Novitool
BELT FABRICATION EQUIPMENT

Splice Press Series aero version 2

300 – 600 – 900 – 1200 – 1500

OPERATION MANUAL

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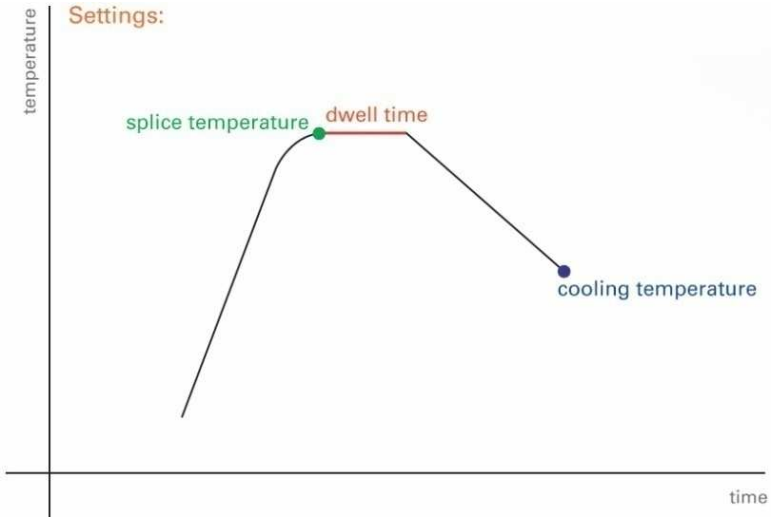
Introduction to the AERO splice press

The AERO splice press is an all-in-one solution for splicing thermoplastic conveyor belts (e.g. PVC, polyurethane).

No external control box, air pump or water cooling tank are required.

The AERO presses are provided with electric heating and built in air cooling. The splice process runs fully automated:



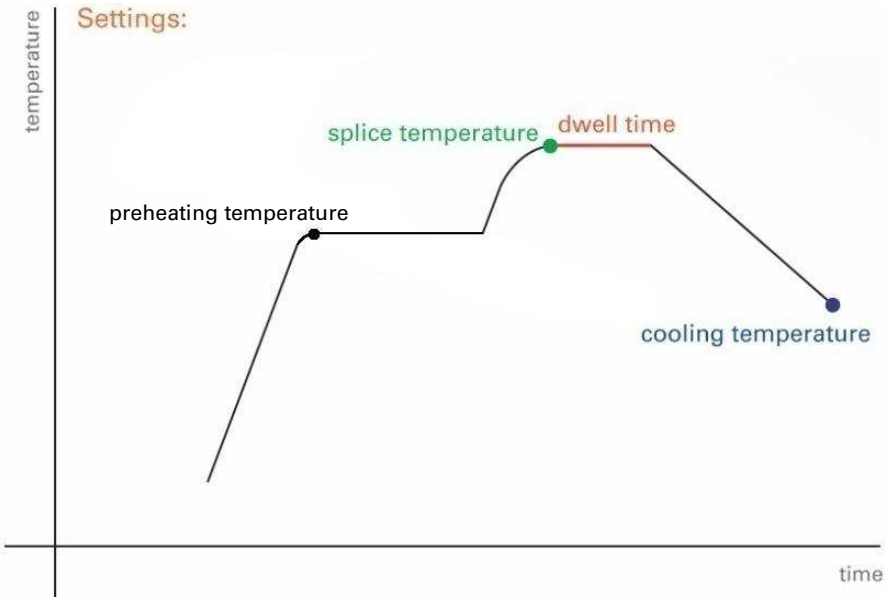
(graph of the basic process, program level 1)

- Splice pressure is applied by an internal compressor, max. 2 bar (28 psi)
- Heats up to a splice temperature of max. 200 °C (392 °F)
- Keeps it at the splice temperature (adjustable dwell time)
- Cools down to the cooling temperature (safe temperature to take the belt out)

