

Longitudinal Seam Welding Machine

ELENA II-BOX

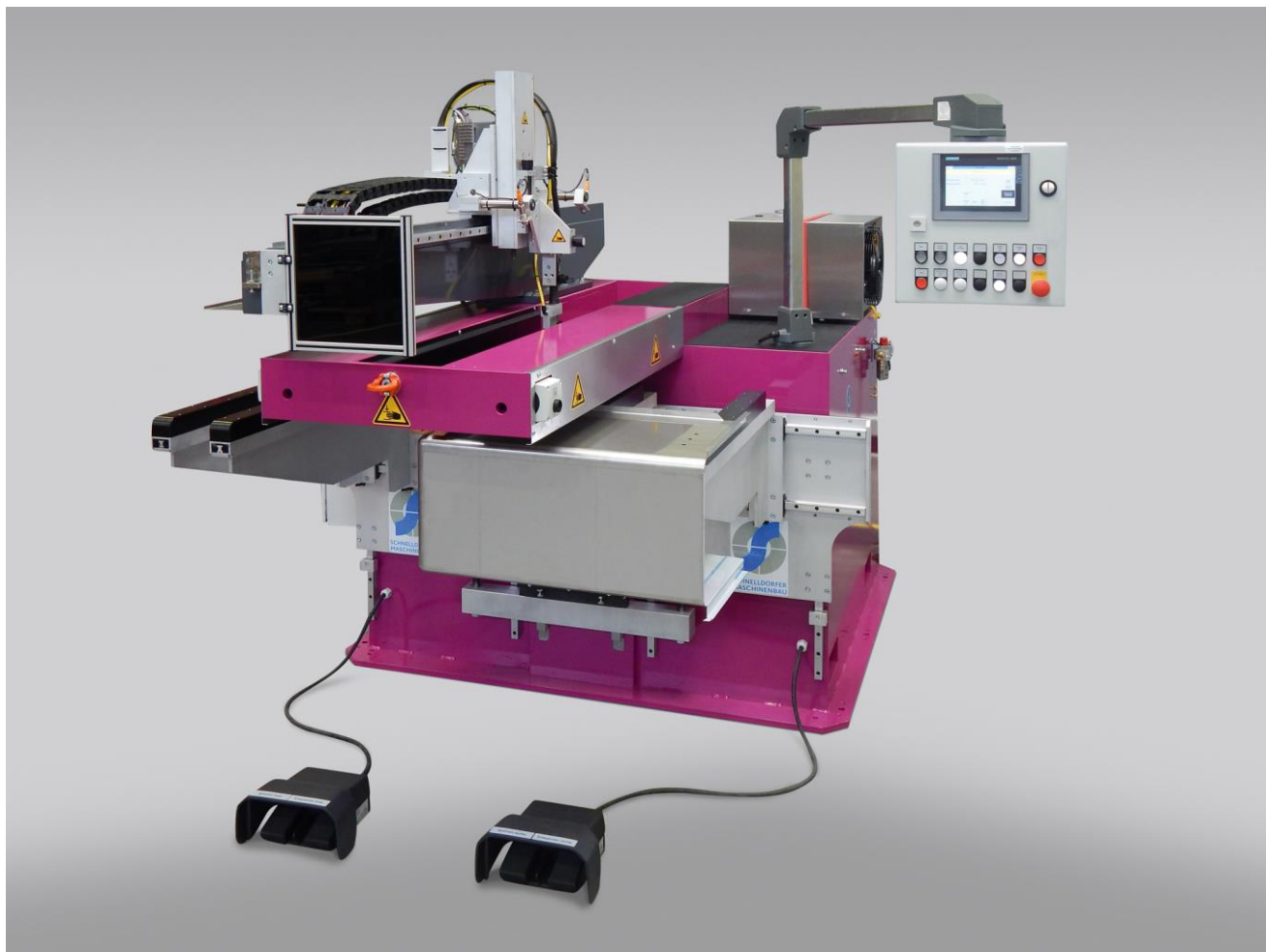


Figure 1: ELENA 800-II-Box with loaded internal box / liner of an H2 rated SS kitchen counter.

Various products require boxes with rounded corners. Most of these boxes are formed from a pre-cut stainless steel sheet which is welded into final shape on the flat intersection of the rounded corners and the sides. Manual welding of these straight seams requires highly skilled welders and laborious manual rework and finishing.

ELENA 800-II-BOX has been specifically designed to weld the seams on rounded corner boxes. This semi-automatic longitudinal seam welder consistently produces high quality results, without discolouration, which require only minimal post weld rework. The machine is an excellent investment with a short payback period due to significant reduction in manual labour levels.

The main application is welding of the internal box / liners of H2 and H3 rated stainless steel cabinets, complying to Standard DIN 18865-9 (Equipment for commercial kitchens – Food distribution equipment – Part 9: Equipment- internals - basic hygiene version).

