

Servo motor-driven clinching system



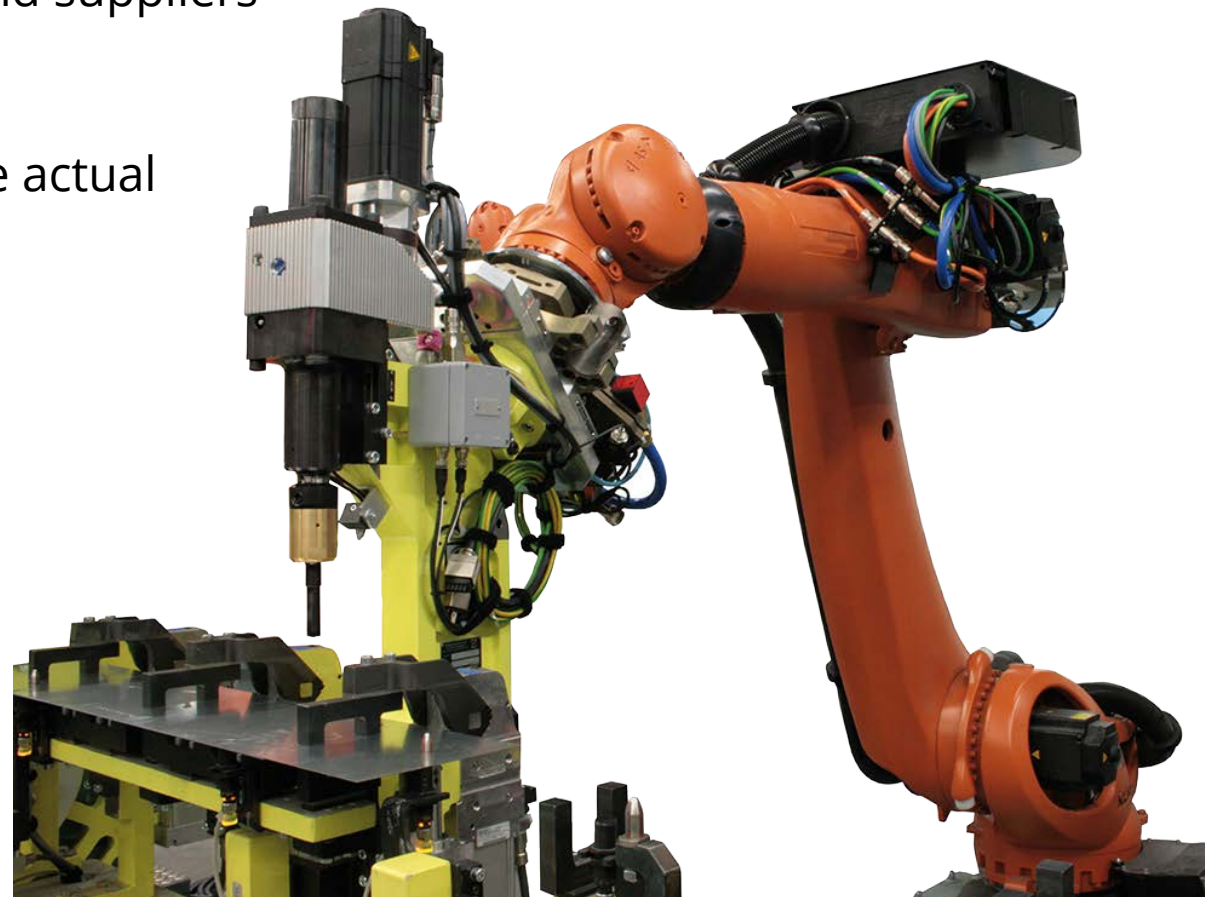
Clinching solutions for the automated production

- application in the field of automated production at leading manufacturers, plant manufacturers and suppliers of the automotive industry worldwide
- individually configured according to the actual joining tasks
- joining types R-DF or CONFIX
- clinching frame geometry

