



Automation

When?

Welding rate

- ▶ Manual 8 studs/min
- ▶ Automatic gun 12 studs/min
- ▶ CNC controlled > 12 studs/min

Positioning accuracy

- ▶ ± 0.15 mm for mild steel, stainless steel and ± 0.2 mm for aluminum (depending on work piece and stud geometry)

Stud volume / application

- ▶ 50.000 to 1 Mio.

Process reliability

- ▶ Constant plunge in
- ▶ Constant lift off
- ▶ No tilting etc.
- ▶ High reproducibility etc.

Advantages

- ▶ Reducing of the costs per unit
- ▶ Increasing the quality

Variants

Automatic welding gun

- ▶ Low investment costs
- ▶ Simple handling
- ▶ Mobile

PC-S

- ▶ Stationary welding head
- ▶ High positioning accuracy
- ▶ Jigs (turn table, etc.)

PC-C

- ▶ Low cost CNC machine
- ▶ Simple programming
- ▶ High flexibility

MPW

- ▶ High tech CNC stud welding machine
- ▶ Modular set-up, various machine sizes etc.
- ▶ Special software for stud welding

Variants

Robot applications

- ▶ Flexible manufacturing
- ▶ Welding in “three-dimensional space”

Specials

- ▶ Based on components PC-S, PC-C, TKM

Integrated solutions

- ▶ Customized

Welding gun PAH-1



VBZ-3
Fully automatic
stud feeder



CDM 2401
Power unit

PC-S

Power unit

- ▶ CDM 1601

Welding head

- ▶ KAH 412
- ▶ Manual stud feeding

Variants

- ▶ Manual stud feeding
- ▶ Automatic stud feeding (VBZ-3)
- ▶ Housing (noise, security, spatter)
- ▶ Drawn arc power units
- ▶ Accessories
- ▶ Indexing turn table
- ▶ Work piece fixtures etc.



PC-C

Features

- ▶ Working range 500 x 300 mm
- ▶ Pneumatic work stroke 125 mm
- ▶ Automatic stud feeding
- ▶ Positioning accuracy ± 0.2 mm
- ▶ Welding rate up to 15 studs/min
- ▶ Welding program storage capacity
10/25 or 20/17 welding programs/studs
- ▶ Drawn arc or CD welding

Optional

- ▶ Housing
- ▶ Accessories
- ▶ Work piece fixtures
etc.