Other applications involving rounded corner boxes include ultrasonic cleaners, transport containers for pharmaceutical or food processing application and high quality domestic stainless steel furniture.

ELENA II-Box

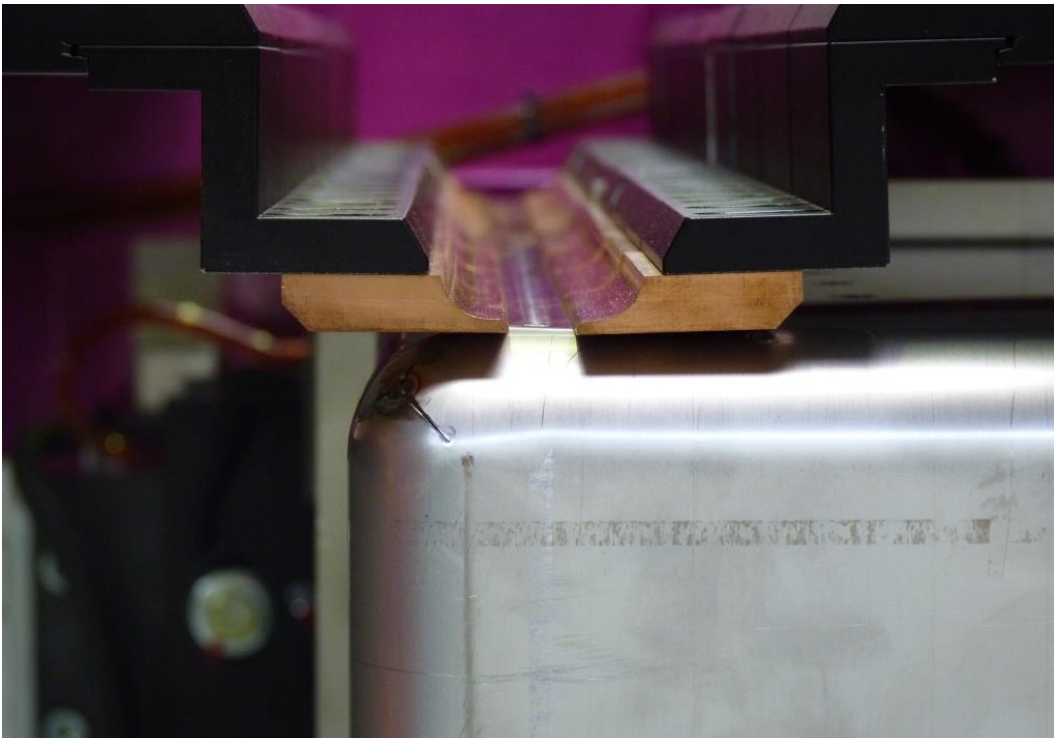


Figure 2: Clamped box with precision outside clamping fingers. The seam is just visible.