- For thicker belts a preheat temperature and preheat dwell time can be applied *
- The bottom heating can be set lower or higher than the top heating **
  (see next page)

The splice surface is 190 mm wide (7.5”); the heated zone is 130 mm wide (5.1”)

*) If the belt is relatively thick the problem might occur that the outside of the belt is at the splicing temperature too long, waiting for the inside to reach the required temperature. Molten material might flow away or discolor and fabrics might shrink. To avoid this problem to happen, the preheat option can be used. It heats the belt up (outside and inside) to a temperature, just below the melting temperature. From that status the inside splice temperature can be reached much quicker, minimizing the risk for unwanted flow of material, discoloring or fabric shrinkage.



(graph of a process with preheating, program level 2)

**) The reading of the display relates to the top temperature of the press. If more or less heat is required at the bottom of the belt, the "bottom heat factor" can be used. Please note that this factor relates to a plus or minus amount of heat (%), not to a specific temperature.

AERO presses are available in 5 different sizes:

- 300 mm effective (12")
- 600 mm effective (24")
- 900 mm effective (36")
- 1200 mm effective (48")
- 1500 mm effective (60")

AERO presses function on different voltages; see "Installation of the AERO presses"

The presses are provided with a flight case; see "Transport of the AERO splice press"

Transport of the AERO splice press

The AERO press is supplied with a flight case, which can be used for transport to on site jobs. The flight case incorporates a space for storing cables etc. It is provided with wheels, for easier transport from the van to the splice location.

The AERO 300 up to 900 has a flight case with two wheels, the larger flight cases are provided with four wheels. Flight cases can be stacked on top of each other, but have to be secured during transport.

Installation of the AERO splice presses

Power supply cables

The AERO can be connected to different supply voltages by using the concerning connection cable. There are 5 different cables available:

- 1 phase 230 Volt (Europe, max 16 Amps, only applicable for AERO 300, 600 and 900)
- 1 phase 230 Volt (USA, max 30 Amps)
- 3 phase 230 Volt
- 3 phase 400 Volt + neutral
- 3 phase 460 Volt

Connect the right cable for the applied voltage to the AERO, at the front of the press. The first time the concerning cable is applied; a specific connector might be installed to the cable to fit the local power supply socket. Take care that connections are made correctly, by authorized personnel:

- 1 phase:
  - Green/ yellow — Ground
  - Brown — Phase 230 Volt
  - Blue — Neutral (or 2nd phase 230 V)
- 3 phases:
  - Green/ yellow — Ground
  - Brown — Phase L1
  - Black — Phase L2
  - Grey — Phase L3
  - Blue — Neutral (only for 3ph 400V + neutral)

Mains power connection

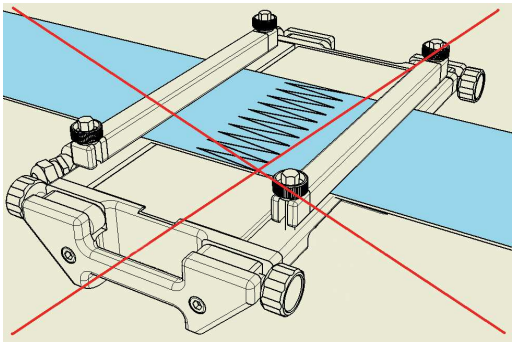
The following should be observed when connecting the splice press to the electric power supply:

- The right AERO cable is chosen, single phase or three phase, for the specific voltage
- The press is only connected to a power supply which is provided with a ground connection and which is suited for the amp draw of the press
- CAUTION: Extension cables have to be suited for the amp draw of the AERO press and have to be provided with a ground lead.
- CAUTION: Note that long extension cables introduce a loss of power, due to their electrical resistance. Never use wound extension cables to prevent heating of the coil.
- Always comply with local regulations with regard to mains power connections, extension cables etc.

