

User report

Automotive industries



Clinching



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

Task:

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:

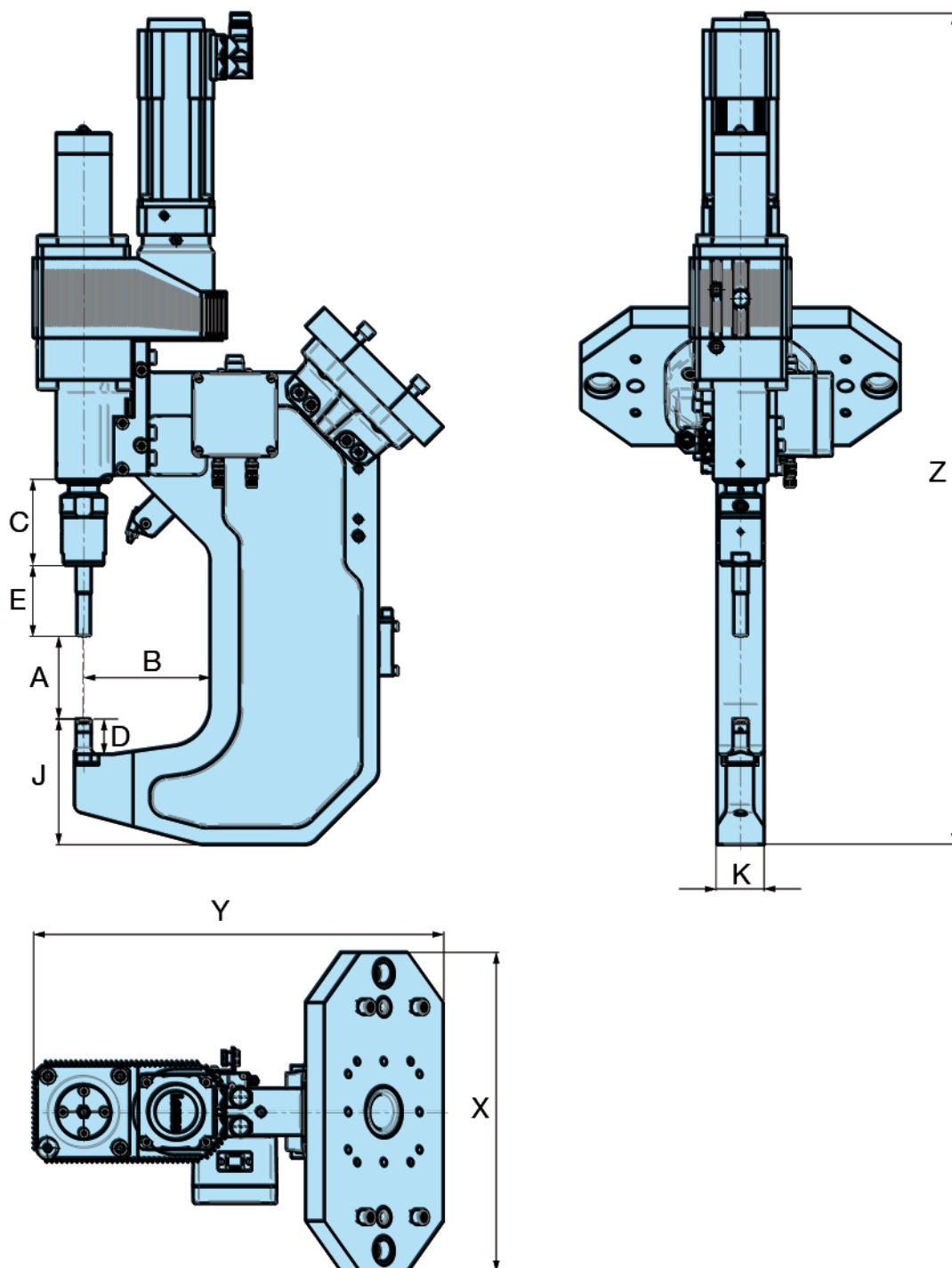
The task was realized by 2 robot-guided clinching frames and a stationary clinching frame with component handling by robot. For application of the clinching frames, the order scope includes: Servo motor-driven clinching system with control cabinet EM-011, valve plate complete (ME 235) micro spray system 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