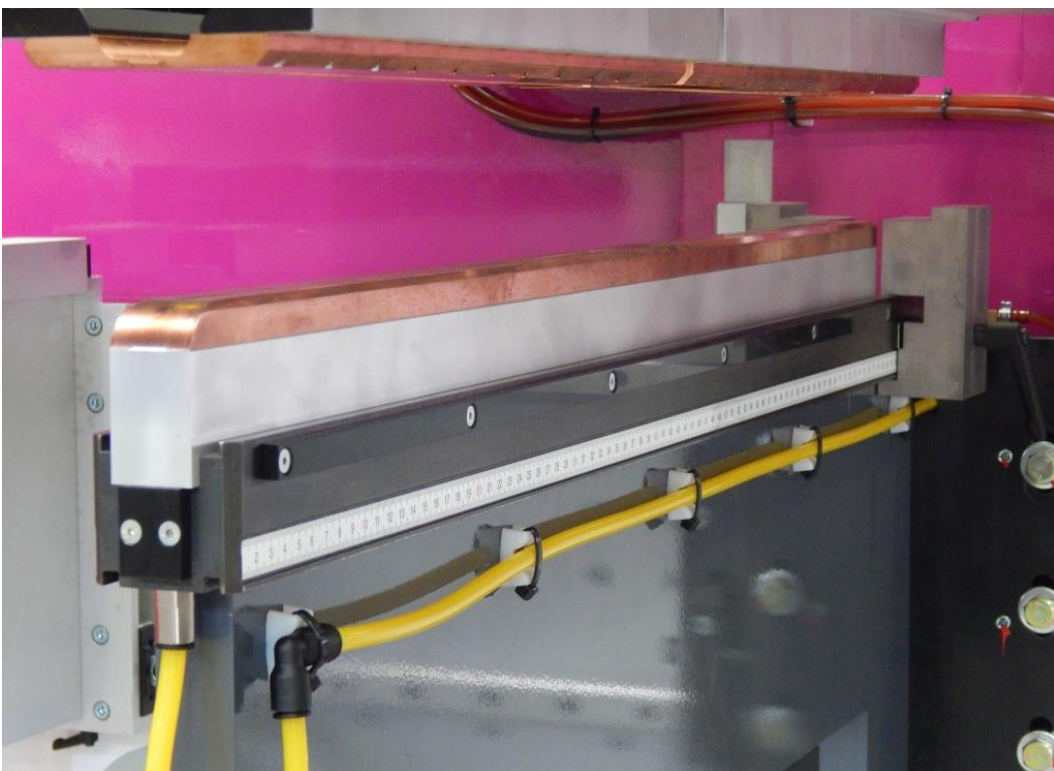


Figure 3: Narrow mandrel with CuCrZr backing bar, cooling and part stop.

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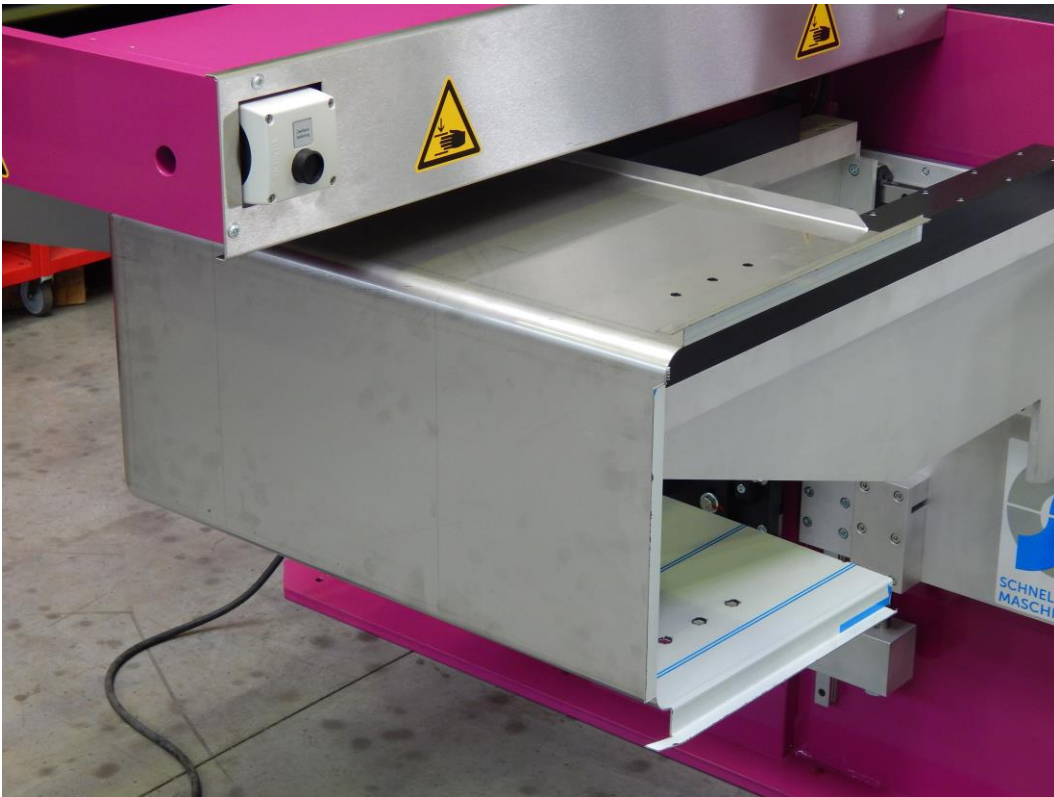


Figure 4: Adjustable, telescopic support arms hold the box during loading and unloading. Synchronised with mandrel lift.



Figure 5: Mandrel Lift System for easy loading and un-loading, accommodates mounting flange.

ELENA II-Box



Figure 6: Clamping system



Figure 7: Outside clamping fingers with adjustable gap to accommodate mounting flange of box.

TECHNICAL DATA

ELENA II-Box	800	1000
Welding length max.	800 mm	1000 mm
Material thickness	0,5 mm – 2,0 mm	
Material Type	Stainless Steel, Mild Steel, Aluminium	
Welding Process	TIG / GTAW	
Gas	Torch Gas, Backing Gas, Trailing Gas	
Torch travel speed	30 cm/min – 550 cm/min	
Mandrel Latch	Open mandrel	
Backing Bar, Clamping Fingers	Hard Wearing Copper (CuCrZr)	
Clamping System	Pneumatic, Pre-clamp feature	
Arc Length	Constant (over whole welding length)	
Cooling Circuit	Backing Bar (Mandrel), Torch	
Control	Siemens S7-ET200S	
Operator Panel	Siemens Multi-Panel 5,7" Touch colour display	
Motor	Siemens Simodrive Posmo A	
Welding Interfaces	Profibus	
Standard	CE-Mark	
Electric Supply	400/230 Volt / 3 / N / PE; 50/60 Hz; TN-grid Others networks accommodated with transformer (optional)	
Air Supply	6 bar, dry, filtered	
Ambient Temperature	+ 10°C to + 35°C	
Colour	RAL 4006 other RAL codes available	