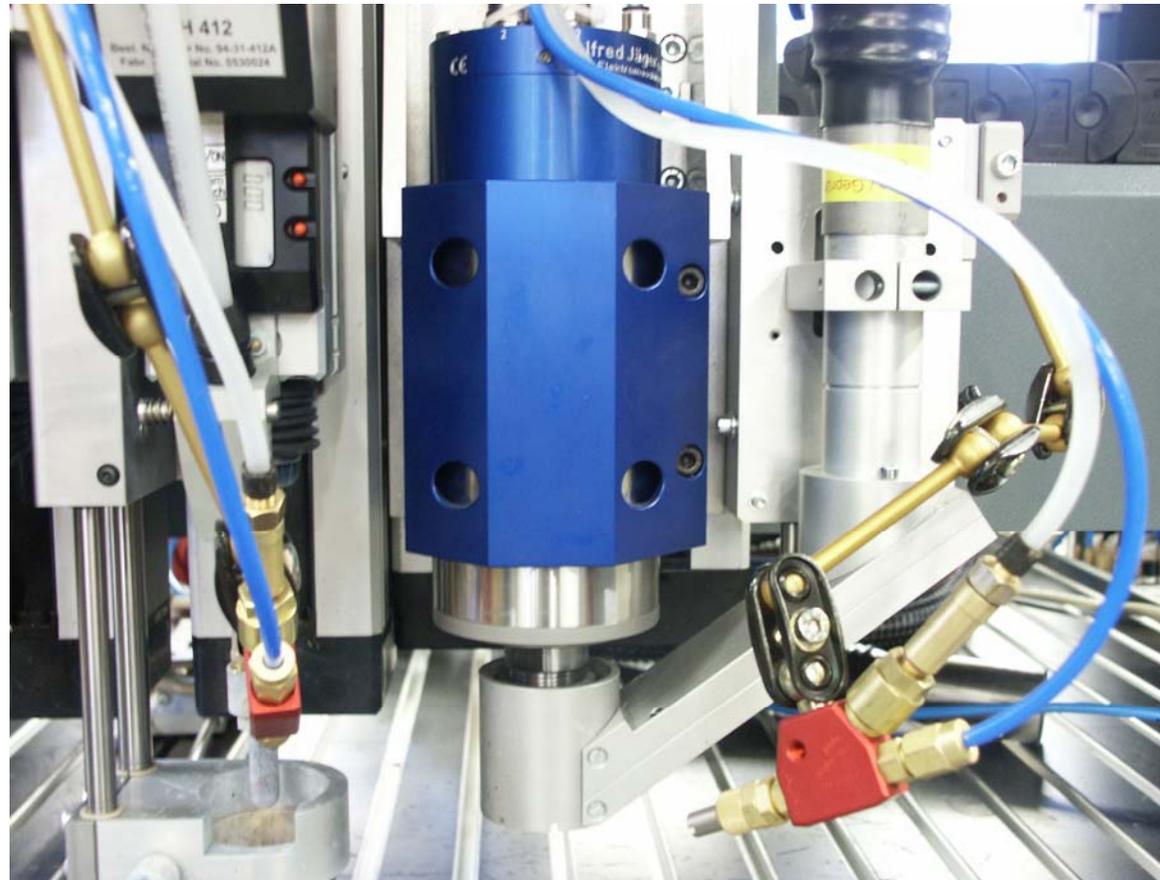
MPW 1010 and 2010



Two welding heads

- ▶ Motored z-axis
- ▶ Pneumatic z-axis with pneumatic down holder

MPW 1010 and 2010



- ▶ Milling head with vacuum device

Roboter applications

KAH 412
Automatic
welding head



VBZ-3
Fully automatic
stud feeder



ARC 800
Power unit



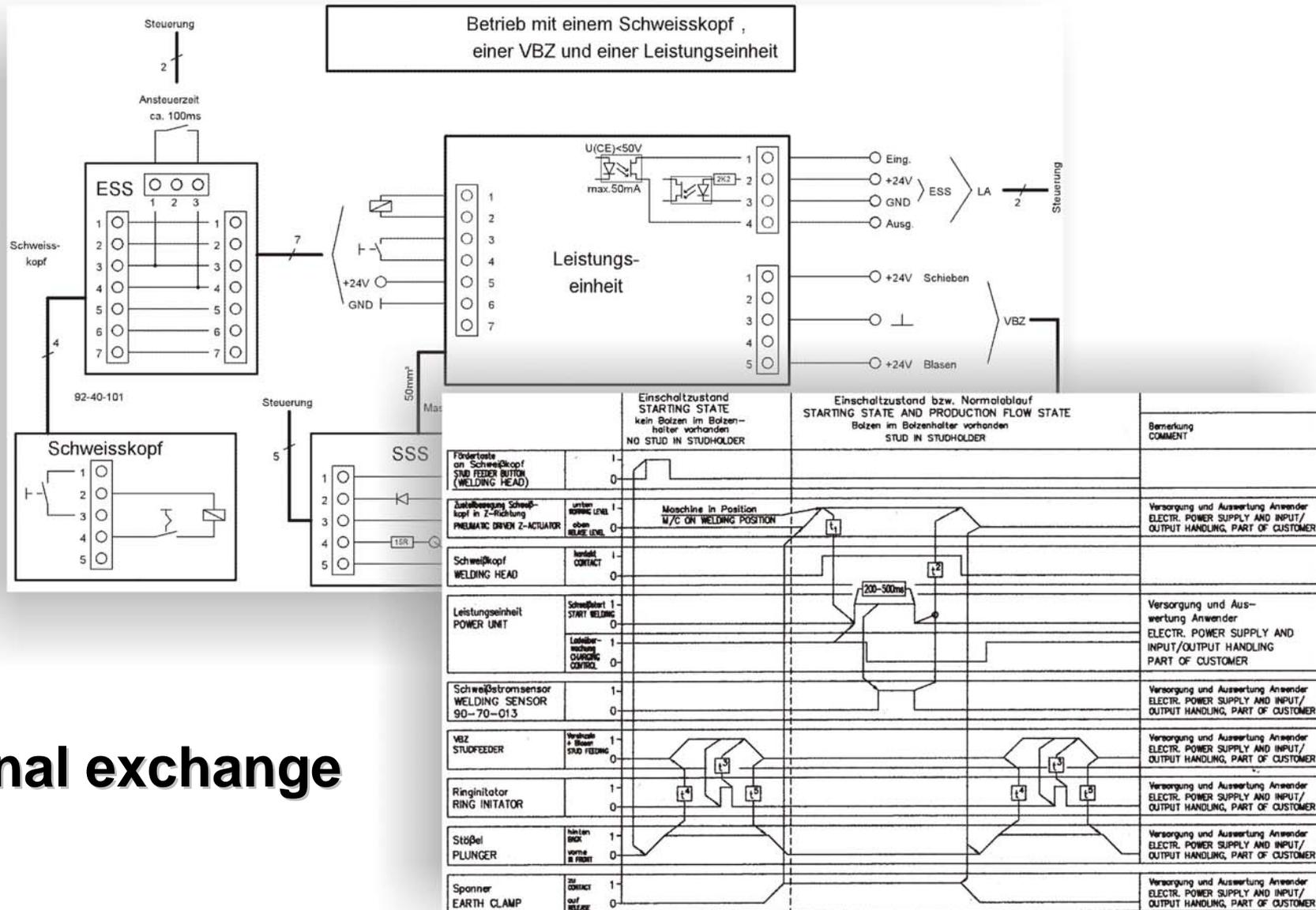
Roboter application



- ▶ Telephone box
- ▶ Stainless steel

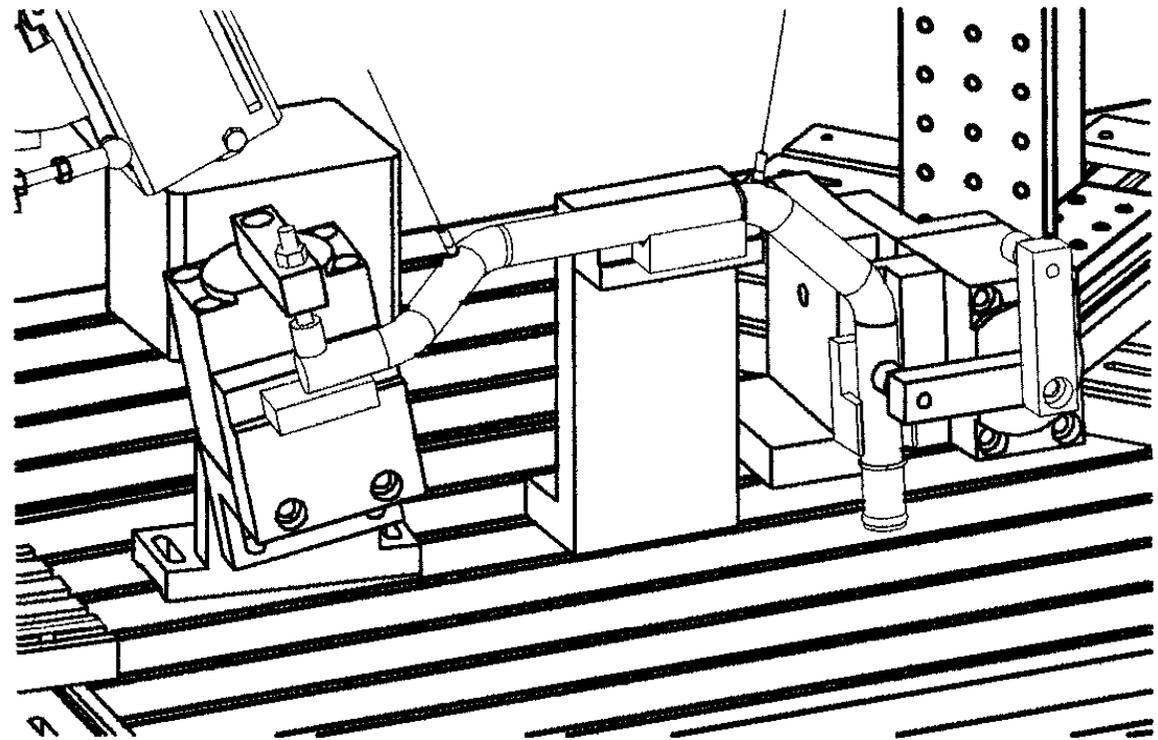
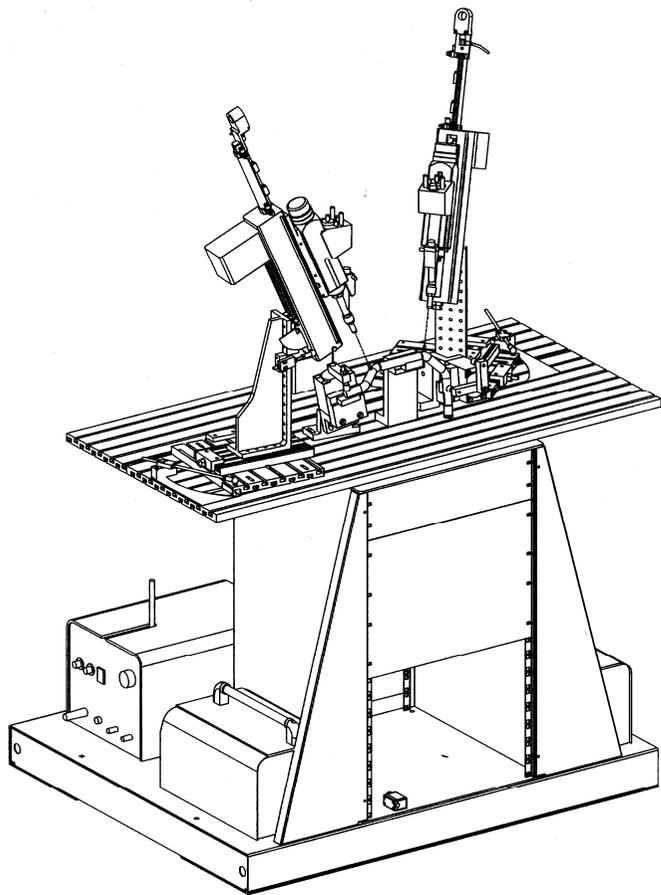


