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ALL-ELECTRIC TUBE BENDER ELECT

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BLM GROUP

ELECT

All-Electric multi-stack CNC Tube Bender

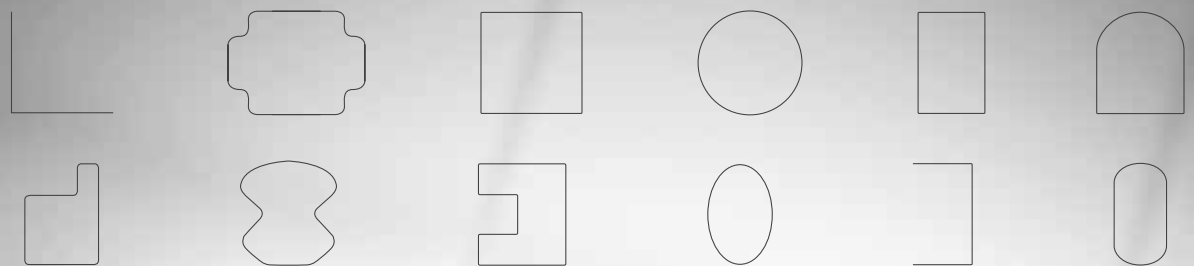
The **ELECT** family of benders covers the range of tube diameters from 40 mm (1.5") to 150 mm (6.0"). The machines have multiple tool stack capability and can produce both fixed and variable radius bends. A maximum of up to 8 tool sets can be mounted simultaneously within the stack height.



ELECT loading options:

- Manual or automatic loading available.
- Automatic loader can be positioned to the left or right side of the machine
- Special loading cycle available for heavy tubes or multi-ball mandrels.





ELECT

Technology behind it

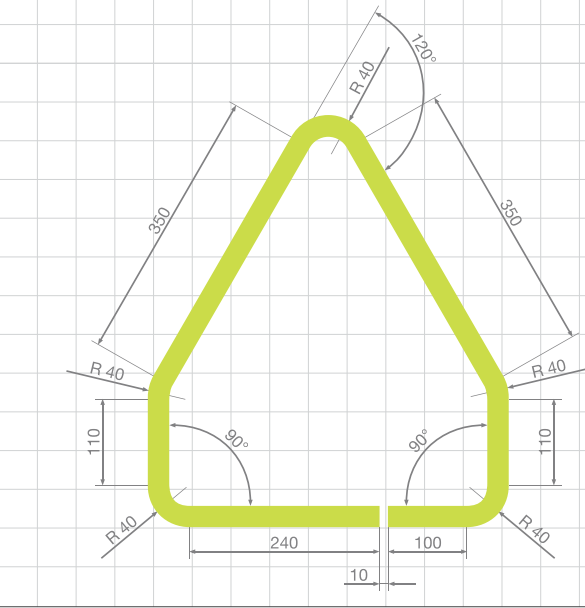
RIGHT-FIRST-TIME

Tubing, as a raw material, comes with a host of imperfections (dimensional tolerances, chemical composition, etc) that causes it to react inconsistently when bending. This often results in creating bends that are out of specification for tolerance, repeatability or quality. BLM has taken our years of expertise and knowledge to provide a CNC control that has the tools to deal with these variables and to provide the feature set needed for various market sectors.