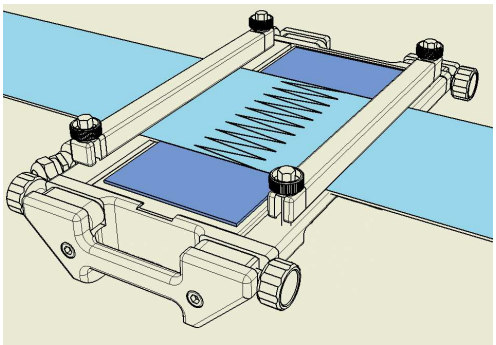
Operation of the AERO splice press

Putting a belt into the AERO splice press

- Take the electric connector at the front left side of the AERO off
- Unlock the four black colored bolts by turning them counterclockwise and swing these bolts down
- Take the top part of the AERO off and put it down, ON ITS SIDE (not on its splice surface, to prevent damage and pollution)
- Unlock the four nuts of the clamping bars and take the clamping bars off
- Put a splice cloth (silicone, PTFE, silicone paper) on the bottom part of the AERO, over its full length
- Put the belt on top of this and position the prepared splice right in the middle of the press (heated zone is 130 mm wide)
- Fix the belt in its position by means of the clamping bars
- IMPORTANT: Fill the remaining splicing area with equal belting material, to close up the splice, to avoid temperature misreading and to avoid heater damage; see pictures
- Put a second splice cloth (silicone, PTFE, silicone paper) or silicone profile sheet on top of the prepared splice, full length of the press
- Put the top part of the AERO on top; TAKE CARE NOT TO DAMAGE THE SPLICE SURFACE
- Replace the electric connector
- Swing the black fixing bolts in position and tighten them by hand (4 off)

