Flexible Chip-Mounter FCM4080
Diebonding, Diesorting, Dispensing, Flip Chip, SMD, C O B, M C M
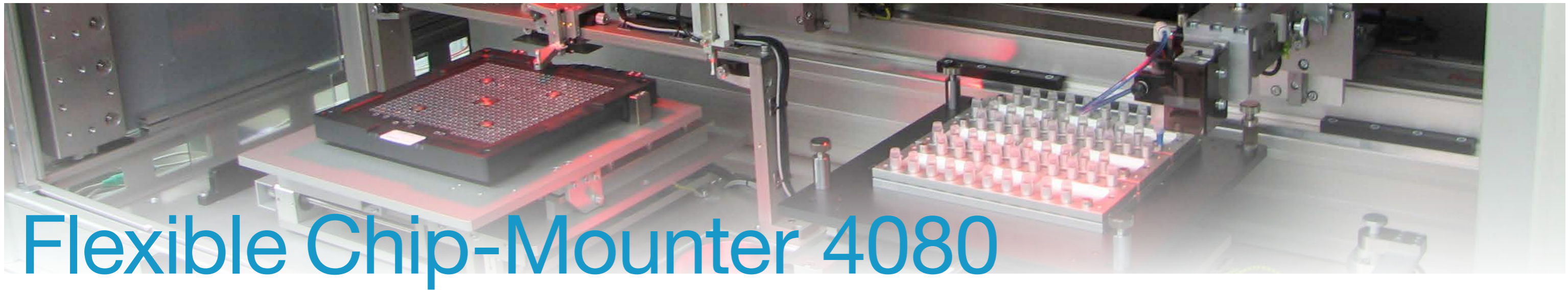

- **Flexible chip mounter for small to medium production volume**

- **Programming and operating via touchscreen and Graphical User Interface**

- **Vision system (optional for fully automatic process)**

Ziemann & Urban GmbH
Prüf- und Automatisierungstechnik

Flexible Chip-Mounter 4080

Powerful – robust – flexible

The chip mounter FCM 4080 is a highly flexible machine for design laboratories and small to medium lot size production.

The FCM 4080 has the capability for a high range of pick and place applications such as die bonding, Flip Chip processing, SMD placement, die sorting, stamping or dispensing of epoxy and solder paste as well as applying solder preform.

For a wide range of applications

The **FCM 4080** can be easily upgraded from a semi-automatic machine to a fully automatic diebonder with automatic alignment via **vision system**.
The machine can be **adapted** to individual requirements through step by step upgrades with minimal effort.
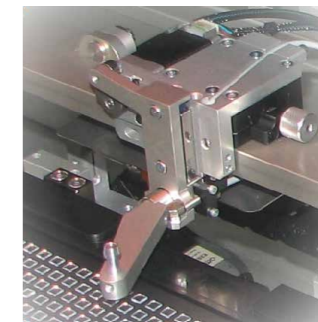
This high flexibility provides the chance to start production with **minimal investment** and let the equipment **grow** with increasing production or new applications.

User friendly, menu driven programming, quick tool change and simple product change over help to minimize production cost. The open structure and the flexibility of the machine allows a wide range of system configurations. A variety of special applications can be realized e.g. utilization as a prober, applications in medical technology, various dispensing tasks, component placing with contact pressure up to 50 N.
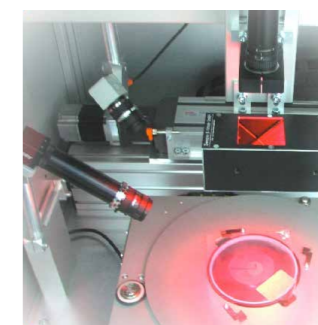
Examples of possible options
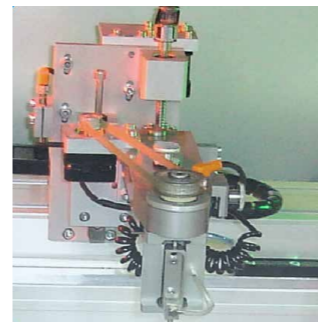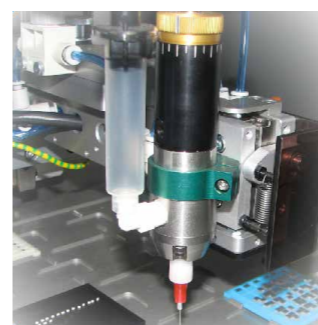
Pick & Place Head
vacuum pickup,
rotary bondhead

3rd camera option
for high accuracy
Flip Chip application or chip inspection

Glue application
Dispenser,
stamping with rotating epoxy squeegee,
Tool changer with 2 stamps