Drive



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Advantages and characteristics

- versatile clinching frame range
- compact design
- low machine weight
- optimised centre of gravity
- easy access to workpieces and machine components
- secondary cost savings as production plant design is made easy
- simple clamping processes
- suitable for use with low-load robots

Advantages and characteristics

- minimum load on robot axles
- energy consumption approx. 30 % lower than with hydro-pneumatic drive systems
- low-maintenance design
- environmentally-friendly technology
- multiple joining tasks can be performed with a single clinching frame
- individually configurable movement profiles for cycle time optimisation
- movement profile configuration with reference to path, time, speed and acceleration
- reproducible results
- ECKOLD process monitoring system



Standardised components: clinching type R-DF



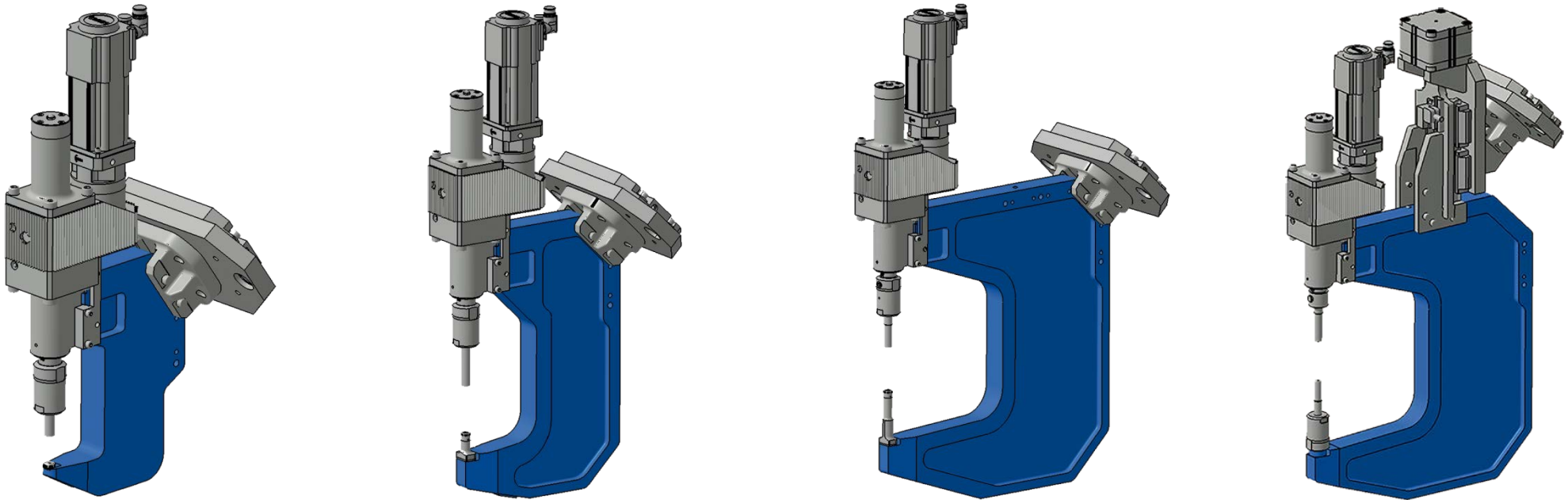
- 1 Clinching frame for robot integration with servo motor drive and clinching tools
- 2 Control cabinet with servo regulator and integrated process monitoring system including visualization software
- 3 Cable set
- 4 Micro spray system (optional)

Standardised components: clinching type CONFIX



- 1 CONFIX frame for robot integration with servo motor drive, feed unit and CONFIX tools
- 2 Control cabinet with servo regulator and integrated process monitoring system including visualization software
- 3 Cable set

Various clinching frames (standard models)



Individual solutions



Special clinching frame
(weight-optimised)

