# **User report**

# Automotive industries



Clinching



Designation	Clinching frame	Clinching frame
Type	DFB-798	DFB-855
ldent no.	00000086439	00000087957
Manufactured	08/2012	08/2012
Order no.	585040	585040
Number	1 piece	6 pieces
Other		



Joining of various component parts in the rear car body (floor). The special characteristic is that the numerous joining points are also partly located deep in the rear body so that they can only be accessed with difficulty. This requires a high throat of the clinching frame which in turn implicates high weights for conventional clinching frames and the need for robots with suitable load capacities.



#### **Solution:**

The task was realized by 2 robot-guided clinching frames and a stationary clinching frame with component handling by robot. For application of the clinching frames, the order scope includes: Servo motor-driven clinching system with control cabinet EM-011, valve plate complete (ME 235) micro spray system and bowl (20 l) with process monitoring that is visualized on terminal SK 600.

#### **Customer rating:**

- always on-time deliveries
- unproblematic launch and use
- easy handling of user interface
- structured software
- good training material and structured qualification
- positively rated supplier

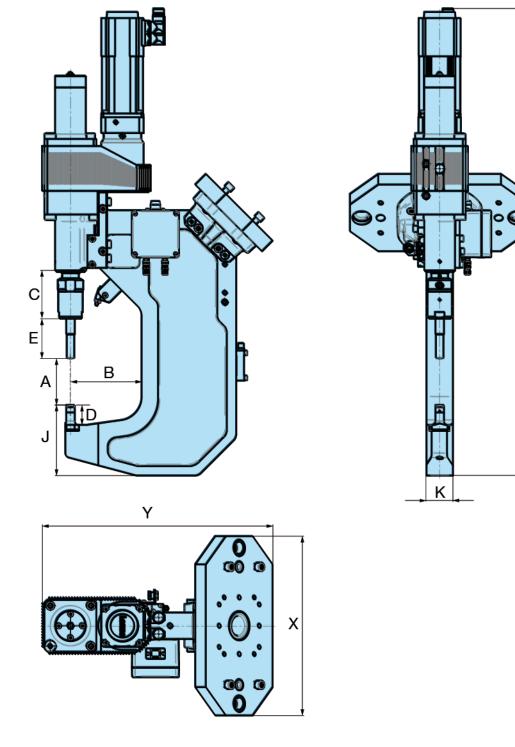






Name	Clinching frame
Туре	DFB-798
ldent no.	00000086439
Drive	servo motor-driven
Pressure force	max. 80 kN
Stroke length	100 mm
Pneumatic pressure	min. / max. 5 / 6 bar
Weight	112 kg

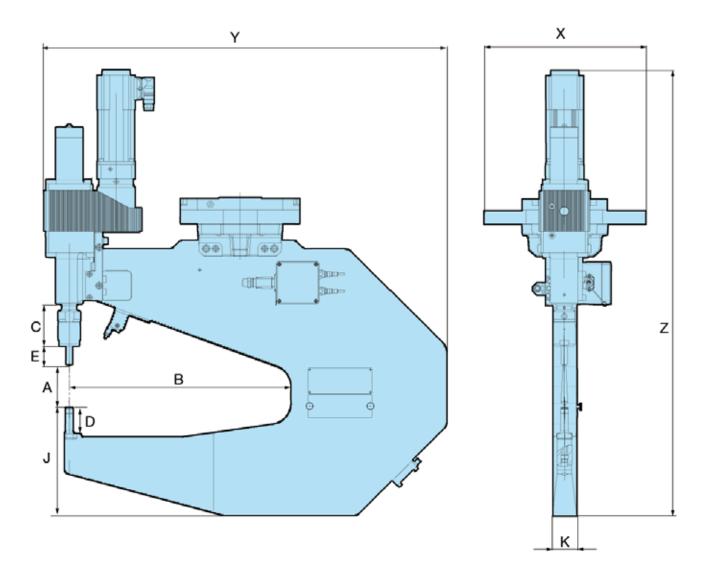
Opening width	[A]	[mm]	978,4
Throat depth, horizontal	[B]	[mm]	150,5
	[C]	[mm]	99
Tool holder protrusion at frame end	[D]	[mm]	42
Tool holder protrusion, ram side	[E]	[mm]	84,5
Frame end height	[]]	[mm]	149,5
C-frame width	[K]	[mm]	56
Width	[X]	[mm]	380
Length	[Y]	[mm]	488
Height	[Z]	[mm]	989



Ζ

Name	Clinching frame
Туре	DFB-855
ldent no.	00000087957
Drive	servo motor-driven
Pressure force	max. 80 kN
Stroke length	100 mm
Pneumatic pressure	min. / max. 5 / 6 bar
Weight	233 kg

