Month	  1,2,3   Input Expiration date	DD-MM-YYYY 17-03-2000 1
DATA INPUT Charge number 10-digit, alphanumerical	  Input Charge number	1234567890
DATA INPUT Personnel number 20-digit, alphanumerical	  Input Personnel number	0987654321
DATA INPUT Piece counter 7-digit, numerical	  Input Piece Counter	piece counter 1234567
DATA INPUT Text 20-digit, alphanumerical	  Input Text	text input HAWO Gerätebau GmbH
DATA INPUT CE Information 20-digit, alphanumerical	   Input CE information	CE -info EN 980

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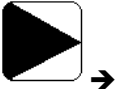
Data Activation/ Deactivation

FUNCTION The print sequence is predefined, this means the individual information like Sterlization date Expiry date Charge number Personnel number Piece counter Text CE Symbol get always print in the same sequence	Print: Sterlization date, Expiry date, Personnel number  17-02-2000  17-03-2000  Miller Print: Sterlization date, Personnel number  17-02-2000  Miller
---	--

FUNCTION	KEYS	DISPLAY
PRINT Sterilization date	Print  DAT.  Do not print  DAT. 	 17-02-2000
PRINT Expiration date Selection of 3 different expiration dates	Print  EXP.  Do not print  EXP.   1,2,3 	 17-03-2000 1
PRINT Charge number	Print  OK  Do not print  DEL	 1234567890
PRINT Personnel number	Print  PERS.  Do not print  PERS. 	 0987654321
PRINT Piece counter	Print  OK  Do not print  DEL	 piece counter 12345
PRINT Text	Print  OK  Do not print  DEL	 text input HAWO Gerätebau GmbH
PRINT CE character	Print  OK  Do not print  DEL	 CE -info CE character

MD 850	Basic Functions	4
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Special functions

FUNCTION	KEYS	DISPLAY
PRINT Printer OFF/ON		17-02-2000 14:30 180°C printer off
DISPLAYS Absolute part counter	  	absolute p. counter 1234567
DISPLAYS Operating time counter	  	operating time 000053 h 25 min

ENGLISH

MD 850	Basic Functions	4
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Operation

Sealing Operation

- Adjust peeling edge width
After loosening the arrest the peeling edge can be adjusted infinitely between 5 mm and 30 mm by moving the plate.
- Insert sterilization package
The drive is switched on automatically.
- Removed sealed sterilization package and allow to cool briefly.



Check strength by tearing open seal.

If unsealed points are present increase the sealing temperature. If the paper discolors or the foil peels off the temperature is too high.



Determine suitable sealing temperature with sealing tests.

Validation – „Seal Check“

Checking of the sealing parameters: temperature, pressing –on pressure and sealing time by means of “SEAL CHECK”

This test should be performed before the daily working process and should be documented by filing the print out.

Additional, visual inspection of the sealing seam with Seal Check

Prior to the test, the device must be ready for operation and the temperature must have been reached.

Device is ready for operation Specified nominal temperature Has been reached	Activate SEAL CHECK 	Peel test No
	SEAL CHECK 	Seal check
Introduce sterilisation packaging, width: 200 mm	 Date Time Temperature Pressing-on pressure Sealing time Name	

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Troubleshooting Chart

Malfunction	Possible cause	Remedy
Machine cannot be switched on No data on display	Power connection Power cable not plugged in Power cable defective Power fuse Control board Display board	Check power connection, if Necessary connect to different socket. Replace power cable. Replace power fuse ! If fuse blows again always have machine checked. Replace control board Replace display board
Machine does not heat up	Nominal temperature too low Temperature limitation active Temperature sensor Heating cartridge Control board	Increase nominal temperature Reset temperature limiter by pressing in pin ! If temperature limiter trips again always have machine checked Replace temperature sensor Check heating cartridges, replace if necessary Replace control board
No transport	Motor sensor Front flap not closed Front flap - sensor Transport belt Damaged No transport Motor Control board	Replace light barrier Close front flap Replace front flap sensor Replace transport belt Check belt tension Replace motor Replace control board

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Troubleshooting Chart

Malfunction	Possible cause	Remedy
Material feed not uniform or loud running noise	Transport belt guide	Replace Teflon belt on guide die
	Transport belt	Replace transport belt
	Damaged	Check belt tension
	No transport	Replace motor
Seal does not hold	Motor	
	Temperature too low	Increase temperature
	Pressure too low	Readjust pressure of sealing roller or replace sealing roller
	Sealing die Distance between the sealing dies too great	Set distance between the sealing dies to 0.5 mm
Sealing seam distorted	Pressure too high	Loosen upper guide die and readjust downward
Paper side of package discolored or side fold shrunk	Temperature too high	Reduce temperature
No imprint or imprint incomplete	Programming Start of print not correctly adjusted	Reprogram start of print
	Ink ribbon	Ink ribbon not correctly installed Replace ink ribbon
	Printer head	Replace print head
	Control board	Replace control board
Imprint too weak	Ink ribbon	Replace ink ribbon.
	Print head	Readjust print head.
	Paper hold-down	Replace pressure spring for paper hold-down
Keyboard does not work	Keyboard	Check keyboard connector for good contact. Replace keyboard
	Display board Control board	Replace display board. Replace control board

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Warranty

We assume a 24-month factory warranty for material and labor on all of our equipment corresponding to our general warranty terms for any proven defects.

