

Longitudinal Seam Welding Machine

ELENA[®] ONE



Figure 1: ELENA ONE with optional welding power source FRONIUS TT 2200 2/4 stroke.

Schnelldorfer Maschinenbau GmbH has designed and manufactured longitudinal seam welders for over 25 years so ELENA ONE is a direct representation of our accumulated experience. The machines are manufactured from highest quality industrial components and have all the features necessary to achieve successful and reliable longitudinal welding from the very first day of operation and for many years to come.

Available in three different welding lengths 600 mm, 1100 mm and 1300 mm, ELENA ONE excels in the primary task of tube production.

HIGHLIGHTS



Figure 2: Manual latch open (position controlled, easy to operate)



Figure 3: Clamping system, torch with trailing gas shield, centre stop on the left



Figure 4: Pneumatics easily accessible from front of machine



Figure 5: ELENA ONE 1100 with operator



Figure 6: ELENA ONE control panel



TECHNICAL DATA

ELENA ONE	600	1100	1300
Tube length max.	600 mm	1100 mm	1300 mm
Minimum tube diameter (inside)	60 mm	80 mm	100 mm
Maximum tube diameter	980 mm		
Material thickness	(0,3 mm optional) 0,5 mm – 1,5 mm		
Material Type	Stainless Steel, Mild Steel, Galvanised Steel		
Welding Process	TIG / GTAW		
Gas	Torch Gas, Backing Gas, Trailing Gas		
Torch travel speed	30 cm/min – 550 cm/min		
Mandrel Latch	Manual, Position controlled		
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 S7-1200		
Operator Panel	Siemens Panel KP 400, 4", colour display		
Motor	Schneider Electric LEXIUM (stepper motor)		
Welding Interface	2/4 stroke interface		
Standard	CE-Mark		
Electric Supply	400/230 Volt / 3 / N / PE; 50/60 Hz; TN-grid Also available: 220/127 V, 380/220 V, 400/230 V, 415/240 V		
Air Supply	6 bar, dry, filtered		
Ambient Temperature	+ 10°C to + 35°C		
Colour	RAL 5017 (traffic blue)		