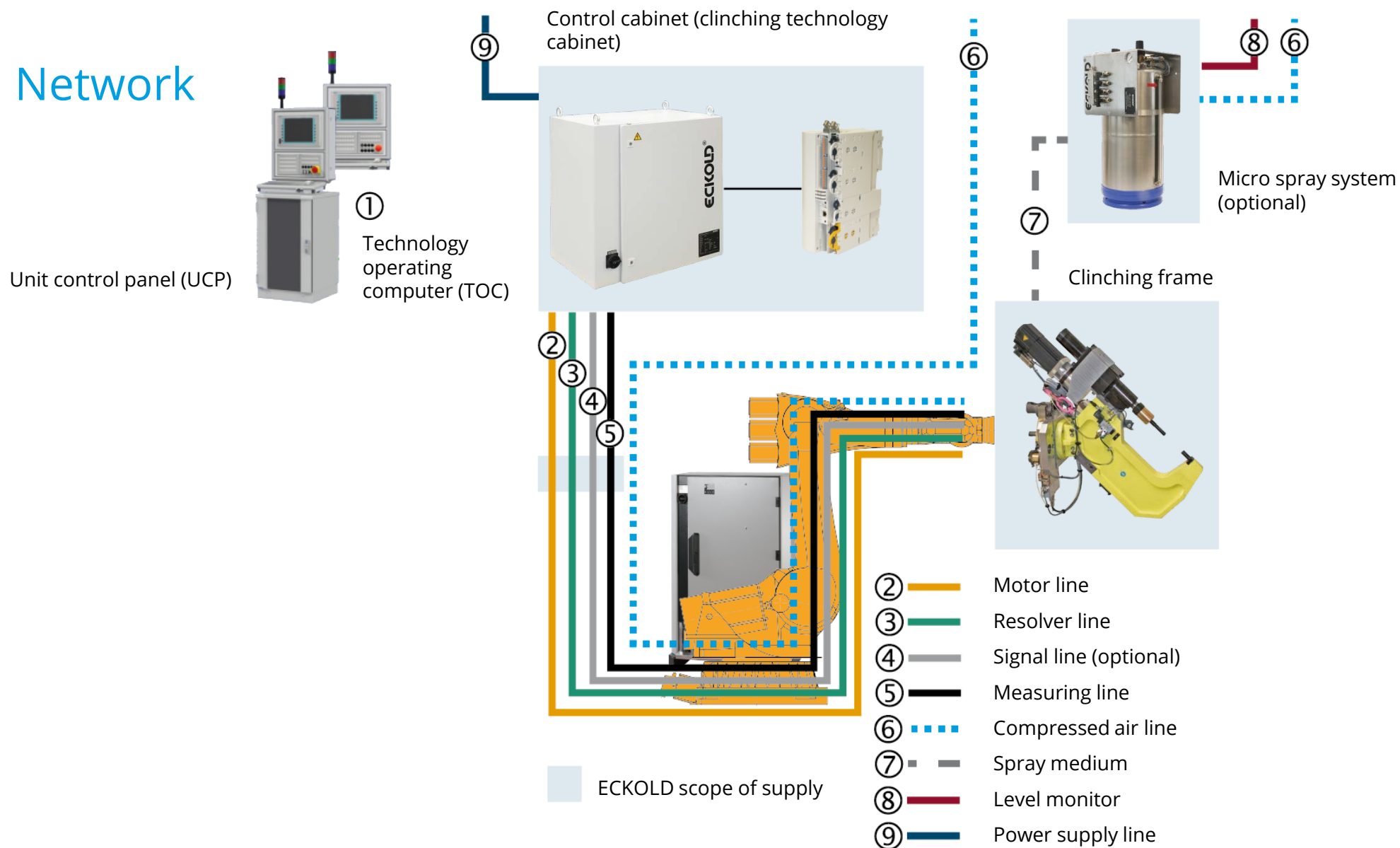


Control cabinets for
different climate zones



Clinching tools in various design
and shape, depending on
workpiece type and accessibility

