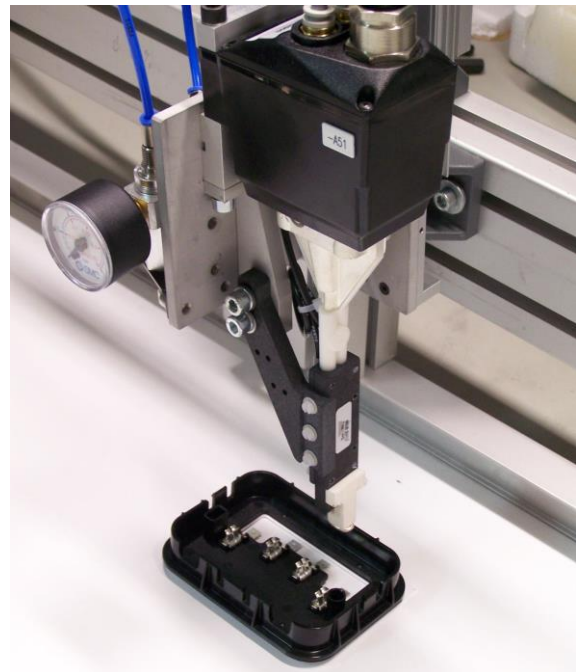
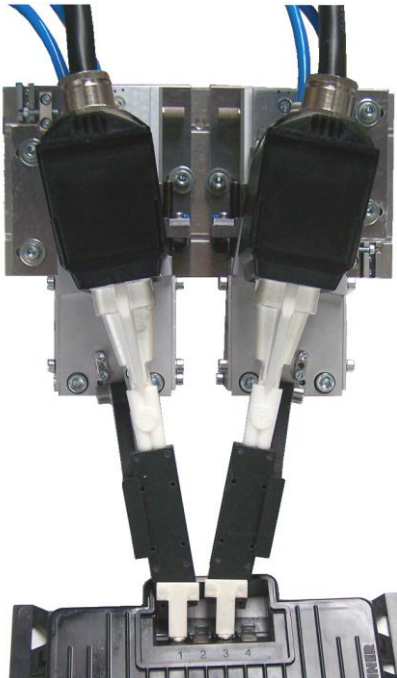


# *Automatic soldering of the J-Box of solar modules*



- *easy system integration with digital interfaces*
- *modular system with different tools*
- *dual tools for high volume production*
- *design can be adapted to customer-specific application*

## System description

One of the manufacturing processes that greatly affect the quality of the product is soldering of the junction box (J-Box). This is conventionally done manually, but with specially designed J-boxes, mounting and soldering can be done automatically.

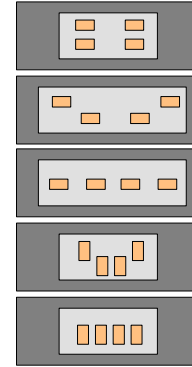
A suitable, fast and safe process is induction soldering. Soldering the connection tabs of a J-box is achieved with a ceramic hold-down that incorporates the induction coil. The mating parts are compressed and heated inductively until the solder joint has been created.

Depending in the type of solar modul

there are different connection geometries (footprints).

ATN has developed three soldering tools that can be configured either as single head or dual head, depending on the required cycle time. The tools are controlled via digital signals (24 VDC) or interfaced via RS-232. The embedded microcontroller takes the load off the high-level control and guarantees a reliable soldering process.

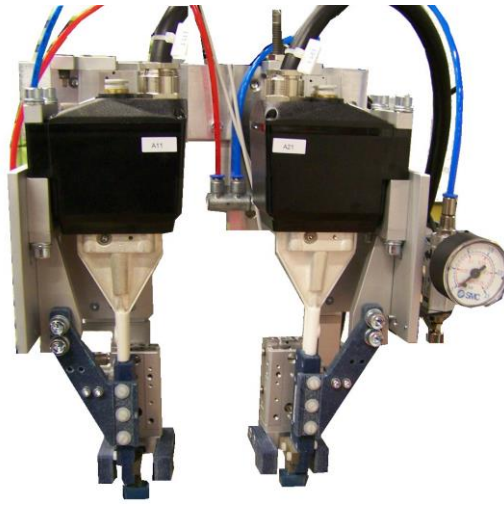
The controller's parameters can be edited and stored either remotely via its RS-232 interface or directly using the user interface featuring an LCD and an intuitive menu structure.



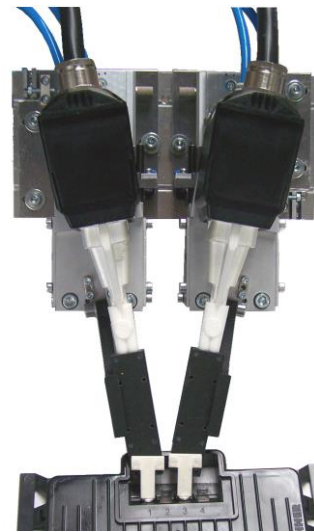
footprints of different J-Boxes



Single head (for 180° and 90°)







Dual head (180°)



Dual head (90°)

## Technical data

Tools per system	1 or 2			optional: 
Tools per HF generator	1 or 2			
Power HF generator	3,5 kW		Water cooling system	Flux dispensing system
Water cooling system (closed circuit)	C15S 1 head C25S 2 head			
ATN Controller	HC05			
misc.	Solder head: regulated force Cooling system: coolant level- and flow metering			