Touch Screen
user interface

Flip Chip
optional Flip Chip processing

Alignment
standard: manual alignment via video system
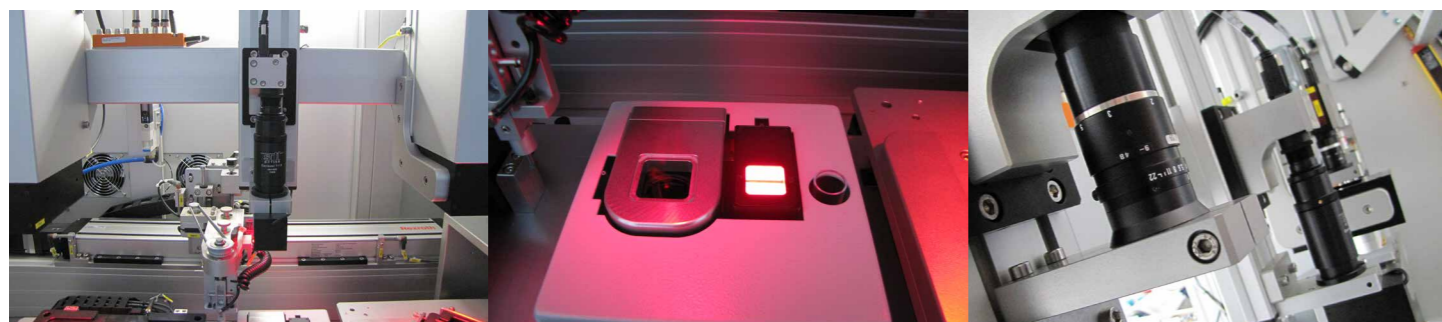optional: fully automatic alignment via vision system
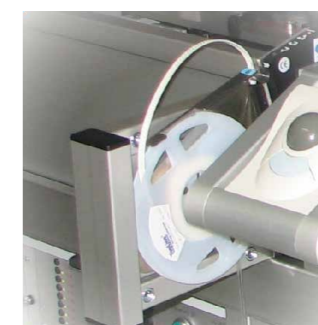
Tape feeder
option for up to
6 tape feeders

Technical Description

Design

- ALFrame with solid base plate
- One x/y-table each for die-pick-up and die-attach. Driving range of the table is 8".
- The chip-pickup table can be equipped with a variety of holders for film frames, wafer rings, waffle trays and gel packs.
- The substrate table has a flat surface with several threads in order to accommodate standard workholders or customer specific workholders.
- Die eject unit in order to lift the chips from film (optional). The die ejector is available with single or multiple needle ejector heads.
- Pick & Place- head with x-z motion. After aligning the die-pickup- and attach position the chip will be fully automatically picked up and positioned on the substrate.
- Dispense arm for glue application. It applies the media (glue, solder paste or preform) simultaneuosly while the first arm picks up the die. This simultaneous process reduces the process time. The dispense arm can optionally be equipped with a dispense head, a stamp/ print tool or a pickup tool. The tool holders are spring-loaded. The bond force is adjustable.
- DC-motor driven rotating epoxy-pot (optional) with adjustable RPM and squeegee for glue application in the stamping mode.
- Two vertically fix mounted cameras. The cameras are positioned above the pick-up and attach position. In the semiautomatic version the alignment is done via monitor and programmable frame on the screen, in the fully automatic version via vision system.
- Flip Chip system on wafer table (optional).
- Additional camera (optional) for precise position detection or for automatically optical chip underside inspection.
- Operating via Touchscreen

Technical Data

Chip size:	0,2 x 0,2 mm² to 20 x 20 mm²
Accuracy:	+/- 25 µm (chip size up to 3 x 3 mm²)
	+/- 15 µm for flip-chip (chipsize up to 3 x 3 mm²)
Multichip capability:	up to 16 different chips programmable (waffle tray / gel pack applications)
Working area:	8" version: 210 x 210 mm²
Waffle tray capacity:	8" version: 16 units 2" x 2" 4 units 4" x 4"
SMD placement:	up to 6 tape feeders (optional)
Die eject unit:	single or multiple needle system (optional)
Dispenser:	time/pressure dispenser or volume controlled dispenser, dispense pattern programmable (optional)
Epoxy stamping unit:	rotating epoxy pot with squeegee (optional)
Pick & Place process:	fully automatic after positioning
Vision system:	ZU-Vision Vision System for automatic positioning and inspection
Cameras:	GigE industrial cameras
Programming:	via touch screen
Controller:	Industrial PC with ZU-Control software
Machine speed:	approx. 3 s per chip
Dimensions:	1520 mm x 900 mm x 1700 mm (l x d x h) w/o touch screen
Weight:	approx. 350 kg (depending on options)
Power requirements:	Voltage: 220 / 240 V50 Hz, approx. 1500 W
	air: 6 bar dry air
	vacuum: -0,80 bar