The equipment or parts thereof will be repaired or replaced as required at no cost.

Please advise of warranty claims within 8 days.

The warranty does not apply to transport damage to improperly packed equipment shipped to the supplier or manufacturer as a result of guarantee claims.

When processing guarantee claims we reserve all rights to make technical modifications in the interest of technical progress and improvement of our equipment.

Recognition of a warranty claim does not increase the total warranty period.

Warranty claims do not entitle the claimant to withhold payments in full or in part.

We assume no liability for damage resulting from the following causes:

Unsuitable or improper use, incorrect installation or start-up, erroneous operation, incorrect or careless operation, natural wear, use of unsuitable operating agents, chemical, electro-chemical or electrical effects.

Moreover, any modifications or repair work accomplished improperly by the operator of the equipment or third parties without previous approval by Van der stahl Scientific are excluded from any type of warranty. The same applies if genuine Van der stahl Scientific replacement parts are not used.

Parts replaced shall become the property of Van der stahl Scientific.

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Maintenance Chart



As all technical equipment your equipment is also subject to technical wear.
In order to ensure that your machine is always ready for use it should be serviced at least once annually by a trained technician.



Check



Replace



Adjust



Measure

Maintenance chart	Ink ribbon	Teflon strip for guide die	Teflon strip for sealing die	Pressure roller	Toothed belt	Sealing die interval	Sealing temperature between sealing die
At least every 3 months							
Depending on use, at least once annually							

To:
hawo GmbH

From:

Fax 0049 (0) 6261 62015

Order Nr _____

Date: _____

Machine Model _____		Machine number _____	
☒	Designation	Part No	qty
☐	Ink ribbon	6.813.104	
☐	Teflon strip for sealing die	6.105.285	
☐	Teflon strip for guide rail 500 mm	6.105.139	
☐	Pressure roller plastic	2.230.008	
☐	Toothhead belt drive 375 mm	6.271.011	
☐	Toothhead belt, material transport 480 mm	6.271.008	
☐	Heating cartridge	6.536.032	
☐	Upper sealing die complete	1.616.028	
☐	Lower sealing die complete	1.616.029	
☐			
☐			
☐			
☐			
☐			

Signature _____

To:
hawo GmbH

From:

Fax 0049 (0) 6261 62015

Order No

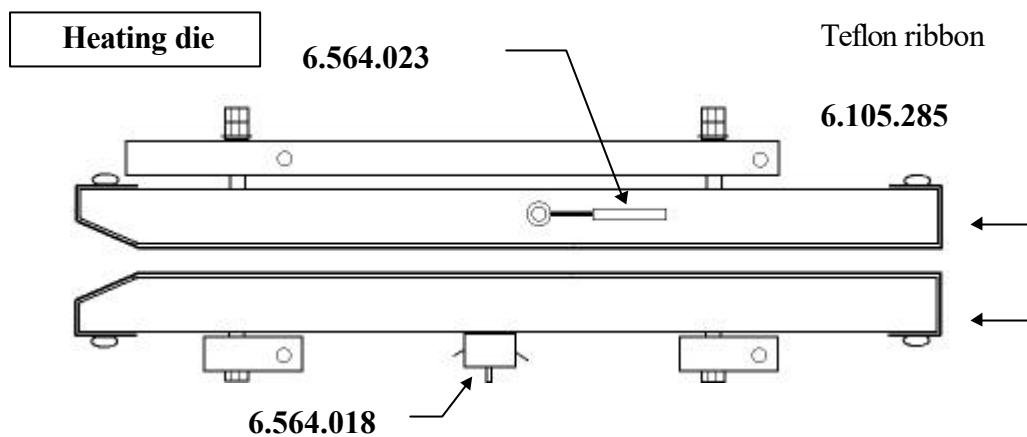
Date:

Machine model		machine number	
☒	Designation	Part No	qty
☐	Print head	1.653.002	
☐	Control board	1.410.022	
☐	Control board 100V	1.410.026	
☐	Display board	1.410.017	
☐	DMS Modul	1.410.018	
☐	Motordriver	1.410.020	
☐	Light barrier	1.561.003	
☐	Gear motor	1.212.011	
☐	Motor ink ribbon	1.212.012	
☐	Temperature limit switch	6.564.018	
☐	Thermocouple	6.564.023	
☐	Service Dongle	1.561.002	
☐			
☐			