GUARANTEED REPEATABILITY

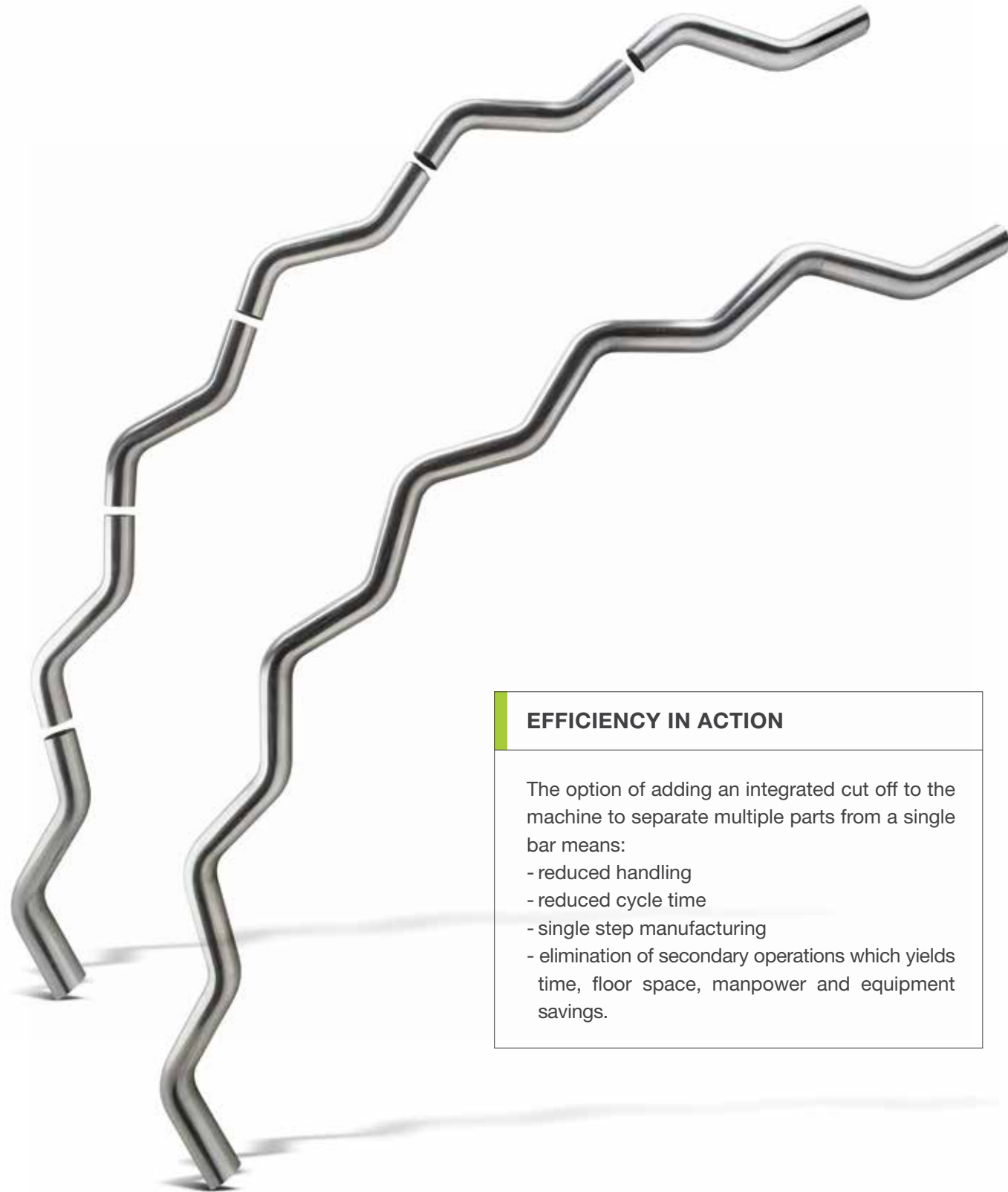
Special, non-standard, shaped tubes often have poor dimensional accuracy or repeatability. Now operators can select a BLM exclusive special working cycle that makes it possible to obtain high part to part repeatability even in complex shaped parts.

RIGHT FIRST TIME



ELECT

From drawing to finished part



EFFICIENCY IN ACTION

The option of adding an integrated cut off to the machine to separate multiple parts from a single bar means:

- reduced handling
- reduced cycle time
- single step manufacturing
- elimination of secondary operations which yields time, floor space, manpower and equipment savings.