Roboter application



Signal exchange

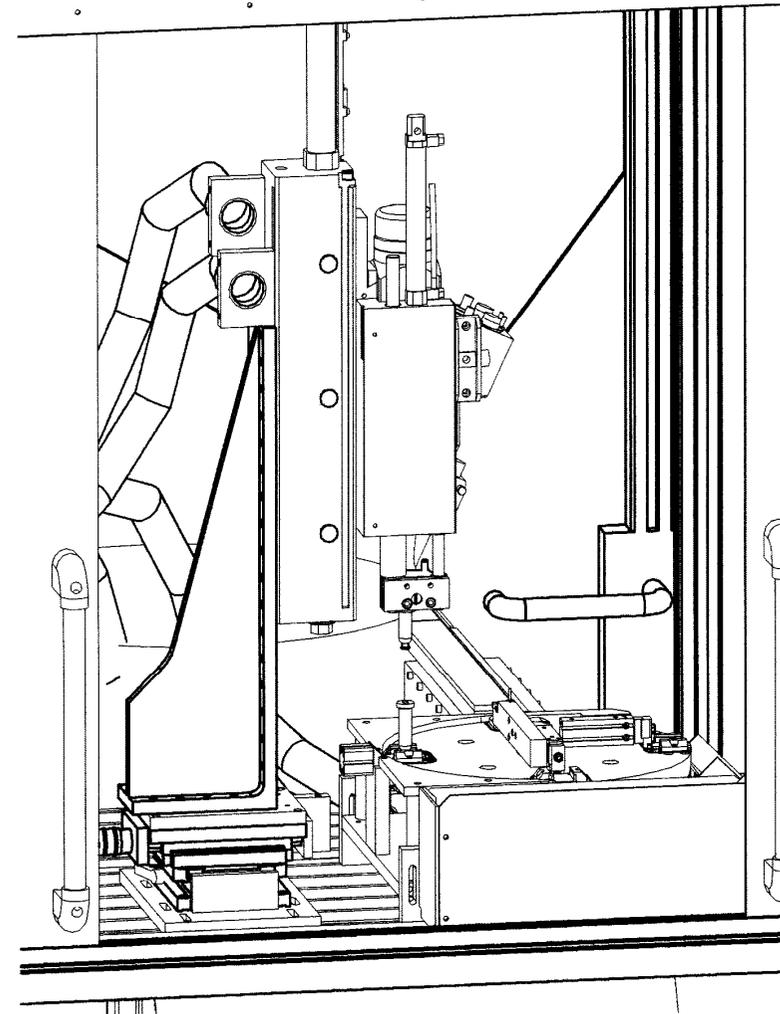
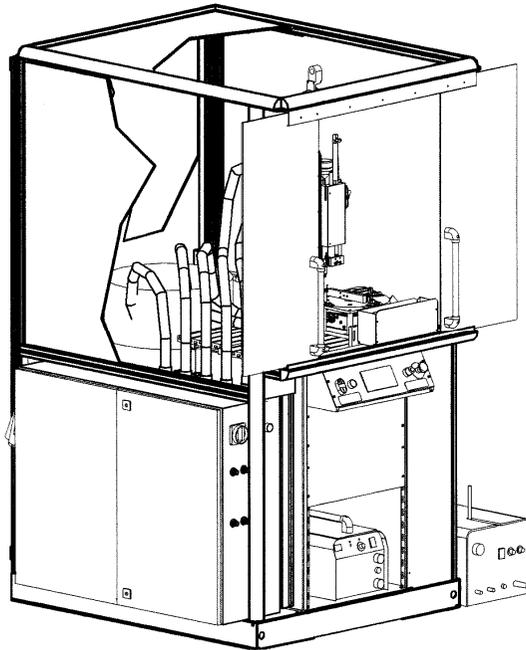
Special PC-S Pipe for car air conditioning System



Special PC-S Pipe for air conditioning



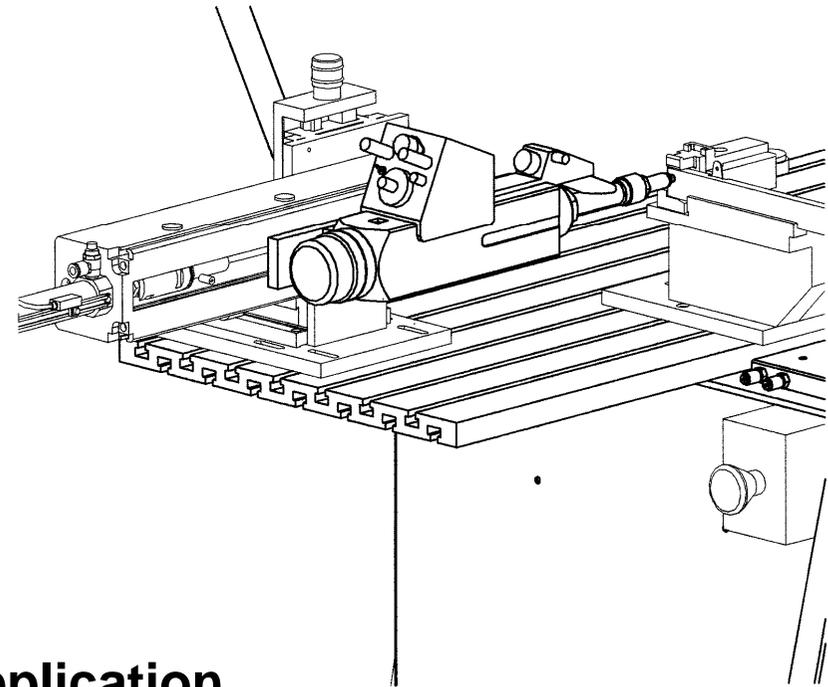
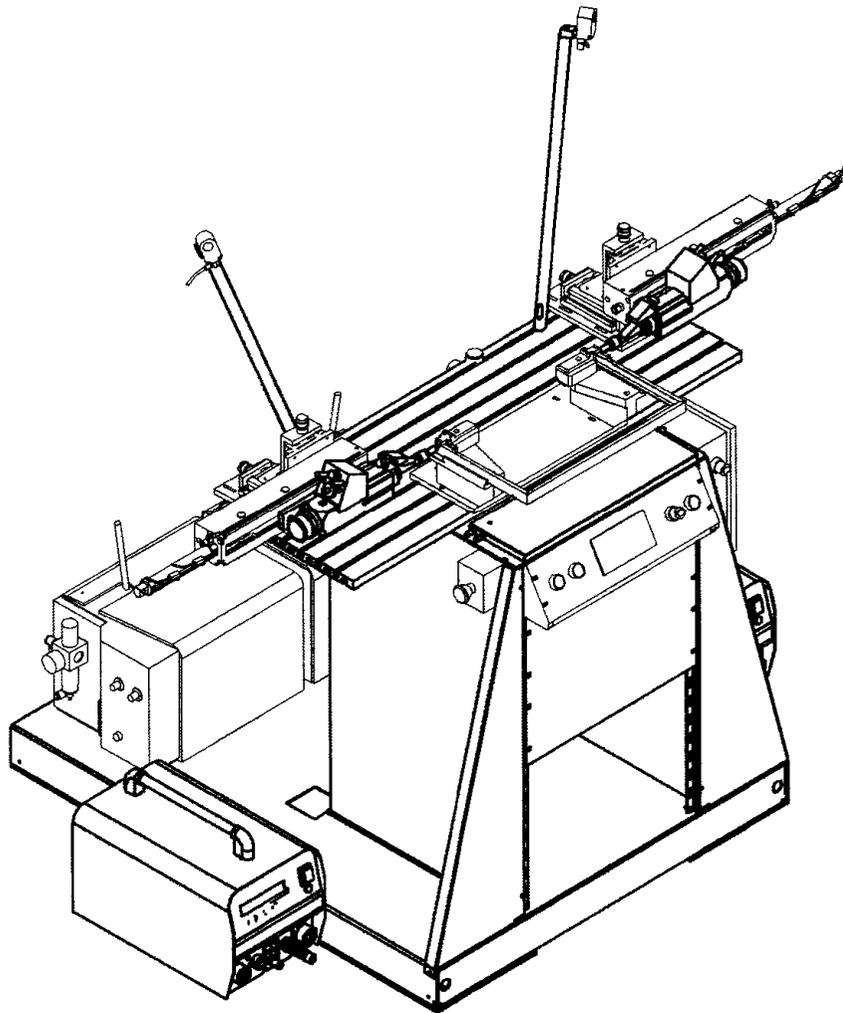
Special PC-S Fixation Clip for cattle grid