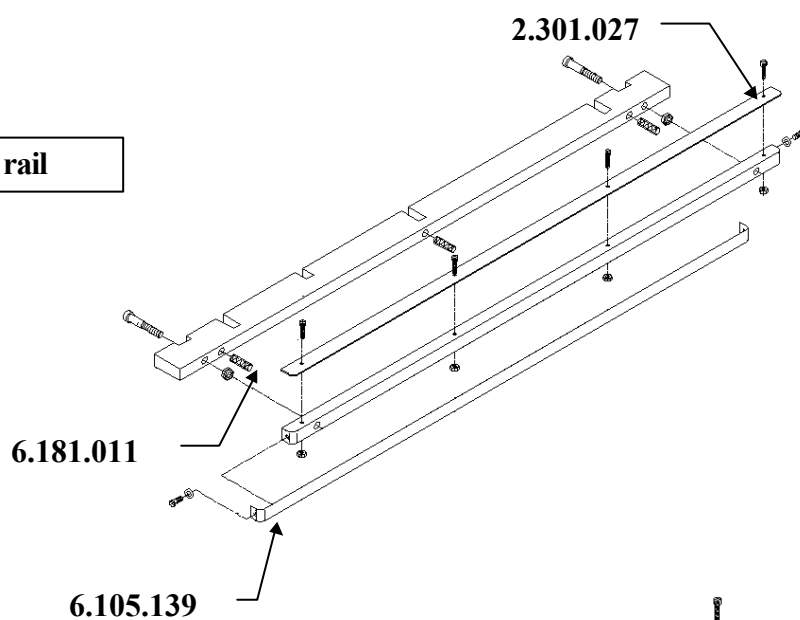
Signature

MD 850	Troubleshooting and Maintenance	5
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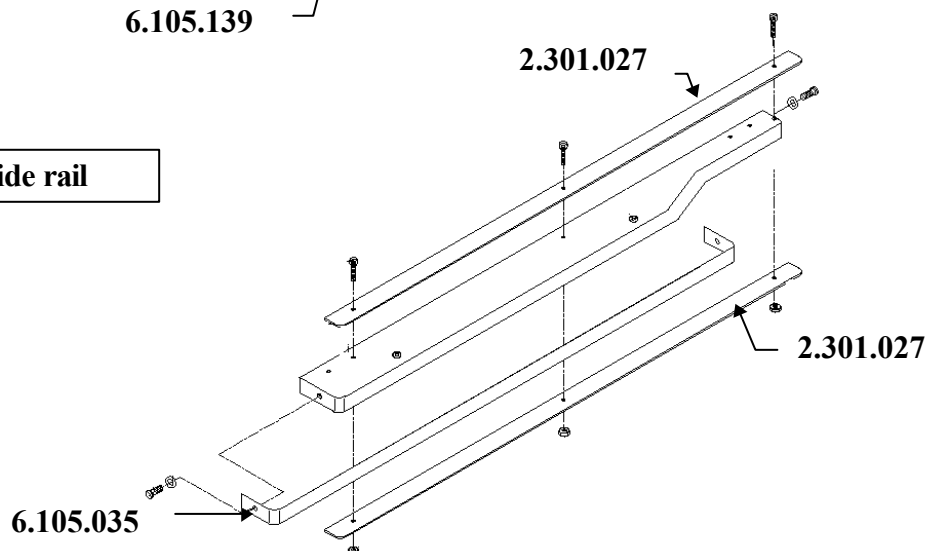
Part numbers



