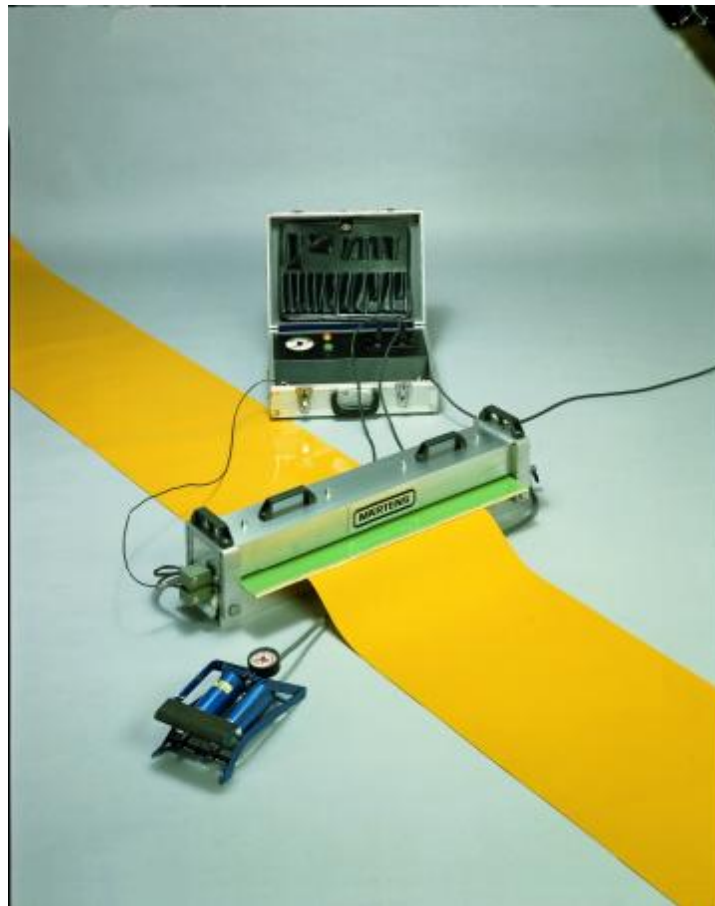


# MANUAL



Conveyor belt joints  
by welding with

## **MÄRTENS-ALUMINIUM-WELDING-PRESS**

---

---

## INDEX OF CONTENTS

1. Description .....	1
2. Spare part list .....	2
3. Preparation for finger splices.....	3
4. Press construction and operation .....	4
5. Operation .....	5

---

## 1. Description

Special notice:

The welding press is allowed to be used exclusively for welding plastic conveyor belts and is not to be used for other applications. Please follow the guidance stated in our operating instructions for your own safety.

Märtens welding presses are specially designed for welding plastic conveyor belts from Märtens Transportbänder GmbH. It is possible to use the Märtens press for welding plastic conveyor belting from other suppliers. Unfortunately we are not able to give any technical welding advice for this procedure, i.e. operation, temperature or pressure.

The welding presses are made of a two-part basic unit, Top and bottom part, with integrated extra-slim heating plates. The width of the heating zone is 100mm standard, the length depends on the overall size of the press.

The following press sizes are available:

Type	700	900	1200	1400	1700
Length overall	870 mm	1.070 mm	1.370 mm	1.570 mm	1.870 mm
Length heating zone	700 mm	900 mm	1.200 mm	1.400 mm	1.700mm
max. Beltwidth for 60° joint	420 mm	620 mm	820 mm	1.050 mm	1.300 mm
Weight	25 kg	31 kg	41 kg	46 kg	56 kg
Height overall	240 mm	240 mm	240 mm	240 mm	240 mm
Width overall	175 mm	175 mm	175 mm	175 mm	175 mm
Working temperature	0 – 200°C	0 – 200°C	0 – 200°C	0 – 200°C	0 – 200°C
Power supply	220/380V 50Hz	220/380V 50Hz	220/380V 50Hz	220/380V 50Hz	220/380V 50Hz

Custom made presses with special lengths or widths are possible on request.

The welding press is supplied for use with either air or water cooling system. All equipment for the preparation of a finger joint is enclosed.

For embossed plastic conveyor belts an embossing mat is available as special accessory

## 2. Spare part list

Top unit:

- Aluminium-U-profile with fixed parts
- Aluminium square support bar
- wooden pressure plate
- water cooling tubes with connections
- heating element
- 2 plastic handle.

Bottom unit:

- Aluminium-U-profile with fixed parts
- Aluminium square support bar
- wooden pressure plate
- pressure hose with valve
- heating element
- 2 fixing clamps with locking device.