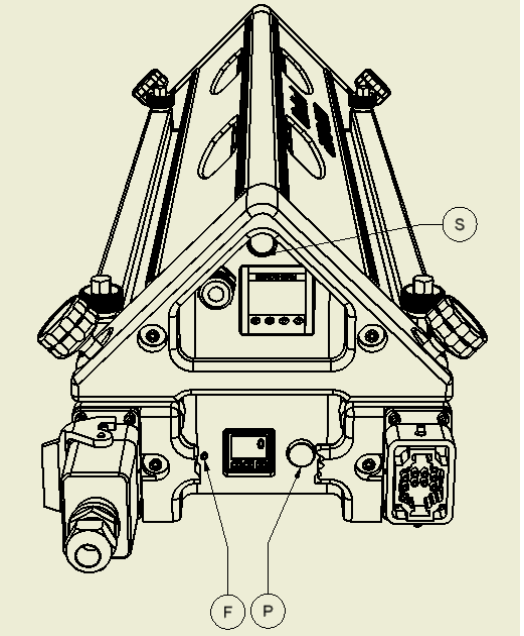


Wrong: remaining area not filled



Good: remaining area filled with extra belting material

Setting the AERO parameters



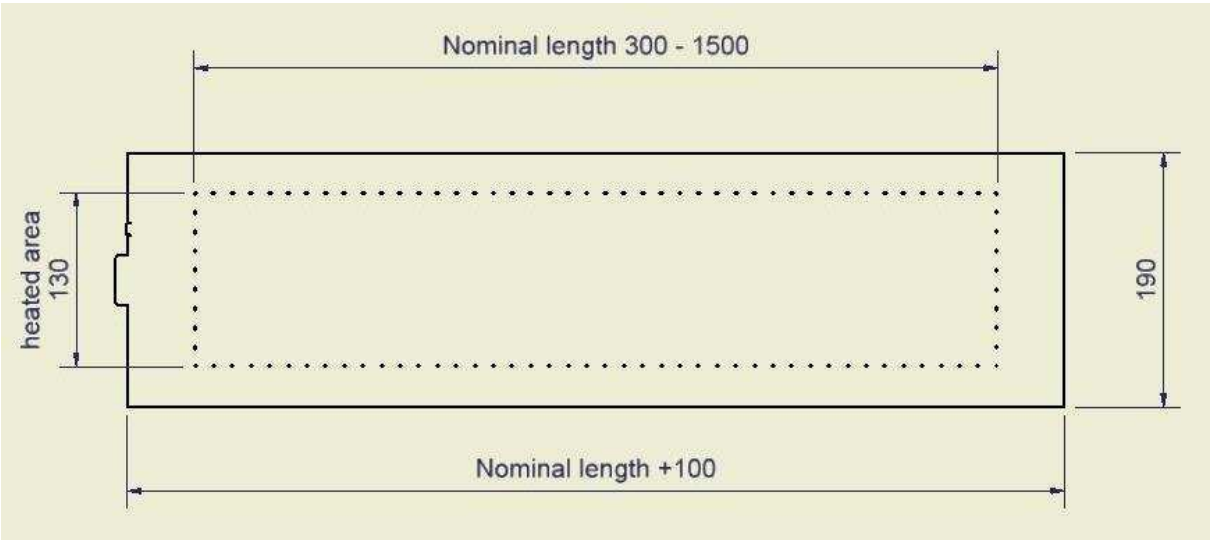
Connect the AERO press to the power supply

The following parameters can be set:

- Controller on top part of the AERO
  - Input level 1
    - Splice temperature (max. 200 °C / 392 °F)
    - Splice temperature dwell time
    - Cool down temperature
  - Input level 2
    - Preheat temperature
    - Preheat dwell time
    - Splice temperature
    - Splice temperature dwell time
    - Cool down temperature
    - Bottom heat factor (lower or higher than top heating)
    - Units (degrees Centigrade or Fahrenheit)
- Controller on bottom part of the AERO
  - Splice pressure (0 - max. 2 bar / 28 psi)

After switching on the display of the top controller shows two values:

- Actual temperature, top displayed value, green color
- The text “OFF”, showing that the process is not running



(Splice plate dimensions and the heated area)

The AERO always starts up in input level 1

All settings are presented as an abbreviation, e.g. “SPL.T”. If you wait for a while, a readable text is shown, e.g. “SPLICE TEMPERATURE”.

Temperatures, input level 1:

Setting of the splice temperature (top controller)

- Push button . The first value which is shown on the display is the splice temperature (SPL.T)
- Change the actual setting by pushing the UP or DOWN button.
- Wait for one second and the displayed value blinks to confirm that it is set.
- Maximum temperature is 200 °C (392 °F) (is limited in the controller)

Setting of the splice temperature dwell time (top controller)

- Push button until the display shows “SPLDT”
- Push the UP or DOWN button to adjust dwell time;
- Wait for one second and the displayed value blinks to confirm that it is set.

Setting of the cool down temperature (top controller)

- Push button until the display shows “CLD.T”
- Push the UP or DOWN button to adjust cool down temperature
- Wait for one second and the displayed value blinks to confirm that it is set.
- Return to the start up status by pushing button again

Splice pressure

Setting of the splice pressure (bottom controller)

- Push the middle button S (display shows set value)
- DON’T HOLD THE S BUTTON otherwise the parameter menu will open
- Push the UP or DOWN button to adjust splice pressure
- Return by pushing the middle button S again
- Maximum pressure is 2 bar (28 psi) (is limited in the controller)

For splicing in program level 1, go to page 12.