upper guide rail



lower guide rail



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Maintenance Information

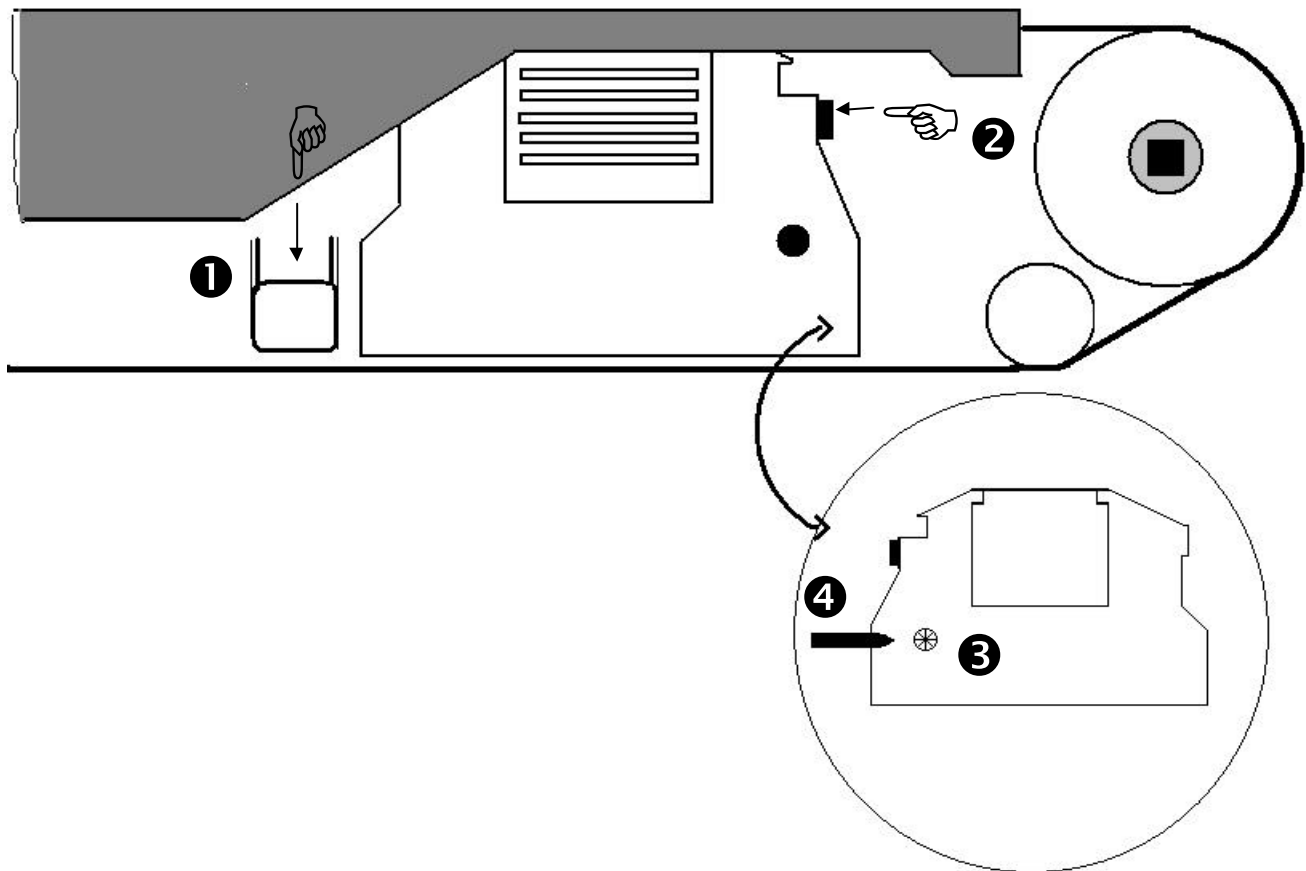
Replacing ink ribbon

- Switch off machine
- Open front flap
- Press lever for ink ribbon holder ① down with left hand.
- Press holder for ink ribbon cassette ② to side and remove cassette.
- Insert new ink ribbon cassette.



Always ensure that the transport opening ③ in the cassette is attached to the transport shaft ④.

- Press ink ribbon cassette toward rear until holder ② catches.
- Close front flap
- Switch on machine and check printing function after reaching nominal temperature.



Maintenance Information

! Please use only **genuine HAWO replacement parts**.