MACHINE CONTROL

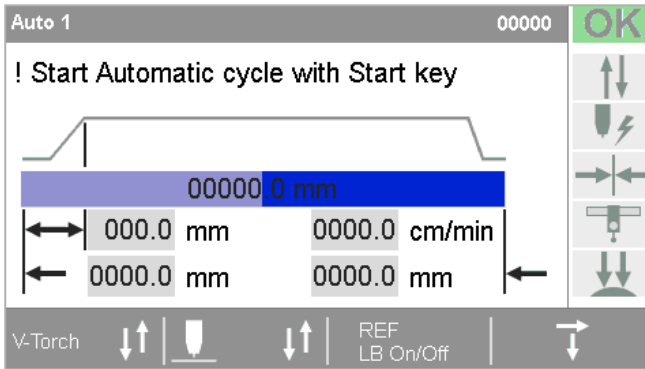


Figure 7: Automatic menu for machine operation

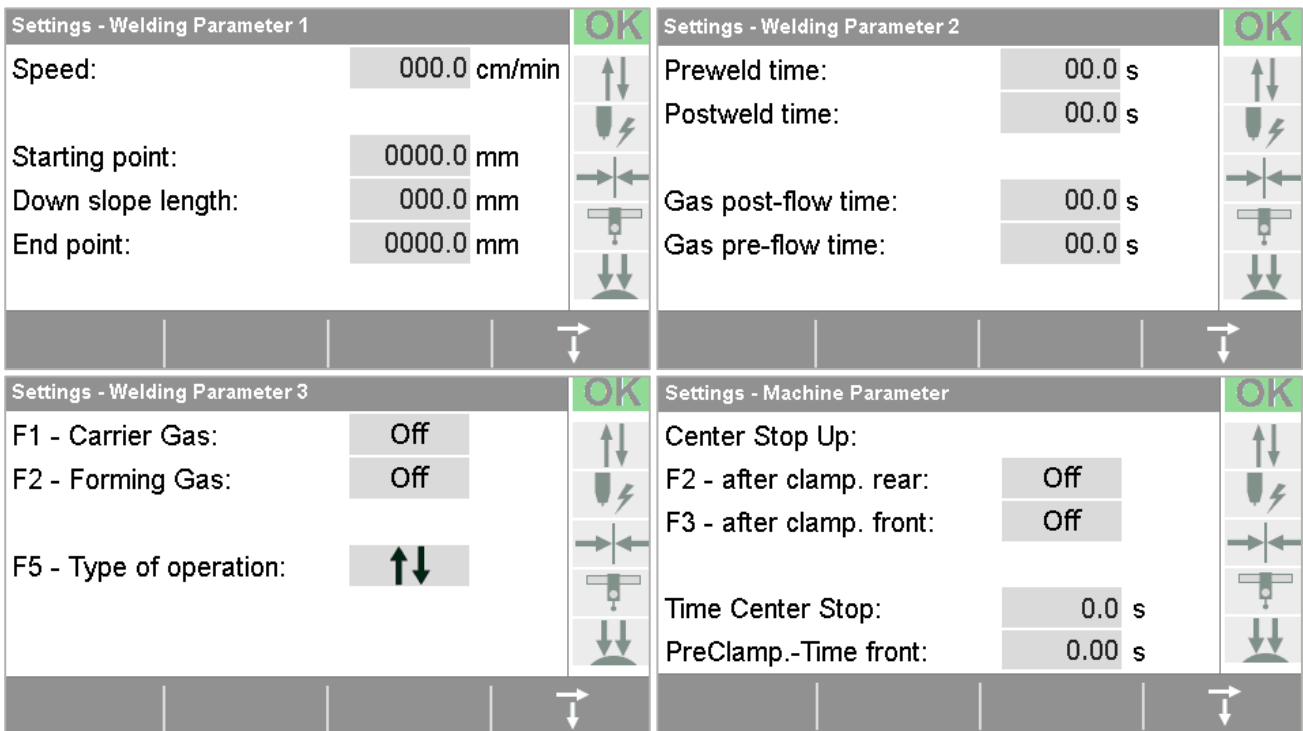


Figure 8: Menus for welding parameter setting (welding current controlled on power source)



ITEM LIST

Item	Machine		Weight
1037673	ELENA ONE 600	Longitudinal seam welder	470 kg
1031678	ELENA ONE 1100	Longitudinal seam welder	515 kg
1037674	ELENA ONE 1300	Longitudinal seam welder	575 kg

Item	Thin Sheet Welding t = 0,3 – 0,8 mm		
1040348	Thin sheet backing bar made from CuCrZr	for ELENA ONE 600	
1040349	Thin sheet backing bar made from CuCrZr	for ELENA ONE 1100	
1040350	Thin sheet backing bar made from CuCrZr	for ELENA ONE 1300	

Item	Welding Equipment		Weight
1032454	FRONIUS TT 2200 Job DC, TIG - Inverter welding power source (without cooling unit)	Communication with machine by Start/Stop and current flow signal	18 kg
1040227	FRONIUS KD 4000 D-11 Wire feed unit	Communication with welding power source	20 kg
1044536	REHM INVERTIG.PRO Digital 240 DC, TIG - Inverter welding power source (without cooling unit)	Communication with machine by Start/Stop and current flow signal	18 kg
1044537	REHM INVERTIG.PRO Digital 240 AC/DC, TIG - Inverter welding power source (without cooling unit)	Communication with machine by Start/Stop and current flow signal	18 kg
1044538	REHM APUS 20C Wire feed unit	Communication with welding power source	18 kg
1044539	LORCH T 180 DC, TIG - Inverter welding power source (without cooling unit)	Communication with machine by Start/Stop and current flow signal	18 kg
1044540	LORCH T 180 AC/DC, TIG - Inverter welding power source (without cooling unit)	Communication with machine by Start/Stop and current flow signal	18 kg
1044541	LORCH T 220 DC, TIG - Inverter welding power source (without cooling unit)	Communication with machine by Start/Stop and current flow signal	18 kg
1044542	LORCH T 220 AC/DC, TIG - Inverter welding power source (without cooling unit)	Communication with machine by Start/Stop and current flow signal	18 kg
1044132	Integration of customer-provided welding power source	Communication with machine by Start/Stop and current flow signal	

Torch cooling through backing bar (mandrel) cooling unit.