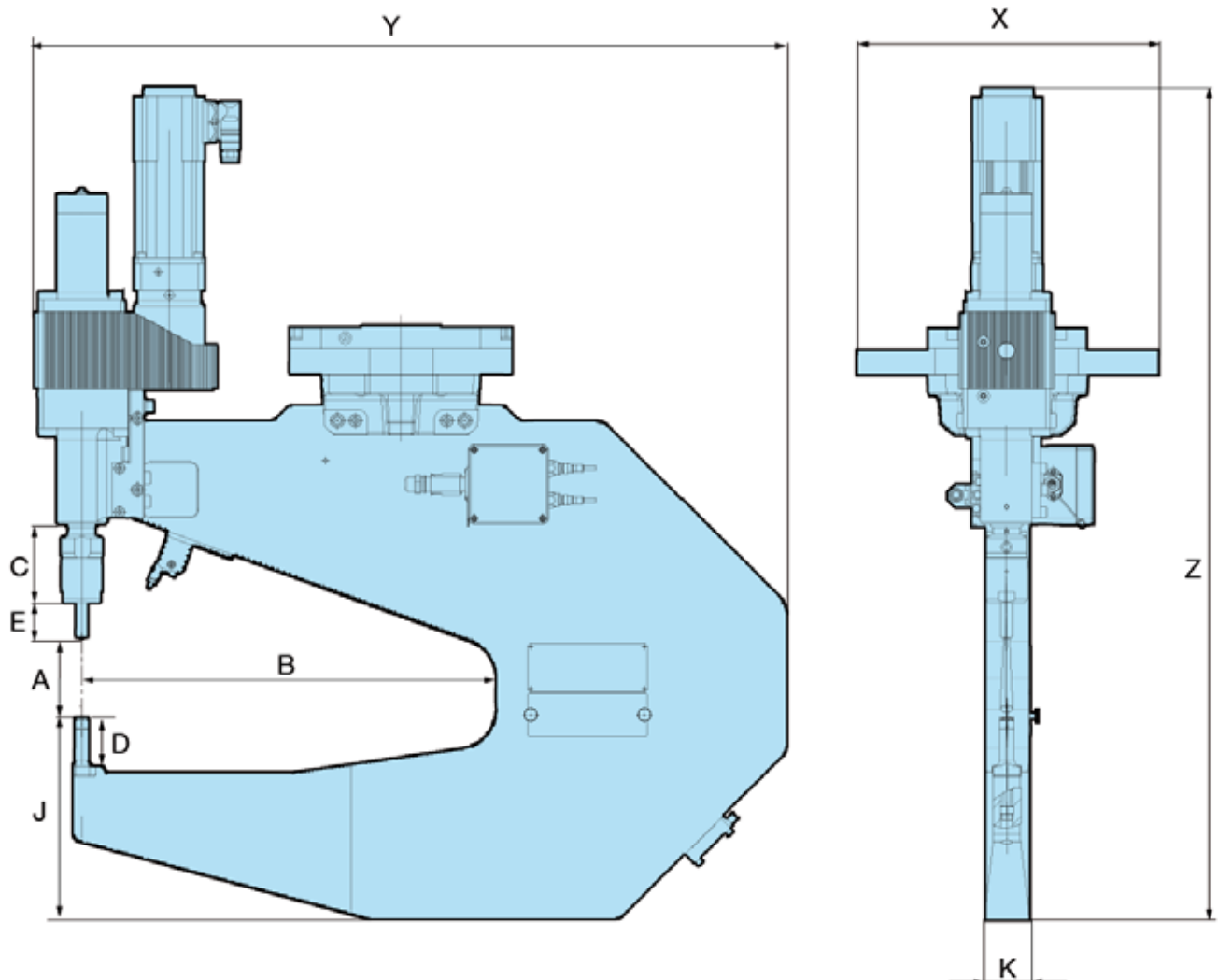


Name	Clinching frame	Opening width	[A] [mm]	978,4
Type	DFB-798	Throat depth, horizontal	[B] [mm]	150,5
Ident no.	0000086439		[C] [mm]	99
Drive	servo motor-driven	Tool holder protrusion at frame end	[D] [mm]	42
Pressure force	max. 80 kN	Tool holder protrusion, ram side	[E] [mm]	84,5
Stroke length	100 mm	Frame end height	[J] [mm]	149,5
Pneumatic pressure	min. / max. 5 / 6 bar	C-frame width	[K] [mm]	56
Weight	112 kg	Width	[X] [mm]	380
		Length	[Y] [mm]	488
		Height	[Z] [mm]	989



Name	Clinching frame
Type	DFB-855
Ident 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

