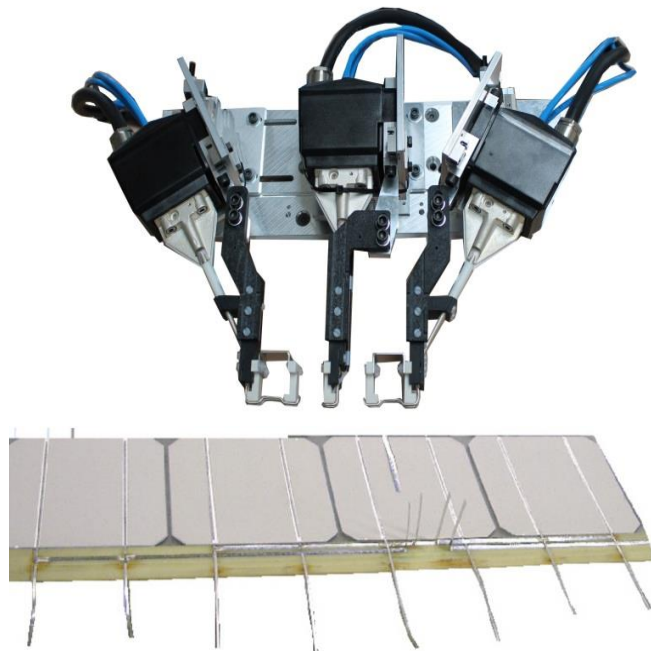


# ***X-Tool***

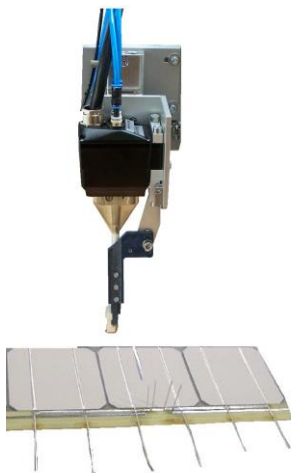
*Inductive soldering tools  
for interconnection of solar panels*



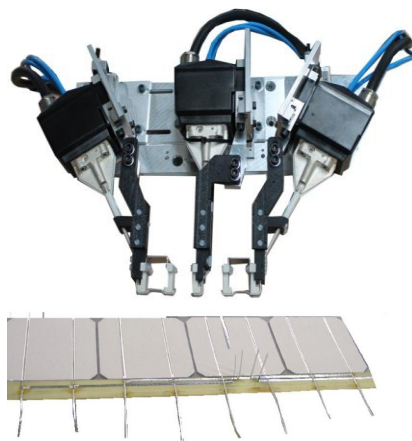
## **Tools for Integration**

- *robust process with constant high quality*
- *scalable: with 1, 2 or 3 tools per soldering system*
- *high throughput and short cycle times*
- *low wear*

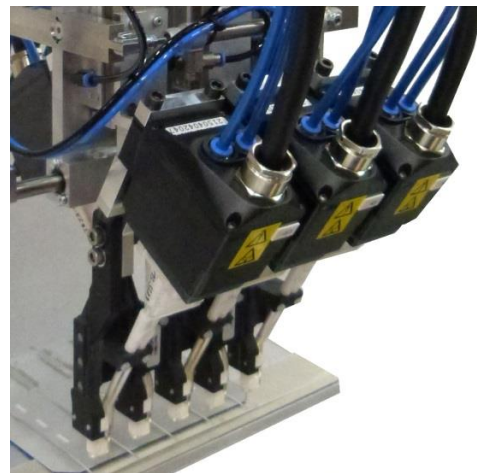
## Inductive soldering for interconnection



Single soldering tool



Triple soldering tool for 5BB



flexible five-fold tool

The soldering of interconnections (bus-ing) is a quality-determining process in the production of solar modules.

The ribbons have to be pressed together mechanically in order to achieve a good soldering joint.

The systems of ATN (patented) heat the soldering joint with induction. With a ceramic hold-down the ribbons are pressed against each other.

The inductive field heats up the solder through this hold-down without direct mechanical contact of the energy source. After completion of the soldering process and solidification of the tin the hold-down is lifted.

The induction soldering through an electrically not conductive hold-down has some advantages:





- The energy input can be switched on and off within shortest time.

- The hold-down itself is not heated. After switching off the heat supply the hold-down continues to press down on the soldering joint until the solder is solidified.

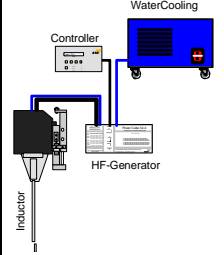
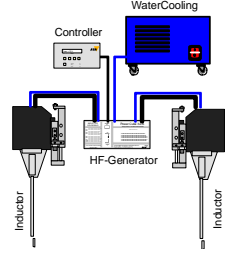
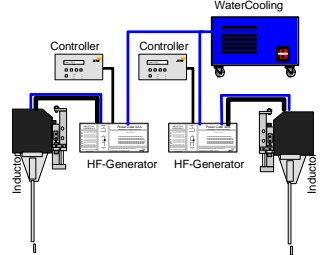
- The heat transfer is contactless and not affected by any contamination.

- The heat source does not touch the soldering joint so that there is only little wear by oxidation or burn-up.

## Technical data

Soldering tools per system	1x1, 1x2, 2x1, 2x2, 2x3	 HF-generator	 Water cooling system	Optional:  Flux dispensing system
Soldering tools per HF-generator	1 or 2			
Power HF-generator	3,5 kW	 Controller		
Water cooling (closed circuit)	C25S for 1- 2 tools C45S for 3-4 tools			
ATN-controller	HC05			
Others	tool: pressure control cooling: temperature, level and flow control			

## System configuration

			Depending on the layout of production and in-line machinery there are different configurations: 1) One HF-generator can drive 1-2 induction heads alternately. 2) One water cooling system may cool up to 4 induction heads. 3) Depending on the control concept, the parameters can be transferred from robot via serial interface to the controller, or can be programmed in the controller. The control of the Z-stroke can be active or passive (to regulate the pressure).
Single system	Double system alternately	Double system simultaneously	

Rev. 09/2019  
Specifications subject to change without notice.



Segelfliegerdamm 94-98  
12487 Berlin – Germany  
phone: ++49 (0) 30 565 9095-0  
fax: ++49 (0) 30 565 9095-60  
web: www.atn-berlin.de

Automatisierungstechnik Niemeier GmbH