Network

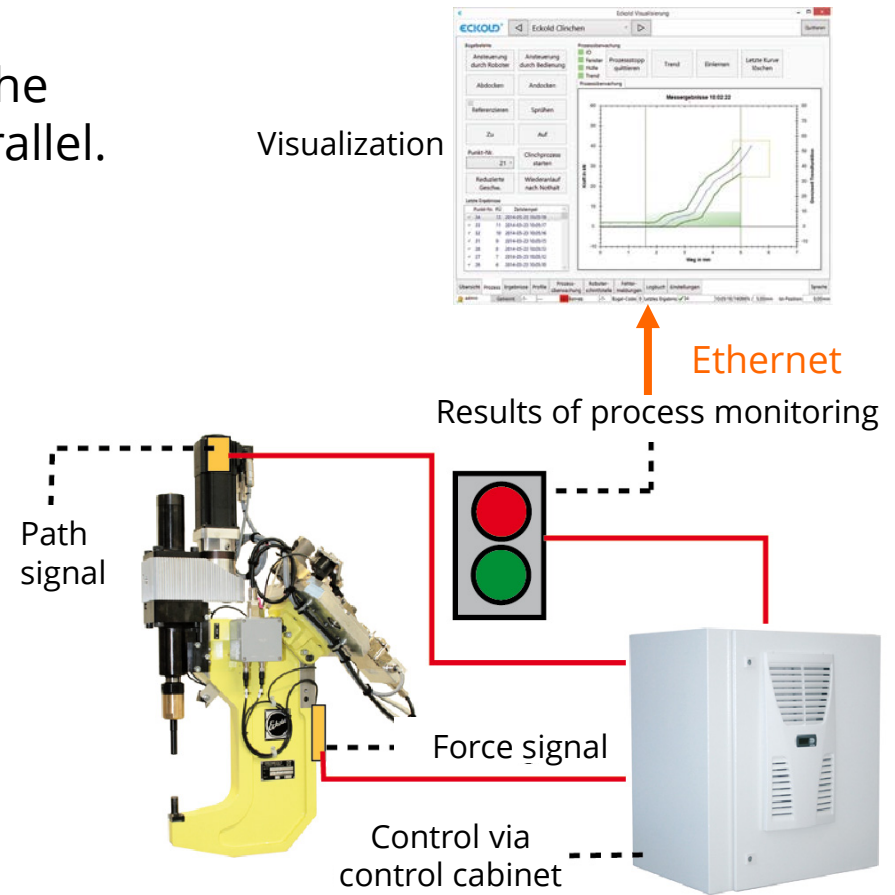


Control and visualization

- control cabinet containing the servo regulator for the drive and the integrated process monitoring system
- special software developed by ECKOLD
- visualization of the machine control and process monitoring tasks on the human machine interface (HMI)
- process monitoring system allows operators to configure, parameterize, monitor and document clinching processes
- detection of process and machine errors, e. g. use of incorrect workpieces or incorrect machine settings
- process monitoring methods: envelope, window and trend monitoring

Quality assurance and online process monitoring system

- The process monitoring system is designed for the monitoring of clinching processes working in parallel.
- processes may work synchronically or asynchronously
- The visualization and setting of the monitoring parameters is possible via a separate PC including visualization software or via a PC-based operating panel.