Opening width	[A]	[mm]	98
Throat depth, horizontal	[B]	[mm]	520
	[C]	[mm]	99
Tool holder protrusion at frame end	[D]	[mm]	62
Tool holder protrusion, ram side	[E]	[mm]	44,5
Frame end height	[]]	[mm]	255
C-frame width	[K]	[mm]	56
Width	[X]	[mm]	380
Length	[Y]	[mm]	946
Height	[Z]	[mm]	1046



User report DFB-798 / 855 Clinching technique | **Eckold** 

Joining task		1	2	3	4
Clinching variant		R-DF 8	R-DF 8	R-DF 8	R-DF 8
Component	t <sub>1</sub>	Rear wall, top	Rear wall, top	Rear wall, top	Rear wall, top
Material	t <sub>1</sub>	Al	Al	Al	Al
Punch side layer thickness	t <sub>1</sub>	1,0 mm	1,0 mm	1,0 mm	1,0 mm
Intermediate layer		Clue Betamate 1620	Clue Betamate 1620	Clue Betamate 1620	Clue Betamate 1620
Component	t <sub>2</sub>	Console hinge	Crossbeam	holder rear wall	rear wall
Material	t <sub>2</sub>	mild steel	mild steel	mild steel	mild steel
Die side layer thickness	t <sub>2</sub>	0,75 mm	0,6 mm	2,0 mm	1,25 mm
No. of clinching points					

1

#### **Rear wall**

- 1 Rear wall, top2 Crossbeam
- 3 Console hinge
- 4 Holder rear wall (without illustration)



#### **Remark:**

The micro spray system is used:

For all aluminium joints.

The micro spray system is required for the clinching of dry or washed Al joints in order to prevent contact alloying between the Al part and the punch.

When clinching oiled sheets, the oil layer acts as a separating agent. One would therefore assume that there is no need for a spray system. As there is however often no guarantee that the entire surface of the oiled sheet is covered in an oil film, we recommend using a micro spray system (mandatory for Daimler suppliers).

3

## Servo motor-driven clinching system:

#### Overview and Setup:

- 1 **Clinching frame** for robot integration with servo motor drive and clinching tools (punch and die)
- 2 Micro spray system (optional accessory)
- 3 **Control cabinet** with servo regulator for drive unit and integrated process monitoring system, Visualisation software
- 4 **Cable set** for connection between control cabinet and clinching frame (in stationary design) and between control cabinet and robot base (when handling by robot)

#### Optional accessories:

- Micro spray system
- Floating mounting at clinching frame

(The illustrated components serve only as example and may differ in design and dimension.)





User report DFB-798 / 855 Clinching technique | **Eckold** 

#### **ECKOLD technics GmbH & Co. KG**

#### Trading successful for over 85 years

Since our company was established in 1936 by Walter Eckold, the only aspect of our business not to change from that year to this has been our commitment to our customers. Our priority remains to provide our customers with economical and environmentally viable cutting edge technological solutions to their ever changing manufacturing processes.

During our 80 years of trading we have amassed a knowledgeable highly skilled engineering workforce in our specialist areas of shaping and joining sheet metal. These specialist skills enable us to quote from one off standard pieces of equipment to fully tailor-made automated robotic systems. A full range of all our specialist techniques can be found in all sheet metal, craft and industry work-places. Join with us, the successful sheet metal experts, to shape your future metalworking solutions.

### Service von A-Z

- Tests and analyses for our customers
- Creation of sample sheets/components
- Preparation of feasibility studies for the design of moulds
- Concept development and constructive realisation of the technical solution
- Production in our own factory
- Commissioning at the customer's premises
- Carrying out regular maintenance
- · Support with optimisations in the customer's process
  - Support with the robot position teaching process
- Creation of micrographs / evaluation of clinching point quality
- Online support

Start-up support after commissioning up to SOP Training of system operators/maintenance staff/experts

### Data and facts

- Founded in 1936
- Products in use in over 100 countries
- Over 25 sales partners worldwide
- Sales companies in Great Britain, Hungary, USA
- Certified according to ISO 9001:2015
- Certified according to ISO 14001:2015







# Eckold technics GmbH & Co. KG

Walter-Eckold-Str. 1 37444 St. Andreasberg Germany Tel.: +49 5582 802 0 www.eckold.de info@eckold.de

#### Eckold GmbH & Co. KG

Walter-Eckold-Str. 1 37444 St. Andreasberg Germany Tel.: +49 5582 802 0 www.eckold.de info@eckold.de

#### **Eckold Limited**

15 Lifford Way Binley Industrial Estate Coventry CV3 2RN Great Britain Tel.: +44 24 764 555 80 www.eckold.de sales@eckold.co.uk

#### Eckold Kft.

Móricz Zsigmond rkp. 1/B. fszt. 13. 9022, Győr Hungary Tel.: +36 70 943 311 8 www.eckold.hu info@eckold.hu

#### **Eckold Corporation**

2220 Northmont Parkway, Suite 250
Duluth GA 30096
USA
Tel: +1 770 295 0031

Tel.: +1 770 295 0031 www.eckoldcorp.us info@eckoldcorp.us