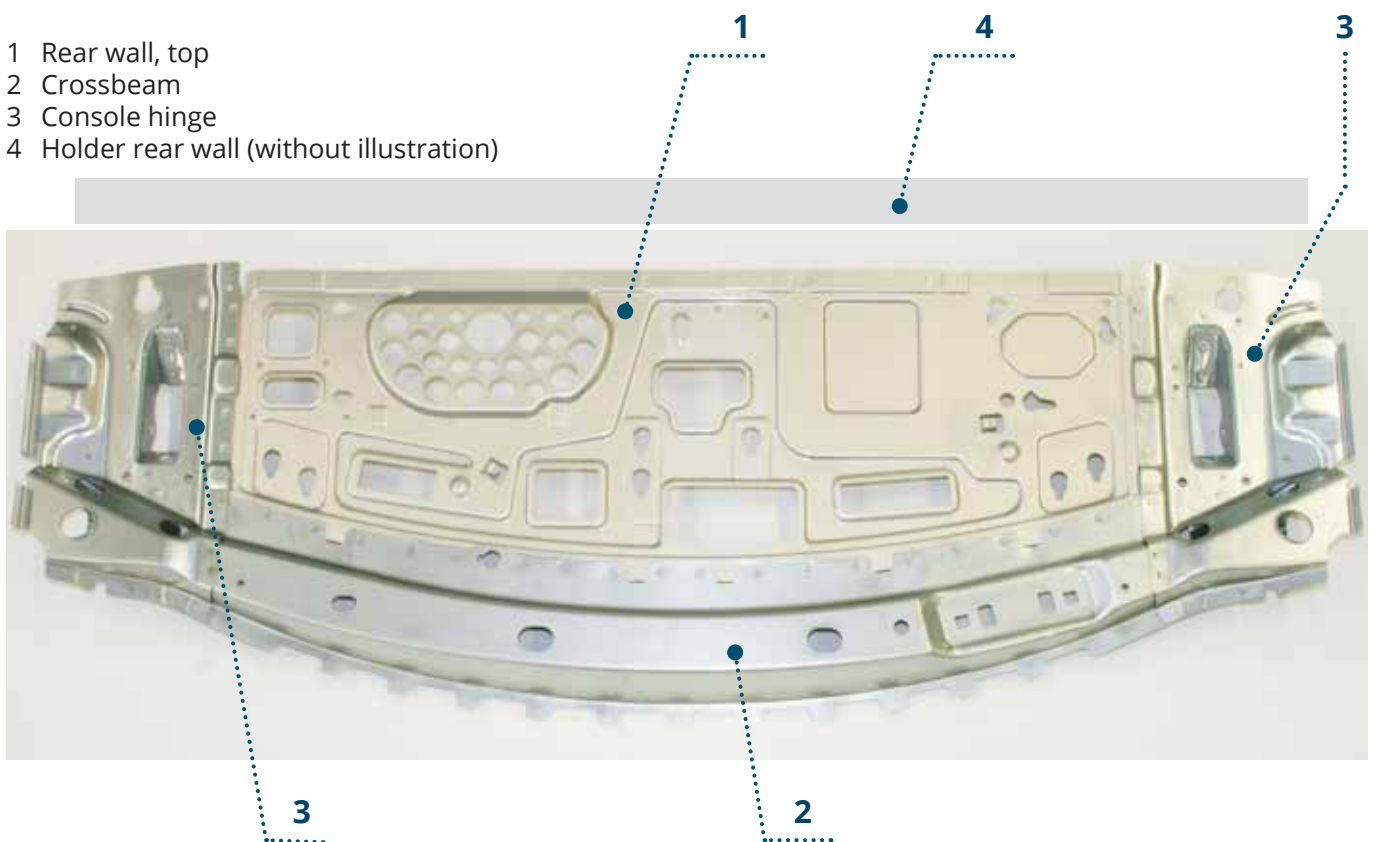
Opening width	[A]	[mm]	98
Throat depth, horizontal	[B]	[mm]	520
	[C]	[mm]	99
Tool holder protrusion at frame end	[D]	[mm]	62
Tool holder protrusion, ram side	[E]	[mm]	44,5
Frame end height	[J]	[mm]	255
C-frame width	[K]	[mm]	56
Width	[X]	[mm]	380
Length	[Y]	[mm]	946
Height	[Z]	[mm]	1046



Joining task		1	2	3	4
Clinching variant		R-DF 8	R-DF 8	R-DF 8	R-DF 8
Component	t_1	Rear wall, top	Rear wall, top	Rear wall, top	Rear wall, top
Material	t_1	Al	Al	Al	Al
Punch side layer thickness	t_1	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_2	Console hinge	Crossbeam	holder rear wall	rear wall
Material	t_2	mild steel	mild steel	mild steel	mild steel
Die side layer thickness	t_2	0,75 mm	0,6 mm	2,0 mm	1,25 mm
No. of clinching points					

Rear wall

- 1 Rear wall, top
- 2 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).

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.)



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- 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 Park-
way, Suite 250
Duluth GA 30096
USA
Tel.: +1 770 295 0031
www.eckoldcorp.us
info@eckoldcorp.us