Temperatures; changing to program level 2:

- Push and hold button until the display shows “LEv1”
- Push the UP button once and the display shows “LEv2”
- When the display shows “CODE 0” push the UP button twice (display shows “CODE 2” now)
- Wait for one second and the controller returns to the start up status
- Program level 2 settings are available now

Setting of the preheat temperature (default value 100 °C)

- Push button. The first value which is shown on the display is the preheat temperature (PREHT)
- Change the actual setting by pushing the UP or DOWN button.
- Wait for one second and the displayed value blinks to confirm that it is set.
- Maximum preheat temperature is 175 °C (347 °F) (is limited in the controller)

Setting of the preheat dwell time (default value 0 sec)

- Push button until the display shows “PREHD”
- Push the UP or DOWN button to adjust dwell time
- Wait for one second and the displayed value blinks to confirm that it is set

Setting of the splice temperature, splice dwell time and cool down temperature

- Equal to the settings of input level 1

Setting of the bottom heat factor (default value 0%)

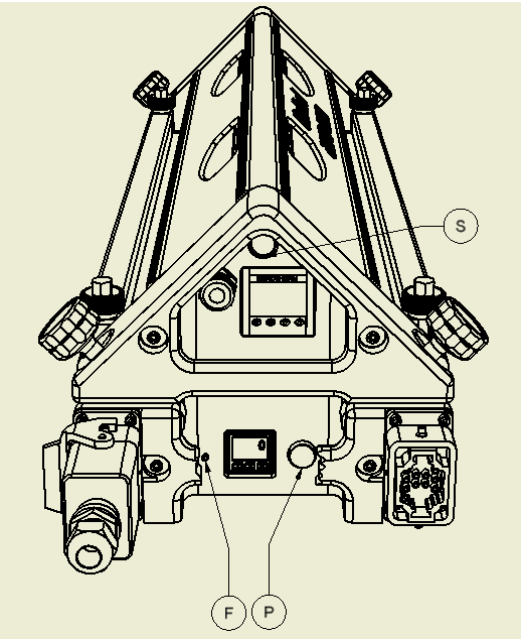
- Push button until the display shows “BOTHF”
- Push the UP or DOWN button to adjust the bottom heat factor
- Wait for one second and the displayed value blinks to confirm that it is set

Changing from degrees Centigrade to Fahrenheit and reverse

- Push button  until the display shows "UNITS"
- Push the UP  or DOWN  button to change from °C to °F or reverse
- Wait for one second and the displayed value blinks to confirm that it is set
- Return to the start up status by pushing button  again

ATTENTION: If the AERO is disconnected from the power supply, or the top part is disconnected from the bottom part, all extra settings of level 2 return to their default value. Only the basic settings (as level 1) and the setting for units (°C/ °F) will be kept.

The splicing process



Final check before splicing: check whether the cables are connected correctly

Check whether the black colored bolts are in position and all of them are tightened by hand

Splicing:

Start the splicing process by pushing the green START button “S” (on top part of the AERO). The splicing process will proceed as follows:

- Heating of the press starts
- Meanwhile the air compressor runs, until the set pressure is reached
- Optional: If the chosen preheat temperature is reached, this temperature is held during the set preheat dwell time period. When the preheat dwell time has elapsed, heating of the press continues.
- When the chosen splice temperature is reached, this splice temperature is held during the set dwell time period
- After the dwell time has elapsed, air cooling starts
- Air cooling stops when the set cool down temperature has been reached

Release pressure by pushing button “P”. Hold the button until all pressure is released to zero. The actual pressure is displayed in the controller.

Now the splice is finished and can be taken out of the press.

Maintenance

Settings of the pressure controller

Resetting of the parameters to their original settings:

- Push and hold the S button to get into the function menu (display shows “F0” now)
- Push the S button one more time to get into the F0 menu (unit conversion menu)
    - The display should show “Uni” and “bAr” (bar) or “Psi” (psi) now. Setting can be done by pushing the UP ▲ or DOWN ▼ button
- Push button S to return to the function menu (display shows “F0”)
- Push the UP button ▲ to get to “F1”
    - (push S) “oU1” should be set to “HYS”
    - (push S) “lot” should be set to “I-n”
    - (push S) “n-I” should be set to “2.00”
    - (push S) “H-I” should be set to “0.02”
    - (push S) “Col” should be set to “Sor”
- F2 (not used)
- F3 “rES” should be set to “2.5”
- F4 “drE” should be set to “100”
- F5 “Pr5” should be set to “oFF”
- F6 (not to be changed)
- F7 “ECo” should be set to “oFF”
- F8 “Pin” should be set to “oFF”
- F90 “ALL” should be set to “oFF”
- F97 “Copy” should be set to “oFF”
    - If in the copy mode, push the ▲ and ▼ buttons simultaneously for some seconds to return
- F98 “tESt” should be set to “A”
- F99 “ini” should be set to “oFF”

Push and hold the S button to return to the operation mode

Calibration of the pressure controller

- Take care that the pressure in the AERO is completely released
- If the reading on the display is different than zero, continue as follows:
- Push both the UP ▲ and DOWN ▼ button simultaneously and hold them for a while
- The pressure controller is calibrated to zero; the display shows "0.0" now

Reset of the 24 VDC fuse

- On the front of the panel there is a button "F", to reset the 24 VDC fuse

Auxiliary materials

Auxiliary materials	size:	300	600	900	1200	1500
Silicone cloth 0.5 mm	AERO-O Si05	-03	-06	-09	-12	-15
Silicone cloth 3 mm	AERO-O Si30	-03	-06	-09	-12	-15
PTFE cloth, smooth	AERO-O Te01	-03	-06	-09	-12	-15
PTFE cloth, embossed	AERO-O Te02	-03	-06	-09	-12	-15
Molton fabric	AERO-O Mf00	-03	-06	-09	-12	-15

Warranty

Our standard warranty terms are applicable for the AERO presses. A copy of these terms is available at your request.

Recycling of the press

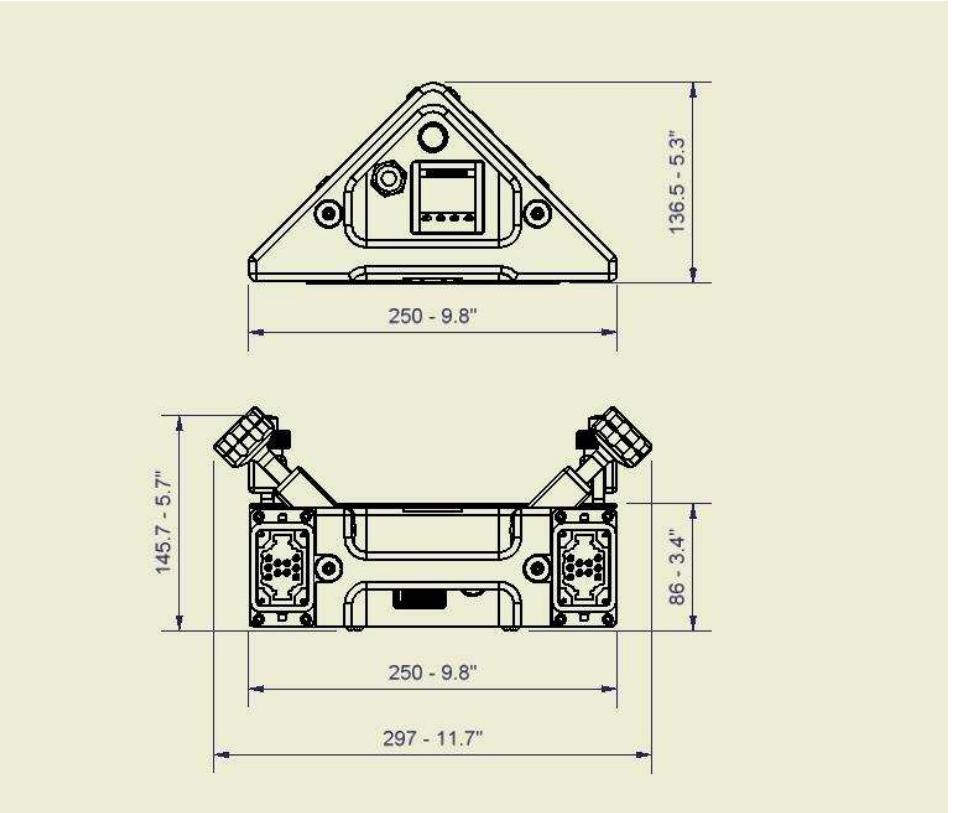
If the splice press becomes too old or redundant, make it unusable immediately.