Item	Options for delivery without welding equipment
1040144	Torch ABITIG MT 300 W (installed), connection BHC-12 (Fronius)
1040347	Wire feeding preparation (support, wire nozzle, wire guide liner)

Item	Cooling Units		Weight
1017082	Water cooler HYFRA LWK 17	Air blast cooler	10 kg
1036824	Water chiller HYFRA eCHILLY 1	Chiller	49 kg

Cooling of backing bar (mandrel) and torch mandatory.

Item	Packing in wooden box		Size (WxDxH)	Weight
1039814	for land / air transport	for ELENA ONE 600	1580 x 890 x 1840 mm ³	115 kg
1039816	for land / air transport	for ELENA ONE 1100	2080 x 890 x 1840 mm ³	140 kg
1039818	for land / air transport	for ELENA ONE 1300	2280 x 890 x 1840 mm ³	145 kg
1039815	Sea worthy	for ELENA ONE 600	1580 x 890 x 1840 mm ³	145 kg
1039817	Sea worthy	for ELENA ONE 1100	2080 x 890 x 1840 mm ³	165 kg
1039819	Sea worthy	for ELENA ONE 1300	2280 x 890 x 1840 mm ³	175 kg

EQUIPMENT

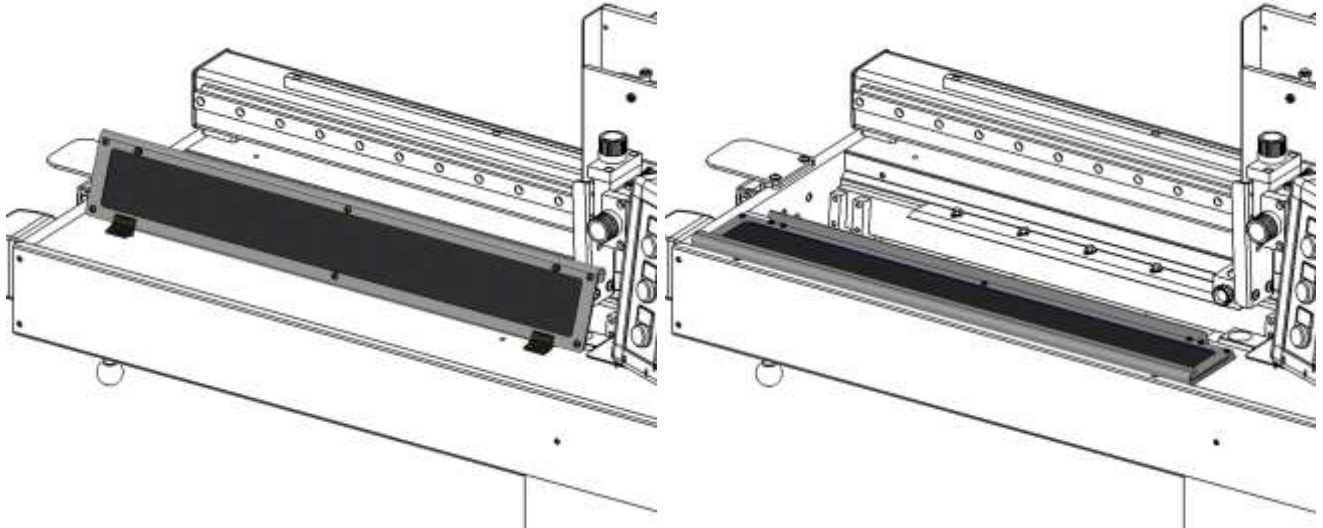


Figure 9: Foldable welding screen