Fast programming and short set-up times

The precise control and positioning of all the electric axis guarantee the optimum parameters can be produced exactly, right-first-time and everytime.

Repeatability and accuracy is maintained

All of the information about the part, machine and tooling are saved with the bending program. This minimizes the set up time and skill level needed to bend accurate parts.

Unattended production

When running in fully automatic mode on-board process sensors can stop the machine when problems arise. This eliminates the potential of producing bad parts or scrap.



ELECT

Technology behind it



Springback correction

A special bending cycle can be used on stainless or other high tensile tubing to eliminate deformation, reduce excessive tooling wear and deal with springback. The cycle automatically calculates the necessary program corrections needed to produce good parts thus eliminating the need for highly skilled operators.

The right torque when needed

The machine can be equipped with different levels of carriage boost power (2 to 6 metric ton torque). The boost can be continuously controlled over the entire bending sequence taking into consideration the material behavior and spring back.

Some of the important benefits are:

- no deformation of the tube shape even on tight radius bends
- good cosmetic finish with minimal marks or scratches
- elimination of scraped parts



Zero
scrap



Zero
“trial & error” tests

ELECT

Designed for ergonomic use

Comfort with complete safety

A laser scanner allows the definition of different safe work zone depending upon the part dimensions.

A foot pedal switch is used when loading / unloading heavy parts to prevent parts from being dropped or damaged.



Capacitive touchscreen

Flat panel 19" display (16:9), multi-touch capacitive touchscreen, suitable for use even with safety gloves. Icon based user interface.

Compatible

Compatible with various CAD / CAM packages.

Compatible with ERP systems.

Control features on-board;

User manual

Preventive maintenance tutorials

Exploded views of machine components for spare parts identification

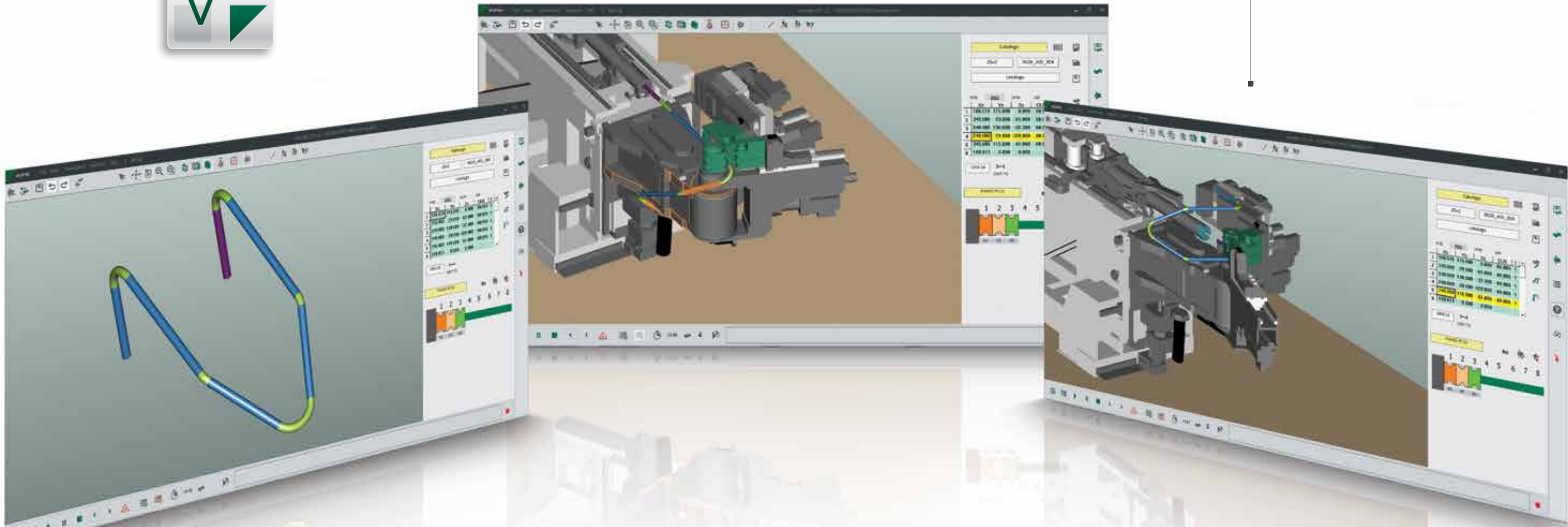
SOFTWARE

VGP3D, the difference



View simulation of the part.
Display and correct for possible collisions.