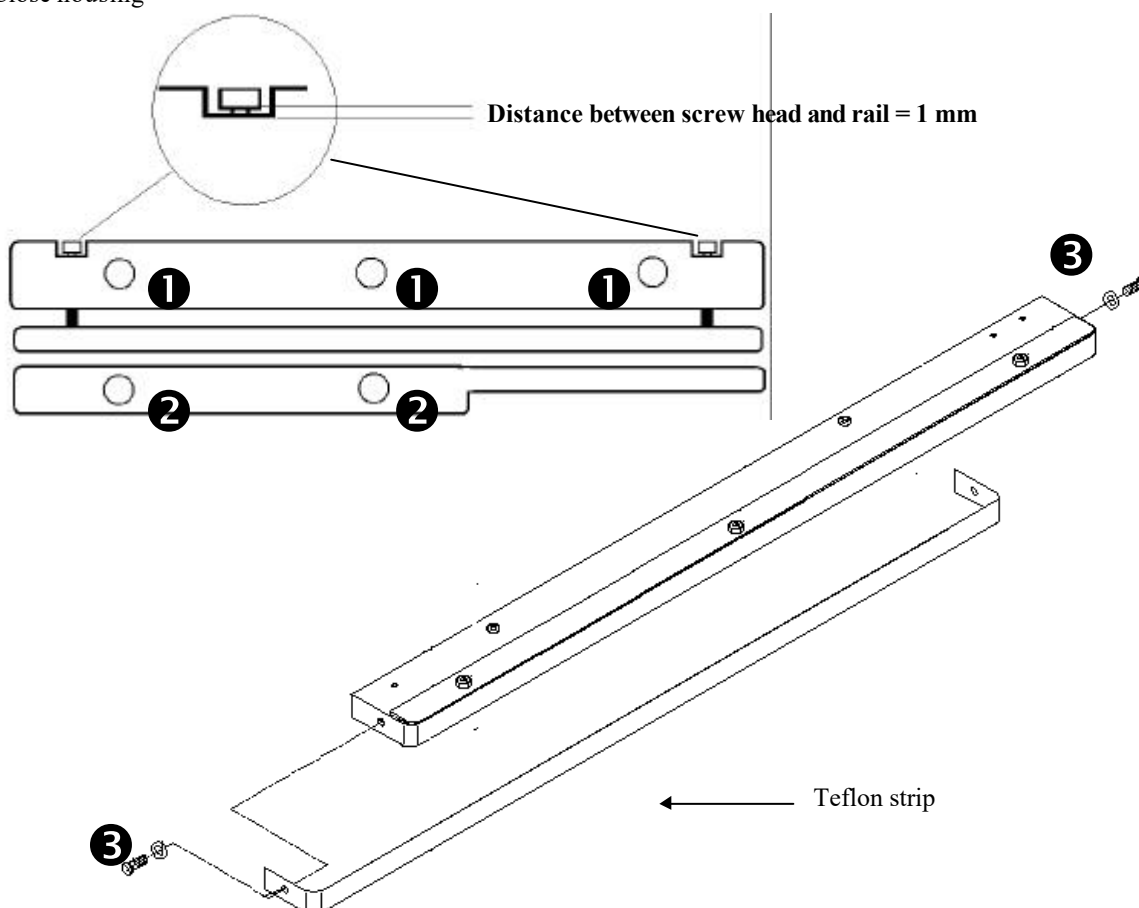
Replacing Teflon strip on guide rail

- **Switch off machine and DISCONNECT POWER PLUG !**

- Open housing
- Remove mounting screws **1** for upper guide rail and remove guide rail **or**
- Remove mounting screws **2** for lower guide rail and remove guide rail
- Remove mounting screws **3** and detach Teflon strip
- Pull backing foil off of new Teflon strip and glue new Teflon strip on straight and without wrinkles
- Fasten Teflon strip with screws **3**
- Install guide rail

☞ When installing the upper guide rail before fastening, push the die down so that the interval between the screw head and rail is 1 mm on both sides. This ensures the correct contact pressure for the guide rail.

- Close housing



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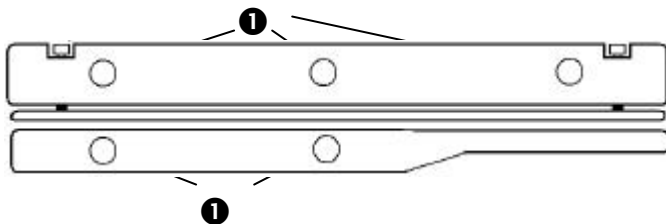
Maintenance Information

! Please use only **genuine HAWO** replacement parts.

Replacing Teflon strip for upper and lower heating die

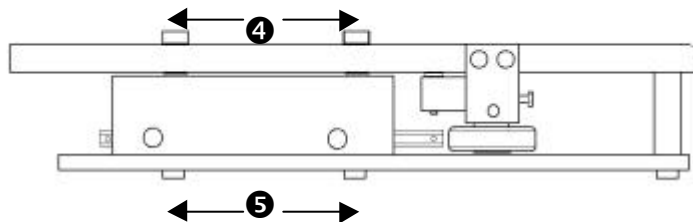
● Switch off machine and DISCONNECT POWER PLUG !

- Open housing
- Remove mounting screws **1** for upper guide rail and remove guide rail.

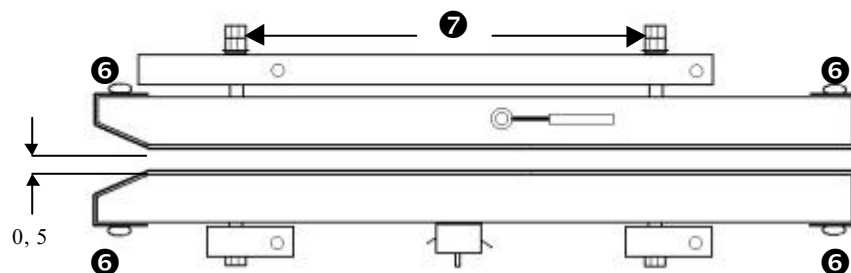


- Disconnect electrical connections for heating die
- Remove fastening screw **4** and at the bottom **5**
- Remove top or bottom heating die
- Unscrew mounting screw **6** and detach teflon strip

- Remove backing foil on new Teflon strip and glue new Teflon strip on straight and without wrinkles
- Fasten Teflon strip with screw **6**
- Install heating die
- Fasten fastening screws **4** + **5** of the heating die
- Reconnect electrical connections to heating die

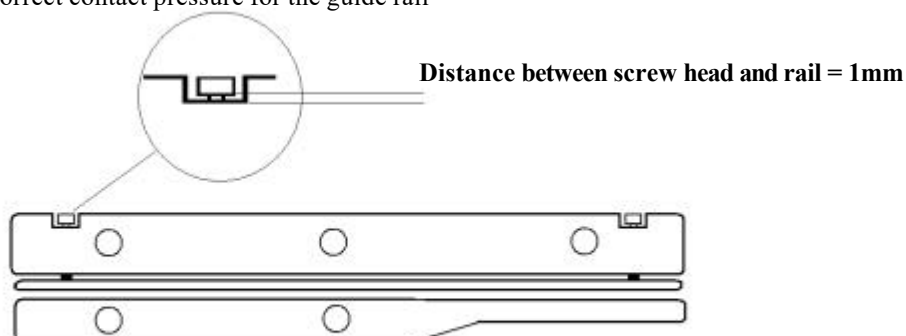


- Detach nuts **7**
- Set distance between the sealing dies to 0.5 mm
- Fasten nuts **7**



- Install guide rails.