Do not discard electrical appliances with household waste.

As specified in the European Directive 2002/96/EC, used electrical goods must be collected separately and recycled ecologically.

Contact your local authorities for further information.

Specifications



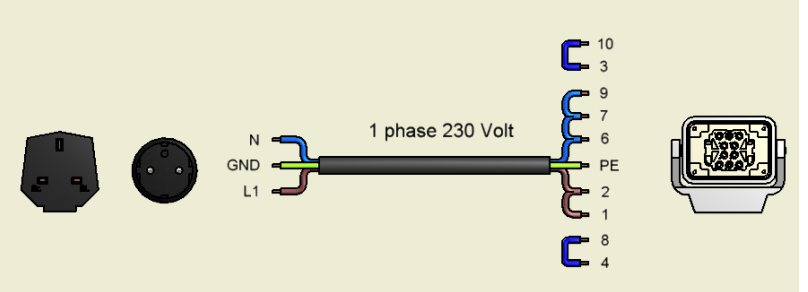
aero	300	600	900	1200	1500
	Amps				
1 phase 230 V	8	13	16	24	30
3 phase 230 V	4	6.5	8	12	15
3 phase 400 V+0	4	6.5	8	12	15
3 phase 460 V	4	6.5	8	12	15
Metric units					
Effective length mm	305	610	914	1219	1524
Effective width mm	130	130	130	130	130
Mass lower part kg	10	15	20	25	30
Mass upper part kg	11	15	18	22	26
Total mass kg	21	30	38	47	56
Length mm	535	835	1135	1435	1735
Overall height mm	220	220	220	220	220
Max pressure bar	2	2	2	2	2
Max temperature °C	200	200	200	200	200

aero	300	600	900	1200	1500
Imperial Units					
Effective length inch	12"	24"	36"	48"	60"
Effective width inch	5,1	5,1	5,1	5,1	5,1
Mass lower part lbs	22	33	44	55	66
Mass upper part lbs	24	33	40	48	57
Total mass lbs	46	66	84	104	123
Length inch	21	32.9	44.7	56.5	68.3
Overall height inch	8.6	8.6	8.6	8.6	8.6
Max pressure psi	28	28	28	28	28
Max temperature °F	390	390	390	390	390

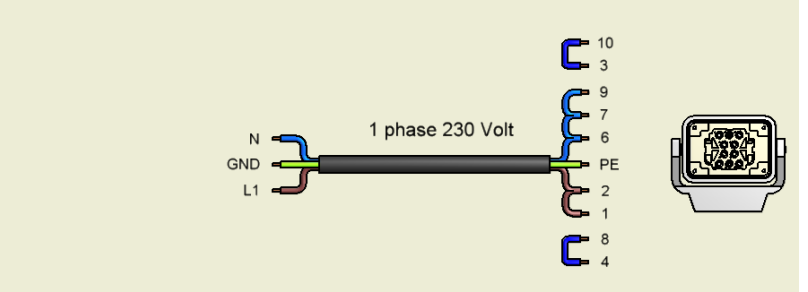
Power supply cables

	Order code:
1 phase 230 Volts, max 16 Amp (only 300 – 600 – 900)	
• European plug	AERO-2 CA1x230E
• UK plug	AERO-2 CA1x230U
1 phase 230 Volts, max 30 Amp (USA)	AERO-2 CA1x230A
3 phase 230 Volts	AERO-2 CA3x230
3 phase 400 Volts + neutral	AERO-2 CA3x400
3 phase 460 Volts	AERO-2 CA3x460