### Accessories

<u>Article</u>	<u>Article no.</u>
2 pieces plastic panels, 150 mm width	Acc. to length
Teflon glas fibre, 68/0,62 (coarse)	2670010
Teflon glas fibre, 68/0,25 (smooth)	2670004
Folding ruler	2100039
Scissors	2100030
Knife/ Cutter	2100032
Spare blades	2100026
Soldering gun	2091016
Soldering tool	2100034
Finger marking foil, 90°	2100007
Finger marking foil, 60°	2100006
Alu bracket with handle bar	2100043
PUR-welding foil, transparent, 200 my	2100107
Adhesive strip	2100063
Air gun	2100044
Temperature control unit	2086006

### Special accessory

<u>Article</u>	<u>Article no.</u>
Embossing mat for 90° to keep embossing in joint area, 220 mm width, length to be agreed	2690001
Embossing mat for 60° to keep embossing in joint area, 220 mm width, length to be agreed	2690002

### 3. Preparation for finger splices

1. Use a diagonal splice wherever possible (60°). Only under unfavourable conditions should a right angled splice (90°) be made.
2. The belt has to be cut 120 mm longer than the required endless belt length (e.g. endless length 3.000 mm + 120mm = cut 3.120 mm).
3. At one end, mark a small marking line using a ball pen at the belt edges at a distance of 120 mm from one belt end.
4. Now align the conveyor belt on a ruler and overlap the belt end which was unmarked with the mark line (120 mm), and secure with weights.
5. Fold back the unmarked belt end and within the belt edge markings attach double sided sticking adhesive tapes (app. 20 mm wide) all over the belt width. Now remove the paper from tape and fold back the unmarked belt end.
6. Stick the finger marking foil (60°/90°) in splice area on the fastened conveyor belt.
7. Place a cutting support (board) under the conveyor belt, and then cut with the knife. Remove marking foil, punching remnants and adhesive tape.

**Advice: Always pay attention to keep the belt fixed while cutting to make sure that the belt will run straight after welding.**

8. Place the smooth glass fibre beneath the joint area. Push together the cut belt tips (fingers) as close as possible. Clamp the belt by use of weights or adhesive tape to the table. By using the soldering gun melt the PU-coating of the fingers with each other. In that way a temporary bond is made for transporting the joint area into the welding press.

**Advice: Don't use the solder gun by continuously pressing the operating button. Pressing the operating button continuously could burn the soldering gun. This causes overheating and damage the soldering gun. Please use the switch intermittently.**

9. Cut the PUR welding foil to the length of the joint, remove the yellow protection film, place the transparent foil onto the joint area and fix it pointwise to the belt by using the soldering gun.

#### 4. Press construction and operation

After preparing the belt according to the instruction on page 3 “preparation for finger splices“ the belt is ready for placing into the welding press.

1. Release the end clamps by lifting the black levers.
2. Fold back the both clamps.
3. Remove the top unit of the press as well as the other components, i.e. plastic panels, glas fibre etc.

Assemble press and belt as follows:

4. Push the welding press bottom unit under the conveyor belt splice.
5. Push one plastic plate between bottom unit and belt.
6. Push the coarse teflon glass fibre sheet between plastic plate and belt.
7. Adjust joint area central on the bottom unit, plastic plate and glass fibre.
8. Place side-parts of the same conveyor material along the sides of the joint area. (This will keep the outside fingers in the belt running area).
9. Place smooth glass fibre sheet on the top of the joint area (keep it central).
10. Place the other plastic plate on the top of the smooth glass fibre.
11. Put the top unit of the press on the bottom unit, close the side clamps until the black locking devices click in position.

## 5. Operation

1. Insert the temperature sensor into the drilled hole of bottom press unit.

**Advice: If you do not use the sensor, the press will overheat and the belt and the press will be damaged or destroyed.**

2. Connect the air gun to the valve and build up pressure as recommended for the belt type. The air gun should stay connected to the press during welding. Check air pressure periodically during the welding procedure.
3. Plug the heating elements into the sockets of the control unit.
4. Connect the control unit to power supply.
5. Adjust the temperature required on the circular thermometer as recommended for the belt type.
6. Both heating elements will now heat up to the pre-set temperature - check the temperature visually during the heating process.
7. On reaching the desired temperature, the unit switches off automatically. Cooling process can be tracked on the thermometer in the control unit.
8. The cooling process can be speeded up by using a water cooling system when the temperature drops *below* 130°C. Therefore you have to connect a water system to the connection at the top unit of the welding press.
9. When the temperature drops below 80°C you can remove the belt.

**ATTENTION! Welding press is still very hot. Wear protective gloves!**

10. Cut off the side-parts by using cutting board, knife and ruler.
11. The conveyor belt is ready to use and can be run according to the operating of the constructions of the conveying machine.