☞ When installing the upper guide rail before fastening, push the die down so that the interval between the screw head and rail is 1mm on both sides.
This ensures the correct contact pressure for the guide rail



- Close housing

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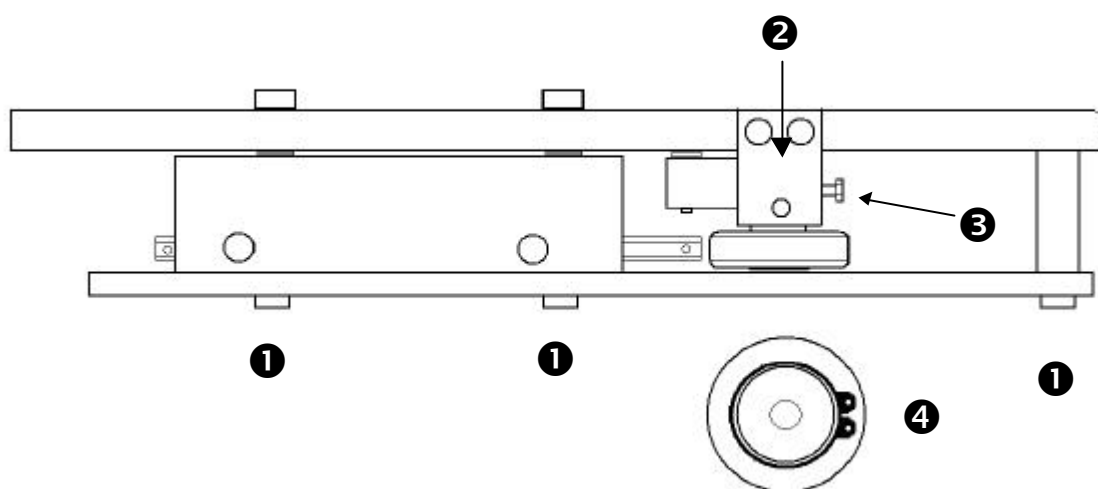
Maintenance Information

! Please use only **genuine HAWO** replacement parts.

Replacing pressure roller

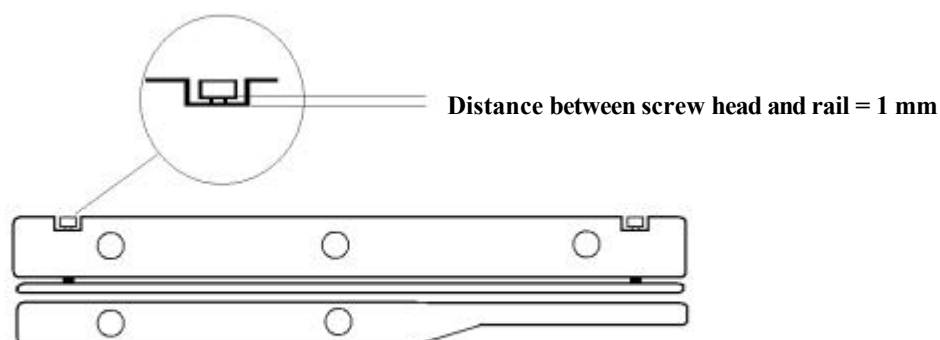
● Switch off machine and DISCONNECT POWER PLUG !

- Open housing
- Remove mounting screws **1** for upper guide rail and remove guide rail.
- Unscrew pressure adjustment screw **2** approx. 5 mm
- Loosen mounting screw **3** and pull pressure roller completely out of holder
- Detach snap ring **4** and remove pressure roller



- Install new pressure roller and fasten with snap ring **4**
- Position complete pressure roller in holder, center in relation to bottom roller and tighten mounting screw **3**
- Adjust contact pressure by screwing in adjustment screw **2** according to calibration instructions on page 24
- Install guide rail

☞ When installing the upper guide rail before fastening, push the die down so that the interval between the screw head and rail is 1 mm on both sides. This ensures the correct contact pressure for the guide rail.



- Close housing

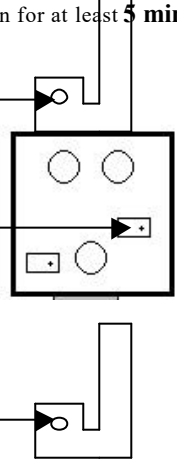
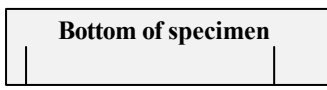
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Calibration Only possible with HAWO Service Dongle.

The Service Dongle is located in the device, left of the Control card

After replacing the temperature sensor or heating elements it is necessary to calibrate the temperature. After replacing the print head or "print start" light barrier it is necessary to calibrate the printer. After replacing the electronic unit it is necessary to perform both adjustment operations.