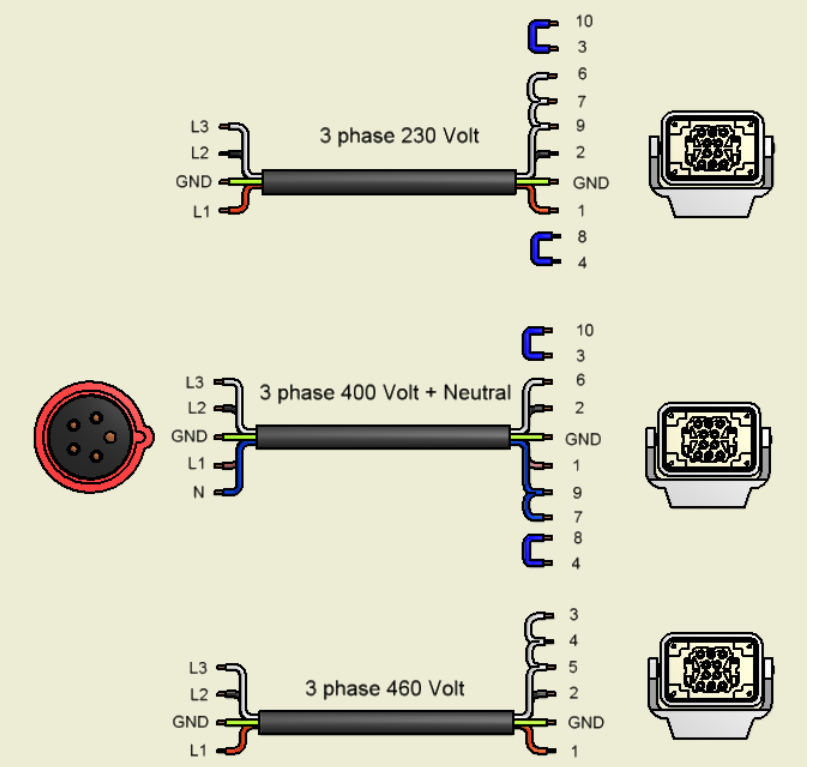
Electrical diagram of the power supply cables



European and UK cable, single phase



USA cable, single phase



Three phase cables

EC DECLARATION OF CONFORMITY

Novitool TMC
Buys Ballotstraat 31
1704 SK Heerhugowaard
The Netherlands
www.novitool.com

We, Novitool TMC, declare that the

SPLICE PRESSES

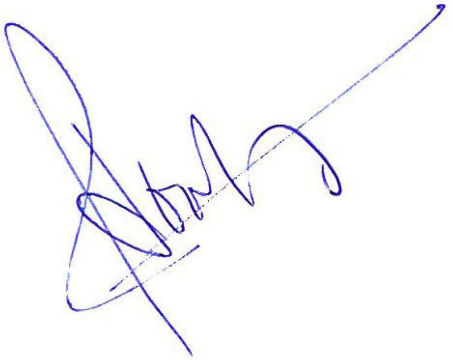
- *aero 300*
- *aero 600*
- *aero 900*
- *aero 1200*
- *aero 1500*

for splicing thermoplastic conveyor belt material,
comply to the following EC Directives:

- Machine Safety Directive 98/37/EC
- Low Voltage Equipment Directive 2006/95/EC
- Electromagnetic Compatibility Directive 2004/108/EC

The Netherlands,
Heerhugowaard,
December 2009

J.S. van 't Schip



Notes:

Buys Ballotstraat 31

1704 SK Heerhugowaard

The Netherlands

T +31 72 576 39 80

F +31 72 571 72 31

E info@novitool.com

Version 2009.02.02