Features

- ▶ Automatic stud- and work piece feeding
- ▶ Indexing turn table
- ▶ Welding control with automatic discharge

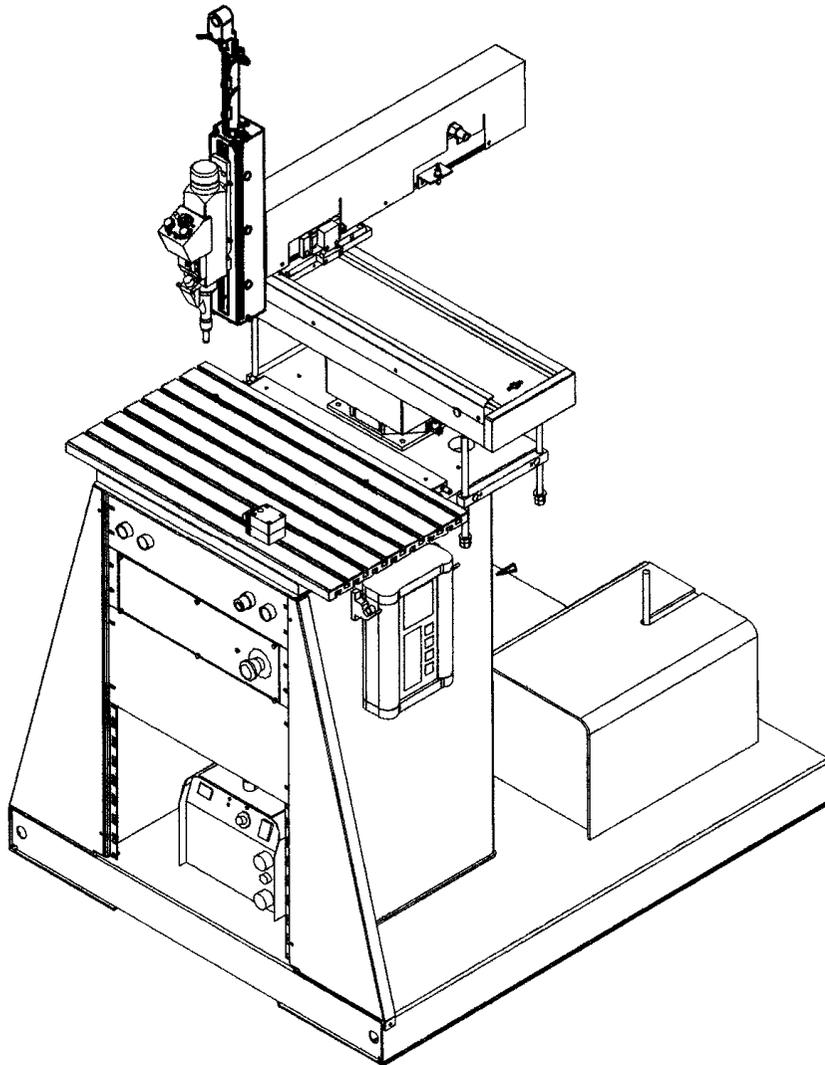
Special PC-S 2 heads / 2 pneumatic Z axes



Application

- ▶ Door frame for wood stove
- ▶ Easy change over to a second stud dimension
- ▶ Work piece fixture with grounding

Special PC-C



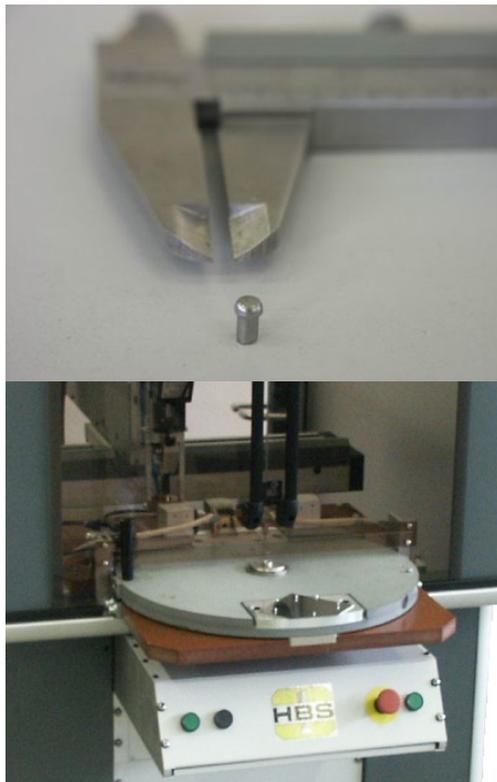
Pneumatic Lift table

- ▶ Z1 0 - 45 mm
- ▶ Z2 120 - 165 mm

Application

- ▶ Work pieces with different welding levels

Special PC-C with turn table



Application

- ▶ Cup holder for commercial coffee machine

Features

- ▶ Short cycle shielding gas
- ▶ Manual turn table with welding and loading/unloading position
- ▶ Special pin with “up-side-down” feeding system



Special PC-C

Revolving work piece carrier

Application

- ▶ Carrier for solenoids (automotive)

Features

- ▶ Short cycle shielding gas
- ▶ CNC controlled revolving work piece carrier
- ▶ Automatic welding cycle for 4 studs
- ▶ Welding head with shielding gas tube/end stop for work piece height compensation
- ▶ Special stud with
 - welding geometry at both ends for simple feeding
 - high tensile strength (quality 5.8)
- ▶ Integrated welding sequence control