FUNCTION	KEYS	DISPLAY
Switch off machine Switch on machine Self-test runs for approx. 30 s	Connect service dongle to COM1	Please wait
Select language Language: German, English, French, Spanish, Italian, Finnish, Swedish	 Language selection 	Set language GB
CALIBRATION Contact Pressure 1. Prior to adjustment unscrew S totally 2. Adjust zero point to 5 N using poti P1 3. Set pressing –on pressure to 100 N using screw S Press "OK" for confirmation	CAUTION! This calibration may ONLY be carried out when the device is completely cold Before calibration the device must have been switched on for at least 5 minutes  	Contact pressure 0 – Point 000 N Contact pressure Range 05 N Contact pressure Range 100 N
SYSTEM CALIBRATION	 Temperature  Printer	system calibration next key
TEMPERATURE Measure temperature between printing dies	After reaching T=120 °C / 248 °F: Enter measured temperature 1 after waiting 120 sec. Input temperature 1  After reaching T=200 °C / 392 °F: Enter measured temperature 2 after waiting 120 sec. Input temperature 2 	Time 1 Temperature 1 120 120°C reading : °C Time 2 Temperature 2 120 200°C reading : °C
PRINTER 1. Print test with specimen > 150 mm 2. Measure distance 1 and 2  Distance 1 Distance 2	Confirm test printout  Input distance 1  Input distance 2 	printer calibration test print printer calibration distance 1 mm printer calibration distance 2 mm

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Adjustment



Only possible with Service Dongle.

The Service Dongle is located in the device, left of the Control card

Maintenance date

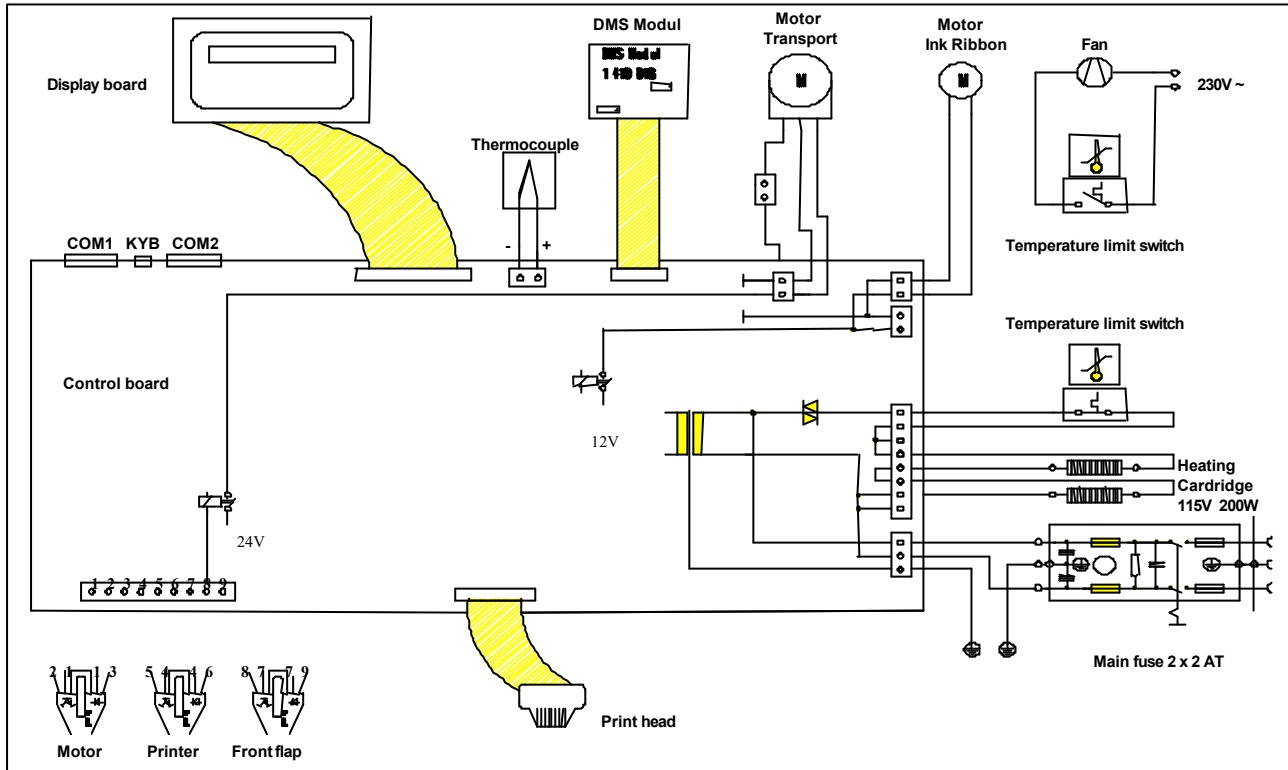
FUNCTION	KEYS	DISPLAY
Switch off machine Switch on machine Self-test runs for approx. 30 s	Connect service dongle to COM1	Please wait
Select language Language: German, English, French, Spanish, Italian, Finnish, Swedish	Language selection	Set language GB
Press buttons in sequence		DD-MM-JJ 17-02-02
MAINTENANCE Date for next maintenance Reminder	Input	MM-DD-YY 17-02-98