Determine part feasibility and
generate accurate cycle times



Import from CAD or program
from part coordinates

**Programming and 3D
simulation software**

Use part geometry data or 3D CAD data to instantly
create a part program.

Quickly check for part feasibility.

Accurately calculate the cycle time.

Simulate the machine, tooling and part bending
sequence.

Visualize collisions or allow the software to select
the most efficient sequence automatically.

Reduces the time needed to create cycle time
estimates.

Shortens the response time to the customer.

Enjoy simplified programming via BLM's programming
Wizard.



ELECT

Technical information

	ELECT-40	ELECT-52	ELECT-63	ELECT-80
Max tube O.D. capacity (round tube)	Ø 42 x 2.0 mm	Ø 50 x 2.0 mm	Ø 63 x 2.0 mm	Ø 80 x 2.0 mm
Controlled axes	nr. 9	nr. 9	nr. 9	nr. 9
X axis accuracy	± 0,05 mm	± 0,05 mm	± 0,05 mm	± 0,05 mm
Y axis accuracy	± 0,05°	± 0,05°	± 0,05°	± 0,05°
Z axis accuracy	± 0,05°	± 0,05°	± 0,05°	± 0,05°
X axis speed (brushless motor)	1450 mm/s	1450 mm/s	1600 mm/s	1600 mm/s
Maximum X axis speed with optional 5 metric ton booster	-	-	850 mm/s	850 mm/s
Maximum X axis speed with optional 2 metric ton booster	650 mm/s	650 mm/s	1000 mm/s	1000 mm/s
Max bending radius (increasable on demand)	165 mm	180 mm	270 mm	270 mm
Min. bending radius (decreasable on demand)	25 mm	35 mm	35 mm	45 mm
Machine bed length (increasable on demand)				
- from tool post to collet	2030 mm	2030 mm	2060 mm	2060 mm
- from tool post to mandrel retraction	3640 mm	3640 mm	4500 mm	4500 mm
Max bore through carriage	43 mm	53 mm	62 mm	84 mm
Bending direction	convertible left or right	convertible left or right	convertible left or right	convertible left or right
Automatic mandrel lubrication	yes	yes	yes	yes
Nr. of mandrel rods / diameters	Nr. 3 (10-16-24)	Nr. 3 (10-16-24)	Nr. 2 (16-24)	Nr. 3 (16-24-44)
Max installed power	12,5 kW	12,5 kW	18 kW	18 kW
Average absorbed power	4 KW	4.5 KW	5.3 kW	5.3 kW
Noise level	65 dB(A)	65 dB(A)	65 dB(A)	65 dB(A)
Machine and CNC weight	3000 daN	3300 daN	6700 daN	6700 daN
Machine dimensions	4230 x 1475 x 1600 mm	4280 x 1475 x 1600 mm	5510 x 1990 x 1872 mm	5510 x 1990 x 1872 mm

ELECT 40-52-63-80

Standard Features: Booster for variable radius bending with 1 metric ton torque, early mandrel extraction, electrical axis for bend die return movement, remote tele-diagnostics, safety barriers, two hand command operator pedestal with “optical” buttons. **Options:** Electrically controlled pressure die, variable radius bending (VRB) capability and related accessories, carriage boost with 2 metric ton torque (ELECT40-52-63-80), carriage boost with 5 metric ton torque (ELECT63/80), wiper die support, machine bed extension, weld seam detection, hole detection, auto-loading, cut off, gel/grease lubrication system, vertical bend die opening, mounting adapters for special tooling.