Special CNC

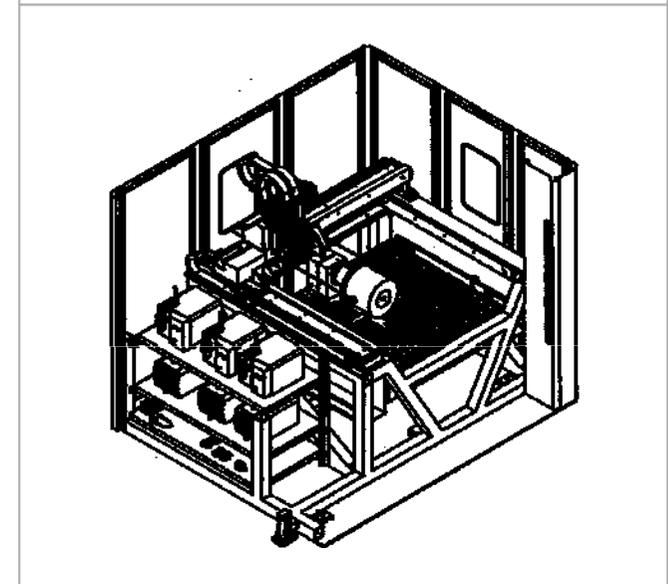


Application

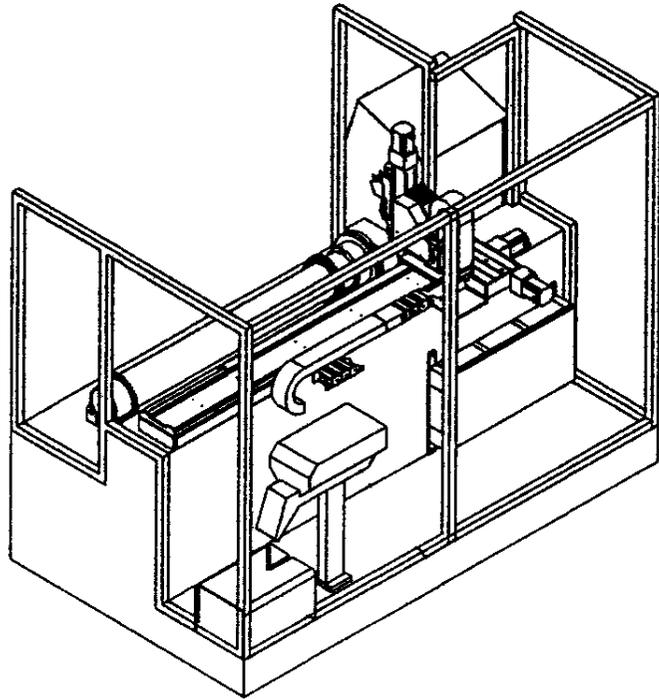
- ▶ Components for commercial coffee machines

Features

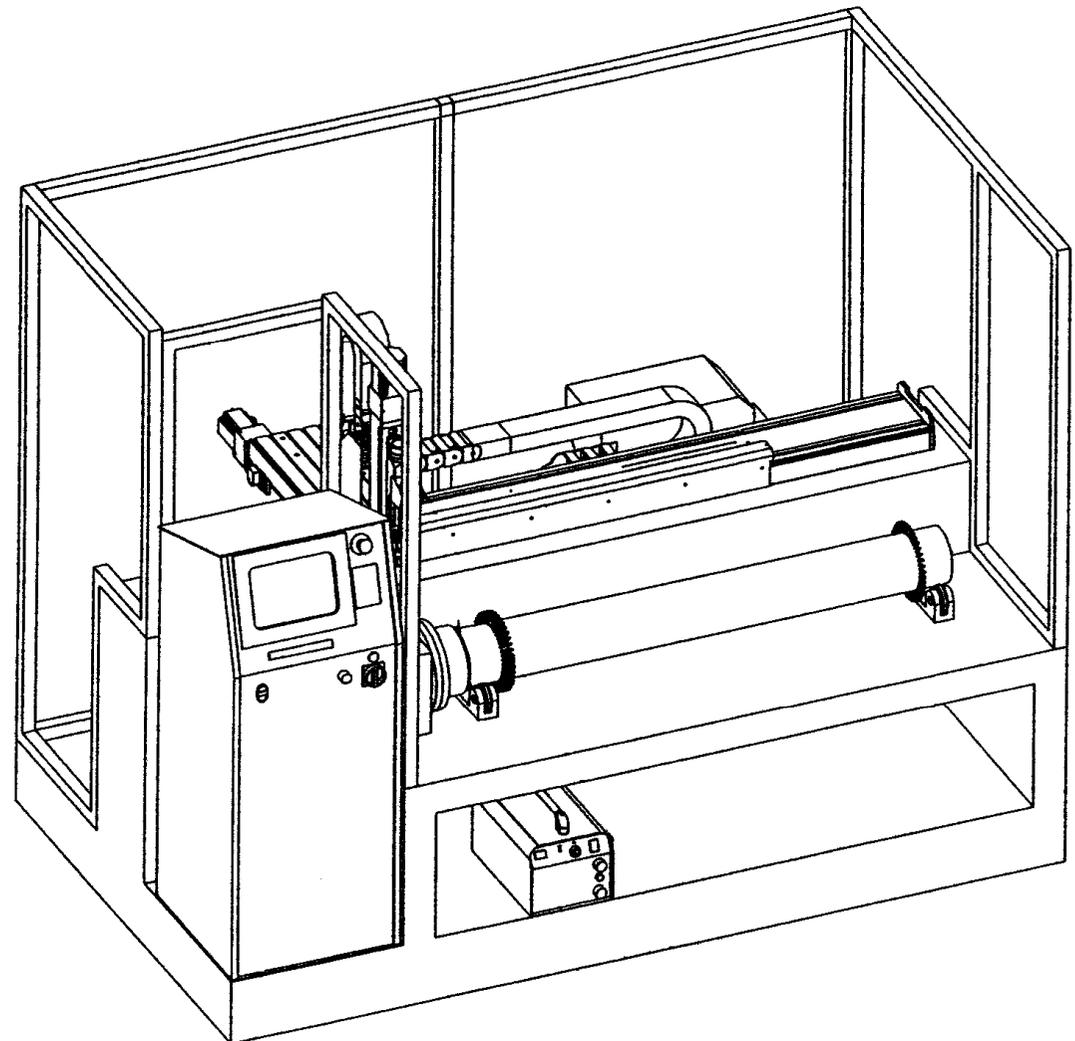
- ▶ 8 CNC controlled axes
- ▶ Welding table with adjustable level (500 mm)
- ▶ 3 welding heads, 1 swivelling welding head (60°)
- ▶ Housing with integrated light gate
- ▶ CD welding process