Standby function

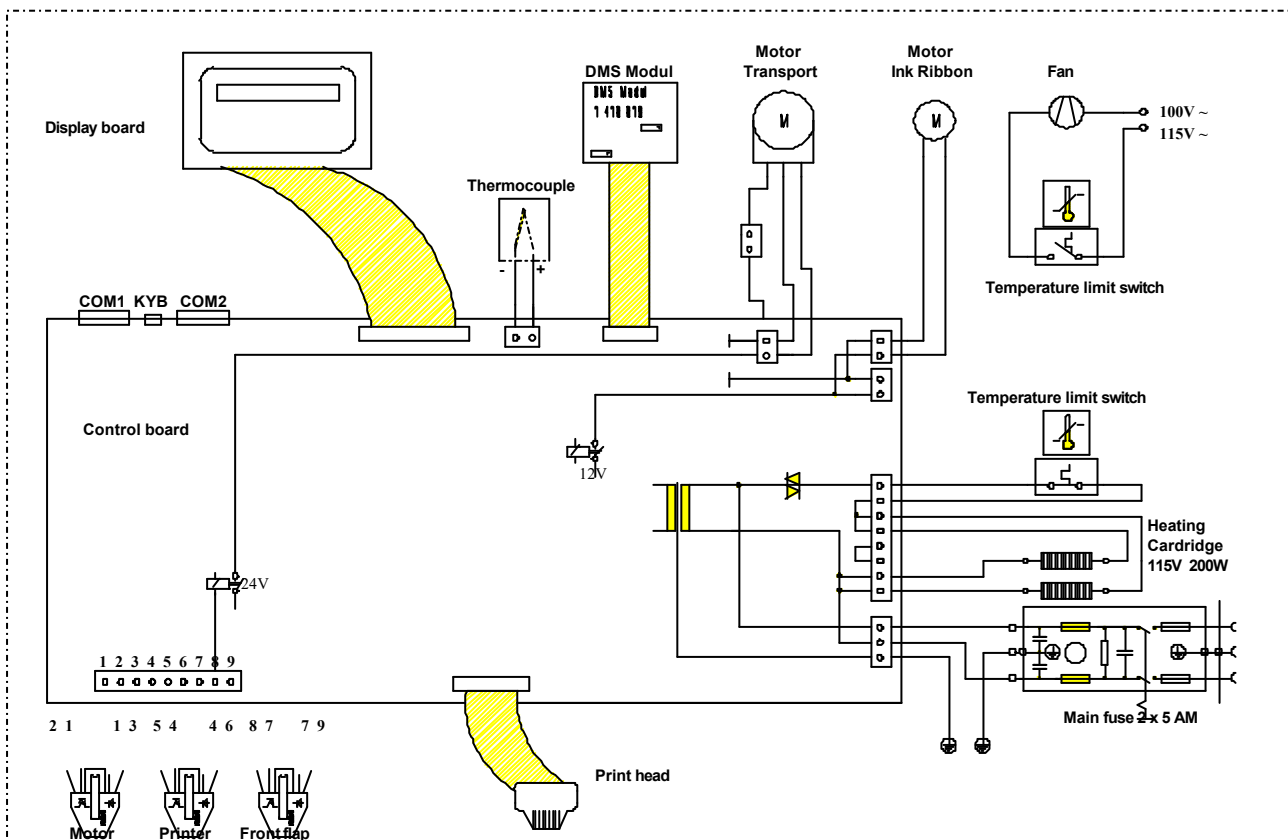
Switch off machine Switch on machine Self-test runs for approx. 30 s	Connect service dongle to COM1	Please wait
Select language Language: German, English, French, Spanish, Italian, Finnish	Language selection	Set language GB
Press buttons in sequence		Stand by after 120 min
Enter time for switch over the standby operation, min 10 min max 120 min	Input	Stand by after 20 min
Stand by function activate / deactivate	yes / no	Activate Stand by Yes

MD 850	Technical Data	6
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Circuit and Wiring Diagram 230 V



Circuit and Wiring Diagram 100V/115V



MD 850	Technical Data	6
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Specifications

Power connection	[V]	230 / 115
Main fuse 230 V (115V)	[A]	2 T (5 M)
Power consumption	max [W]	500
Heat dissipation	[kJ/s]	0,1
Noise intensity	[dB/ A]	47
Ambient temperature	[°C]	5-25
Dimensions, length	[mm]	620
Width		260
Height		250
Weight	approx. [kg]	23
Processing speed	[m / min]	10
Sealing temperature	[°C]	80-220
Sealing temperature tolerance	[+ - %]	2
Sealing seam	[mm]	12
Infinitely adjustable sealing edge	[mm]	5-30
Sealing seam length	[mm]	unlimited