MACHINE CONTROL

Automatic						00000000	!	
Please load Part / Close Lock								
Last load.dat.recrd:	0000	000000000000000000000000						
Torch position:	00000.000	mm						Change values
Speed:	0000000.0	cm/min						Manual travel Torch
Center stop up	Open lock	Torch up	Wire forward	Wire backward				Unclamp Manual
Center stop down	Close lock	Torch down	Gas test	Arc off				Return

Figure 8: Automatic menu for machine operation.

Welding Parameter						!
No.o'segments:	000000000					
Start Point:	0	000000.000	mm			
Weld length:	0	000000.000	mm (Endpoint)			
Speed:	00000000.0 cm/min					
Gas Preflow Time:	00000000.0 s					
Gas Afterflow Time:	00000000.0 s					
Park Position:	000000.000 mm					
		Variable -	Variable +		Return	

Welding Parameter						!
No.o'swtchLgths:	000000000					
Swthchg. Lgth:	0	000000.000	mm			
Speed:	0	00000000.0	cm/min			
		Variable -	Variable +		Return	

Figure 9: Menus for welding parameter setting (welding current controlled via Profibus).

ITEM LIST

Item	Machine		
1027568	ELENA 800-II-Box	Longitudinal seam welder	
1027569	ELENA 1000-II-Box	Longitudinal seam welder	
1017089	Welding Program Memory		

Item	Welding Equipment		
1028169	FRONIUS TT 2200 Job DC, TIG - Inverter welding power source(without cooling)	Communication with machine by Profibus	
1033847	FRONIUS TT 2500 Job DC, TIG - Inverter welding power source	Communication with machine by Profibus	
1040574	FRONIUS TT 2500 Job DC MV UL-Standard , TIG - Inverter welding power source	Communication with machine by Profibus	
1019029	FRONIUS KD 4000 D-11 Wire feed unit with beam track extension	Communication with welding power source	

Torch cooling through backing bar (mandrel) cooling unit possible.

Item	Cooling Units		
1017082	Water cooler HYFRA LWK 17	Air blast cooler	
1036824	Water chiller HYFRA eCHILLY 1	Chiller	

Cooling of backing bar (mandrel) and torch mandatory.

Item	Optional items / execution		
1019028	UL-Standard , Execution electrical system and pneumatics	Machine execution	
1032670	Router for remote diagnosis / programming (Industrial standard, installed)		
1017579	Barcode reader for welding program memory		

PART GEOMETRY

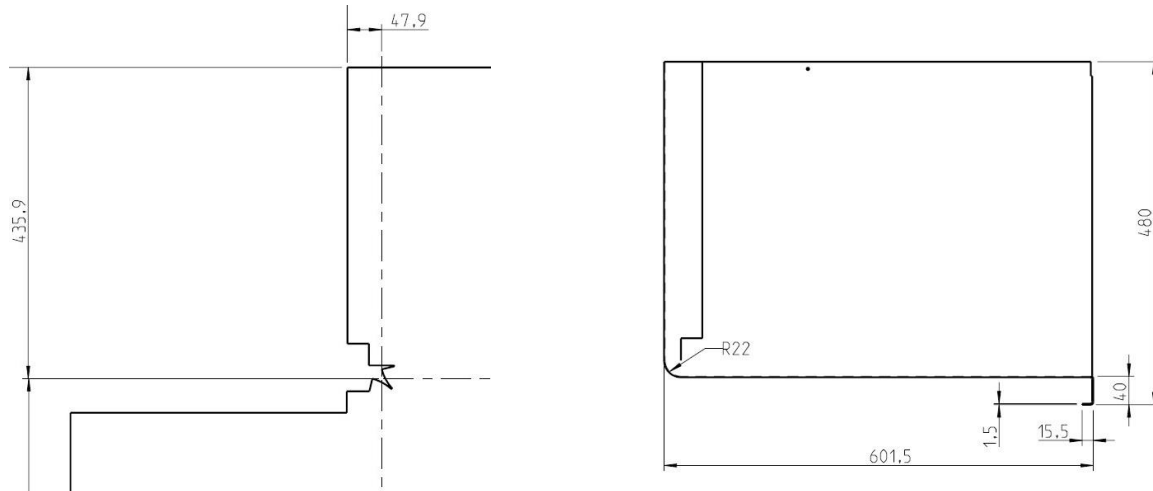


Figure 10: Typical cutting and bending drawing for rounded corner boxes.