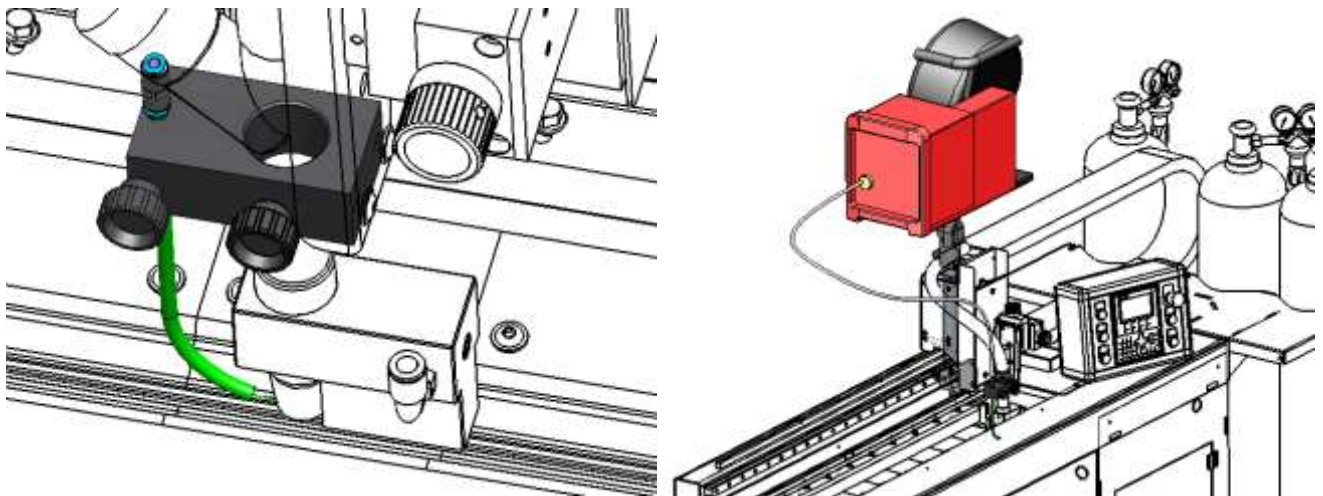


Figure 10: Cold wire feeding system (optional)

WELDING INTERFACE

For ease of integration and service ELENA one is equipped with a 2/4 stroke welding interface. This reliable interface allows straight forward integration of welding power sources from different manufacturers.

Start and welding current are set on the welding power source. All other parameters are programmed on the main machine control.

The circuit diagram for the connection of a welding power source is shown below. All connections can be made in the electric control cabinet on a labelled screw terminal.

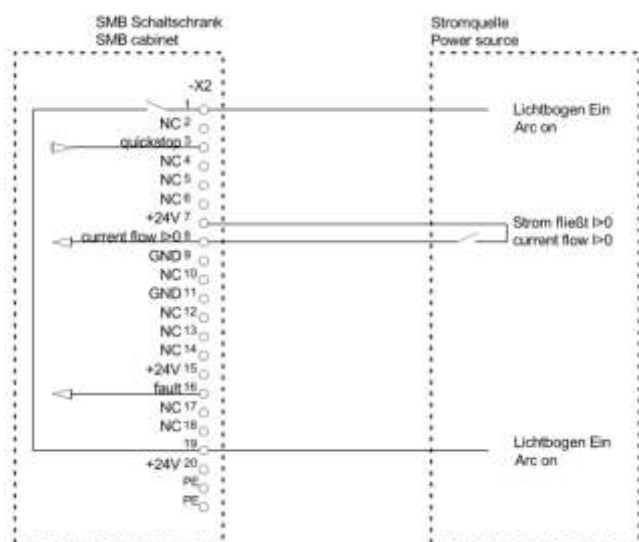


Figure 11: Interface for welding power source

REFERENCES



ELENA ONE | Configuration



NOTES

WELDED COMPONENTS (TIG)



Figure 12: Stainless Steel sheet $t = 0,5$ mm



Figure 13: Aluminum tube with bead $t = 1,0$ mm



Figure 14: Stainless Steel tube $t = 0,5$ mm



Figure 15: Stainless Steel Chimney pipe