Special CNC Heat exchanger

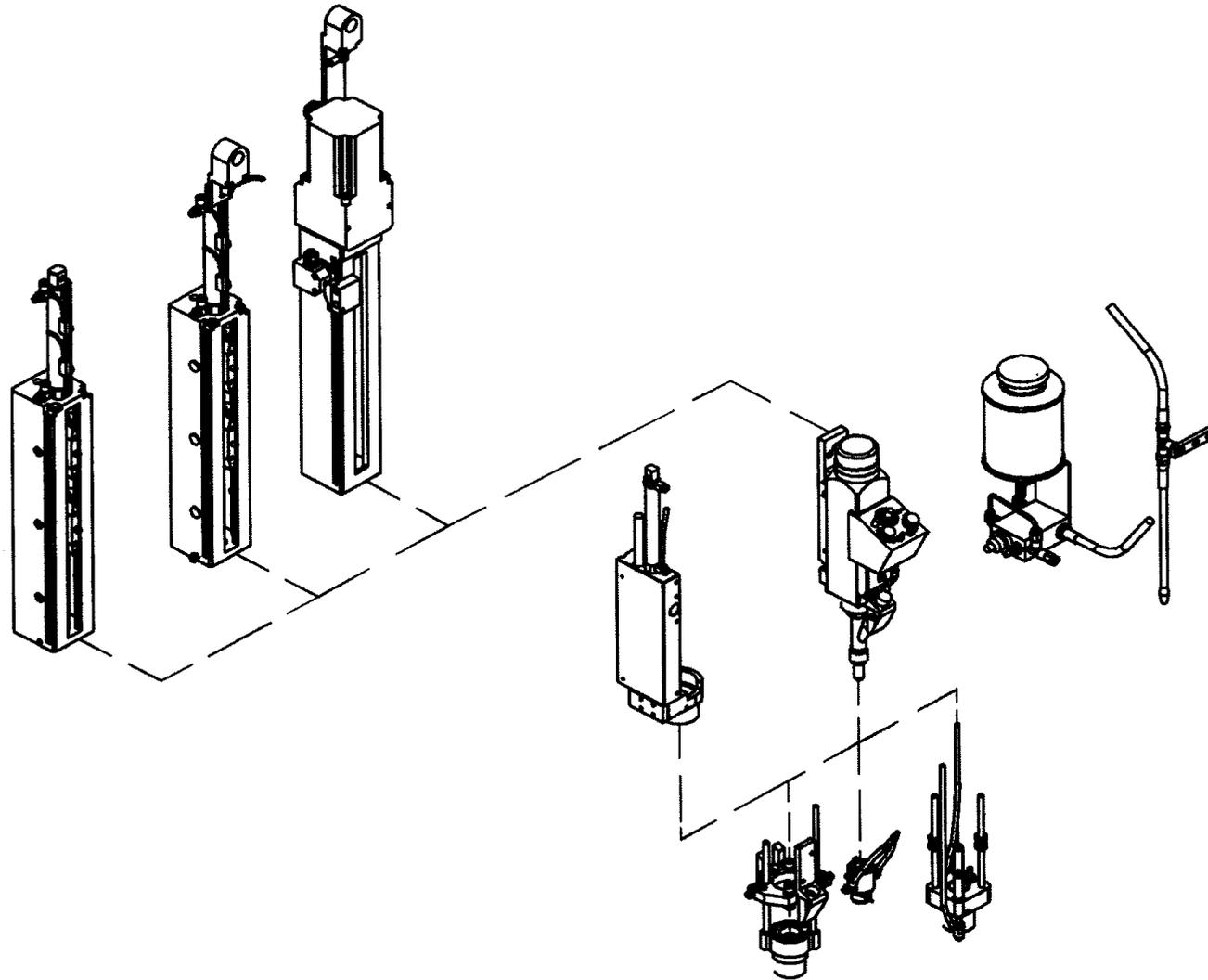


- ▶ Welding head KAH 412
- ▶ Power unit ARC 800 AT
- ▶ Feeder VBZ-3
- ▶ Conveyor bin for studs



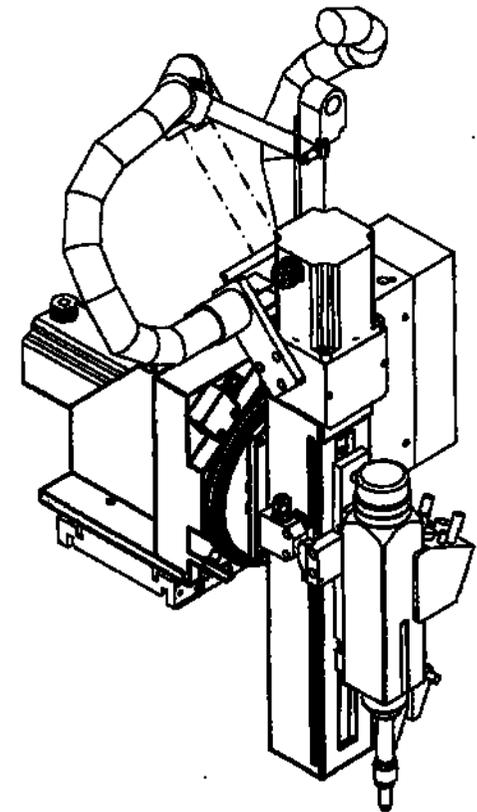
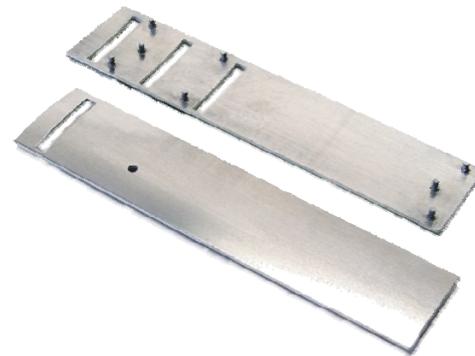
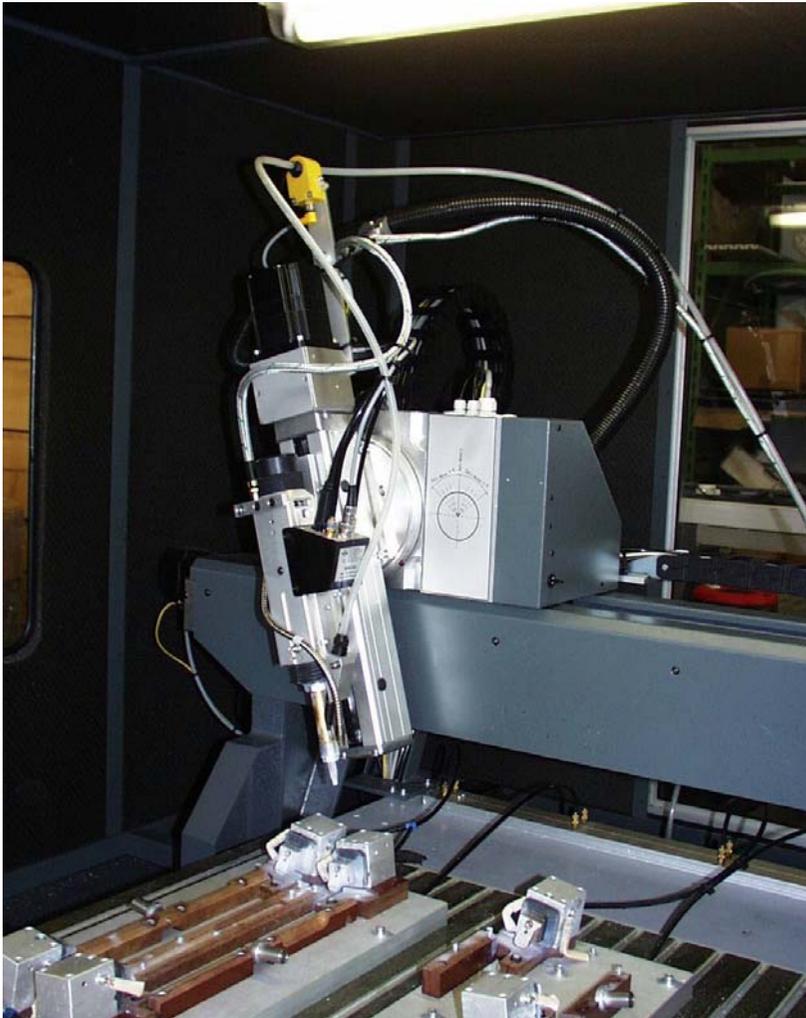
Integrated solutions