Monitoring principle

Quality assurance and online process monitoring system

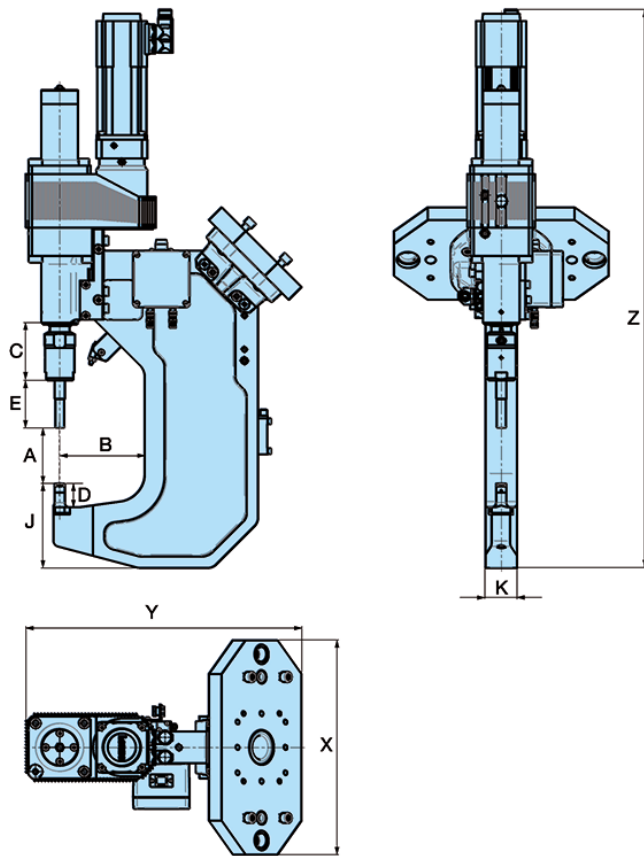
The online process monitoring system allows for seamless and continuous 100 % quality control, for instance in series production plants.

The special software developed by ECKOLD visualises both the machine control and all processes that need to be monitored on a single human machine interface (HMI).

For process monitoring, the system compares the current machine signals with reference monitoring signals.



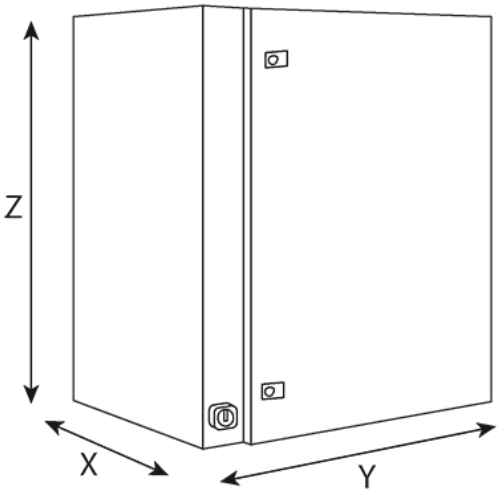
Technical data



Clinching frame	DFB-798	DFB-799	DFB-800	DFB-801
A	98.4 mm	47.9 mm	97.9 mm	97.9 mm
B	150.5 mm	100 mm	300,5 mm	300 mm
C	99 mm	99 mm	121.5 mm	48.5 mm
D	42 mm	6.8 mm	109 mm	171 mm
E	84.5 mm	44.5 mm	74.5 mm	89.9 mm
J	149.5 mm	75 mm	275.5 mm	337.5 mm
K	56 mm	56 mm	56 mm	56 mm
X width	380 mm	380 mm	380 mm	380 mm
Y length	488 mm	430 mm	738 mm	583.5 mm
Z height	989 mm	824,5 mm	1105 mm	1135.5 mm
Stroke length	100 mm	50 mm	100 mm	100 mm
Weight	112 kg	98 kg	144 kg	186 kg
Rated pneumatic pressure	6 bar	6 bar	6 bar	6 bar

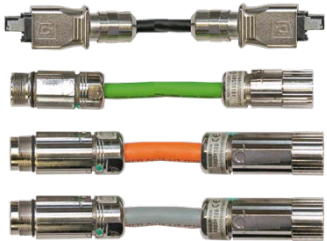
Technical data

Control cabinet



Control cabinet	EM-011	EM-012
X width	520 mm	570 mm
Y length	790 mm	790 mm
Z height	800 mm	800 mm
Weight	70 kg	76 kg
Power supply	400 V · 3 PH · 50 Hz	400 V · 3 PH · 50 Hz
Bus	Profinet	Profinet
Max. ambient temperature	40°C	45°C

Cable set



10 m

15 m



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