CNC: SIEMENS Simotion D435-2 CNC capable of controlling and interpolating motion of up to 64 axis, precise execution of movements as per the 3D simulation, SIEMENS Sinamics digital drives with integrated digital interface DRIVE-CLIQ for all the system components including motors and transducers, brushless electric motors with absolute encoders for position feedback. **Operator Interface:** graphical interactive programming utilizing a 3D model of the machine, Industrial PC SIEMENS

Simatic IPC427D with Intel Core 17-3517UE processor, 2x10/100/1000 MBIT/S, 4GB RAM, 80GB solid state disc. External connection ports: Ethernet - 2, USB - 4, RS232 -1. **Operating system:** Microsoft Windows 7 Ultimate 64 bit. **Operator panel:** SIEMENS Simatic Itp1900 Flat panel 19” display (16:9), multi-touch, 1366x768 pixel. **Keyboard:** SIEMENS MCP483 with membrane keys, remote tele-diagnostic connection for service troubleshooting (internet access for the machine is required).

	ELECT-102	ELECT-130	ELECT-150
Max tube O.D. capacity (round tube)	Ø 102 x 2.5 mm	Ø 130 x 3 mm	Ø 150 x 3 mm
Controlled axes	nr. 10	nr. 12	nr. 12
X axis accuracy	± 0,05 mm	± 0,05 mm	± 0,05 mm
Y axis accuracy	± 0,05°	± 0,05°	± 0,05°
Z axis accuracy	± 0,05°	± 0,05°	± 0,05°
X axis speed (brushless motor)	1600 mm/sec	1200 mm/sec	1200 mm/sec
Maximum X axis speed with optional 5 metric ton booster	850 mm/sec	-	-
Maximum X axis speed with optional 6 metric ton booster	-	900 mm/sec	900 mm/sec
Max bending radius (increasable on demand)	350 mm	450 mm	450 mm
Min. bending radius (decreasable on demand)			
- tool post diameter 80 mm	-	45 mm	45 mm
- tool post diameter 90 mm	55 mm	-	-
- tool post diameter 110 mm	-	65 mm	65 mm
Machine bed length (increasable on demand)			
- from tool post to collet	2060 mm	2272 mm	2272 mm
- from tool post to mandrel retraction	4500 mm	4777 mm	4777 mm
Max bore through carriage	84 mm	107 mm	107 mm
Bending direction	right	right	right
Automatic mandrel lubrication	yes	yes	yes
Nr. of mandrel rods / diameters	Nr. 3 (16-24-44)	Nr. 2 (24-44)	Nr. 2 (24-44)
Max installed power	18 kW	35 kW	35 kW
Average absorbed power	4 kW	6.5 kW	6.5 kW
Noise level	65 dB(A)	65 dB(A)	65 dB(A)
Machine and CNC weight	7800 daN	15900 daN	15900 daN
Machine dimensions	5523 x 1959 x 1872 mm	7072 x 2434 x 1924 mm	7072 x 2434 x 1924 mm

ELECT 102-130-150

Standard Features: Booster for variable radius bending with 1.5 metric ton torque, early mandrel extraction, electrical axis for bend die return movement, remote tele-diagnostics , safety barriers, wiper die support, two hand command operator pedestal with “optical” buttons. **Options:** Electrically controlled pressure die, variable radius bending (VRB) capability and related accessories, carriage booster with 5 metric ton torque (ELECT102), booster/ VRB with 6 metric ton torque (ELECT130/150), machine bed extension, weld seam detection, hole detection, gel/grease lubrication system, vertical bend die opening, mechanical adapters for special tooling.

TUBE BENDING

endforming
lasertube cutting system
sawing, deburring and washing
cutting & end machining
combined sheet and tube laser cutting
handling
manufacturing cell
process control software



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