



Components and Systems for Automated Single Point Soldering

Automated Single Point Soldering with ...



Components

- IR-emitter LightBeam
- Solder wire feeder Mosquito
- Dispenser (valve) DV747
- Aerojet (solder paste dispensing)



Standard Machines

- Soldering station vario with
- Inline-transfer
 - Changing cartridges
 - Rotation table

Benchtop roboter **EcoA400** or **EcoW500**



Customer Specific

Customer specific machines for soldering by hot iron, induction, laser and wave as well as for pick and place and for dispensing solder paste.



Laser



Hot Iron



Induction



PulseHeat

Your local contact:



"ATN as a competent manufacturer of selective soldering systems offers a wide range of standard components and machine platforms, with which automation solutions for the customers can be realised at optimal costs. The user gets individually designed procedure solutions for automation problems around his specific task of soldering."

from:
PLUS PRODUKTION VON LEITERPLATTEN UND SYSTEMEN

Today, a lot of soldering joints still need to be soldered sequentially, most of them manually.

The components and soldering systems from ATN make it possible to automate manual work in a cost effective way.

Robot Soldering in Electronic Production

Not all soldering connections in electronic production are able to be produced with automated mass soldering methods like reflow or micro wave soldering. It is characteristic for all these applications, that they require single point soldering, which is normally a manually task. The consequence: clearly higher costs and a quality, which depends on workers individual performance. Now these processes can be automated in a cost effective way. Some examples:

Specific Solder Joints
e.g. wired component on a PCB in SMD-Technology



Small Number of Solder Joints
e.g. cable onto printed circuit board or ceramic substrate

Reel to Reel Production
e.g. capacitor on flexible flat cable (FFC)



Temperatur sensitive
Substrates e.g. 3D-MID or LEDs onto Flex (PEN/PET)

Solder Joints caused by restriction of assembly
e.g. when a complete printed circuit board has to be soldered with the two connectors of a coil without re-melting the existing solder joints



ATN Automatisierungstechnik Niemeier GmbH

With the light soldering system LightBeam ATN is a market leader for selective light soldering. ATN develops, produces and distributes components and software for the manufacturing of electronics, in particular for the automated single point soldering.

ATN was founded in 1996 in the Production Technology Center Berlin (PTZ) and developed 1998 into the ATN Automatisierungstechnik Niemeier GmbH. In the same year ATN moved to the Economic and Science Center Adlershof (WISTA) in Berlin. Today ATN has 30 employees.



Our success is based on a consequent customer-oriented work: For our clients we accomplish soldering attempts and configure systems according to the individual requirements. All technical data and operational sequences are documented, completely illustrated by photos and videos as an important decision basis for our customers.



- ... gives technical support for your special soldering application and recommends you a suitable system from the ATN at optimal costs.
- ... supports your investment project by application tests with yours construction unit samples, determines optimal process parameters and proposes a soldering process that is suitable for you!
- ... automates your manual soldering workshop places, you save time and costs in manufacturing!
- ... realizes your soldering application reliably, you are able to improve the quality of your products with optimal investment and operating costs of the soldering system!
- ... can refer to know-how of many years in the soldering technology and to a multiplicity of installed systems in production, research and process evaluation with considerable manufacturers and institutes.

Soldering System LightBeam, Laser, Hot Iron, Induction, PulseHeat



The soldering system LightBeam operates with IR-light focussed by convergence mirrors and optics. The heat radiation produces the temperature that is required at the Soldering Point. The energy can be regulated very exactly. Thus the light soldering is suitable in particular for the selective reflow-soldering.

To meet the different requirements of our customers ATN offers beyond that further soldering procedures: Contacts mounted into plastic housings are often soldered with the automated soldering iron and solder wire feeder. With the induction brazing ATN offers a contactless soldering procedures, which are suitable for the warming up of solid components. Miniaturised applications are realised with the beam of a high-power diode laser.

There are two basic modules are available:
- the compact desktop device economic and
- the fully automatic soldering machine vario.

The base cell vario is the basic module of a modular unit construction system. Up to four automatic stations can be integrated in one machine. According to the customer specific application these stations are configured from
- 15 different tools and
- 8 axis systems with 3 speed ranges.

This modular system offers a set of advantages:
- application of the optimal procedure
- use of established standard components
- uniform control concept
- flexibility concerning extensions to new products

and thus
- high process stability and availability
- minimal costs and
- high investment safety references:



References:

Considerable companies of the automobile supplying and electronic industry as well as mechanical engineering enterprises and institutes for development already successfully use the ATN systems, e.g.:

Automotive
Bosch
Continental
Delphi Automotive
ETO Magnetic
Flextronics
Hirschmann
Leoni Bordnetze
Magna
Pierburg
Preh
...

Electronics
Infineon
Braun
BuS Elektronik
Osram
Philips
Phoenix
Siemens
Tyco Pretma
Vishay
Wiebrock
...

Automation
Bosch ATMO
GL Engineering
IMS B.V. Almelo
Kuka Systems
Preh Engineering
Ruhlatat
TAS Maschinenbau
Reis Robotics
Teamtechnik
USK
...

Research & Development
FH Augsburg
FNE Freiberg
Fraunhofer IPA, Stuttgart
Fraunhofer IPK, Berlin
Fraunhofer ILT, Aachen
Inst.f.Solartechnik, Frankfurt
Technische Uni Berlin
Technische Uni Dresden
Universität Stuttgart
Universität Wien
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