Module automatic welding head KAH 412

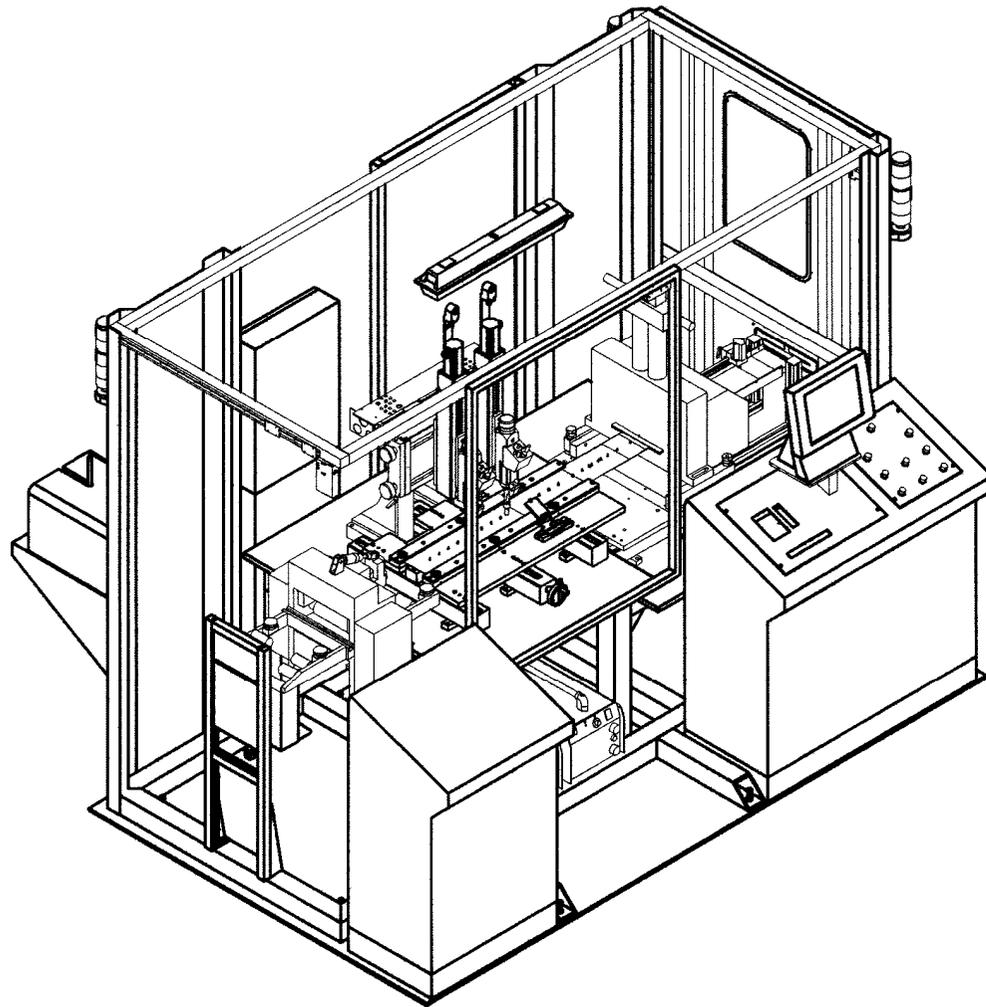


Integrated solutions

Tilting device for KAH 412

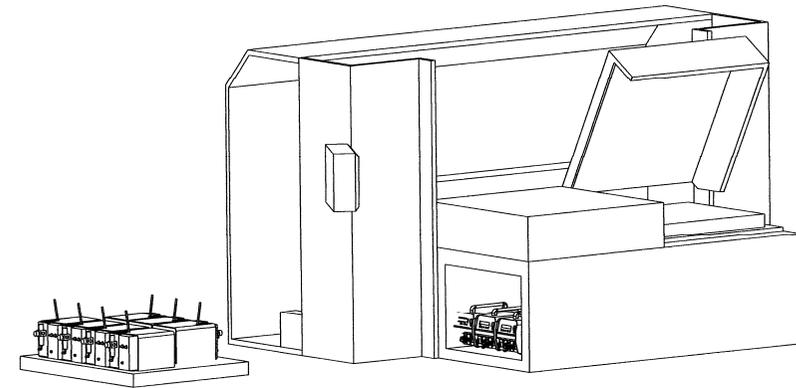
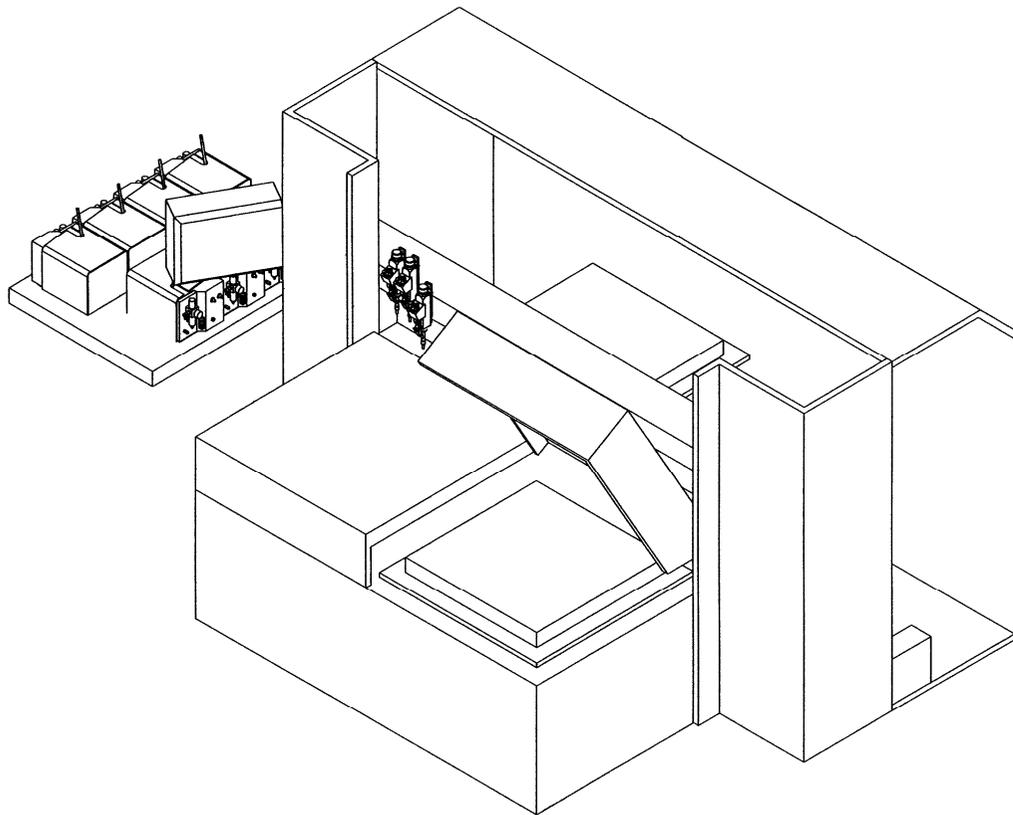


Customized solutions Bricklayer's trowel



- ▶ Steel band feeding from coil
- ▶ 2 step welding (4 studs)
- ▶ Steel band cutting
- ▶ Adapted to the needs of handicapped persons (wheel chair)

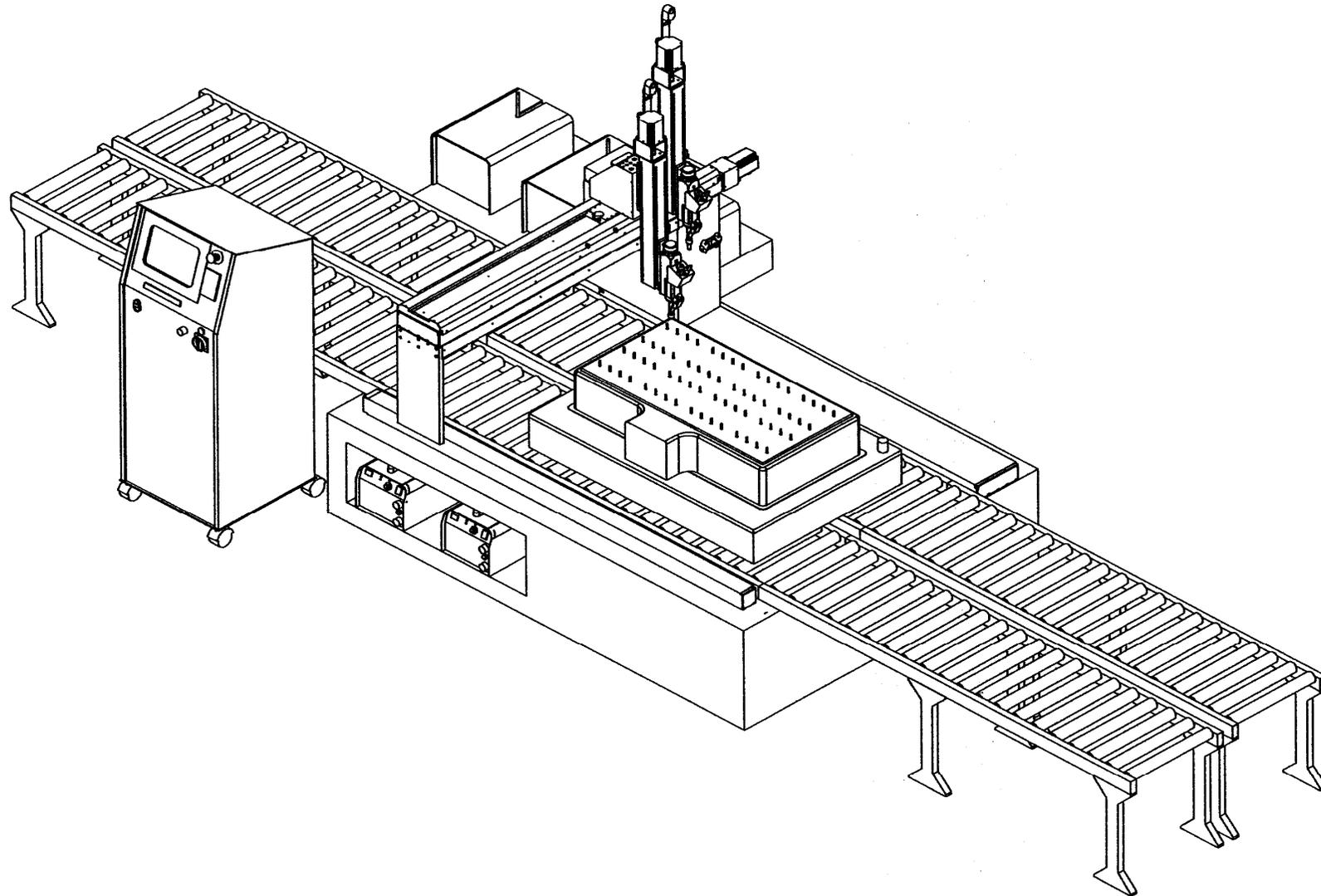
Customized solutions CNC Indexing table



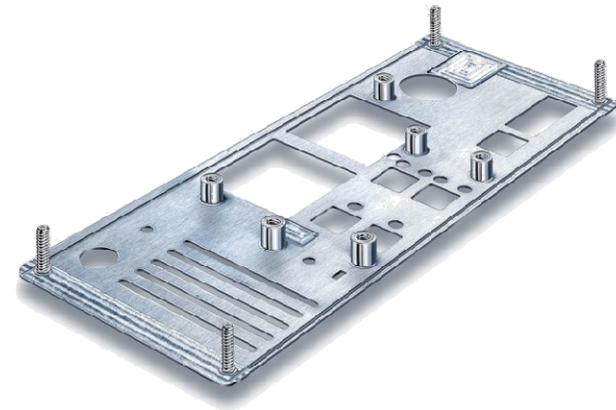
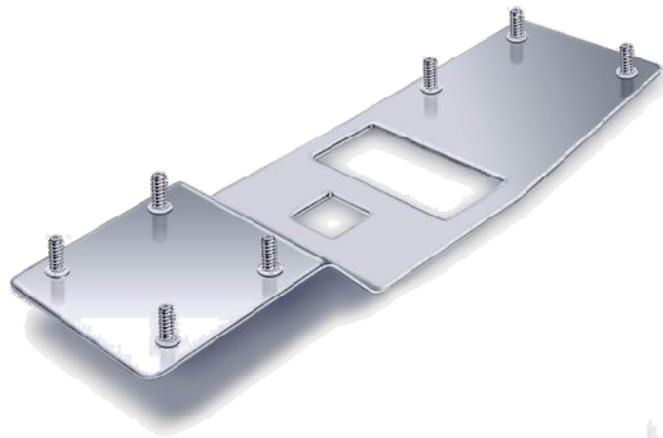
Features

- ▶ 2 welding heads
- ▶ 6 different studs
- ▶ Loading/unloading table / Welding table
- ▶ CNC controlled table movement (y-axis)
- ▶ CNC controlled x-axis
- ▶ Table locking device

Customized solutions Integrated CNC



Applications





**Thank you for
your attention**

Automation