

SWING

CNC TUBE BENDER WITH LEFT & RIGHT-HAND BENDING CAPABILITY IN AUTOMATIC CYCLE AND 3D INTERACTIVE VISUAL PROGRAMMING

The BLM SWING is a highly flexible and ingenious CNC tube bending machine with **right and left-hand bending** capability in automatic cycle with a capacity of up to 30 mm diameter.

Equipped with a **PC based control unit and a 3D graphic programming software (VGP 3D)** suitable to manage 16 axis and **four stack tooling on each head** (allowing up eight different bending tools to be pre-mounted). All the machine axis are electrically driven by brushless ac motors to maintain repeatability and accuracy.



ADVANTAGES

- **Right and left-hand** bending in automatic cycle
- **Multi-stack** bending facility (4 + 4 tool stack not requiring set up)
- 5 programmable axis with **electric bending head**
- 4 + 4 tool stack combination for tube OD from 6 to 18 mm
- 2 + 2 tool stack combination for tube OD from 20 to 30 mm
- production of complex tubular shapes
- Possibility to combine variable radius, multi radius and

- compound bending in a single tooling set up and program cycle
- 3D-graphic and **visual programming feature** on touch screen
- real time **simulation of the part** feasibility on the PC screen highlighting the collision area
- **bend cycle simulation** in real time with alternative feasibility solution and cycle time

BLM GROUP
THE TUBE PROCESSING TECHNOLOGY

- ▶ TUBE BENDING
- ▶ ENDFORMING
- ▶ SAWING, DEBURRING AND WASHING
- ▶ CUTTING & END MACHINING
- ▶ LASERTUBE CUTTING SYSTEM
- ▶ LASER CUTTING FOR SHEET AND TUBE
- ▶ HANDLING
- ▶ 3D MEASURING
- ▶ MANUFACTURING CELL
- ▶ NON TOUCH MEASURING SYSTEMS
- ▶ PROCESS CONTROL SOFTWARE

BLM GROUP
WORLD WIDE

- | | | |
|--|---|---|
| <ul style="list-style-type: none"> ▶ BLM S.P.A. ▶ ADIGE SALA S.p.A. ▶ ADIGESYSTEMS S.P.A. ▶ MGS S.R.L. | <p>Sales & service subsidiaries</p> <ul style="list-style-type: none"> ▶ BLM-ADIGE DEUTSCHLAND GmbH ▶ BLM-ADIGE (UK) Ltd. ▶ BLM-ADIGE (SA) PTY Ltd. ▶ BLM-ADIGE USA Corp. ▶ BLM-ADIGE do BRASIL Ltda | <p>Exclusive Sales & Service Agents</p> <ul style="list-style-type: none"> ▶ ALL OTHER COUNTRIES |
|--|---|---|

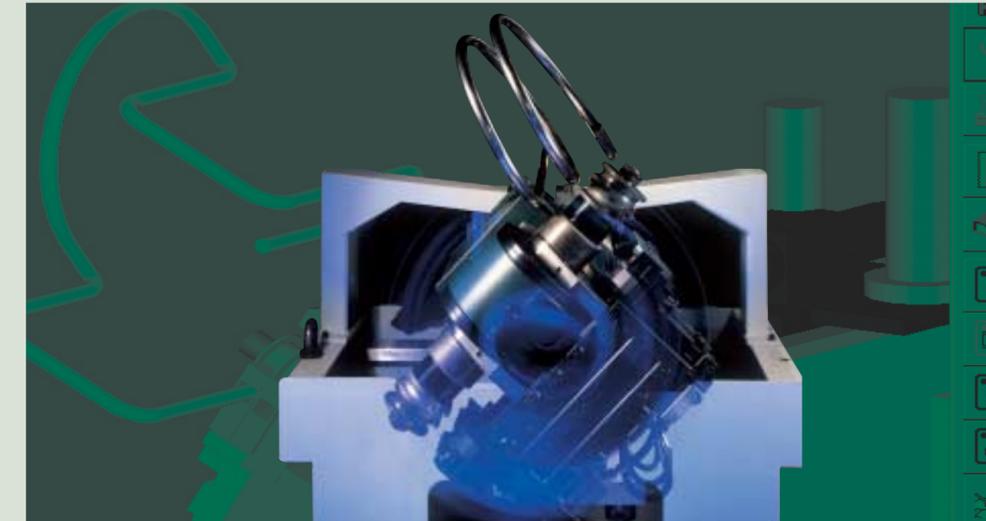


BLM S.P.A. via selvaregina, 30 - 22063 cantù (co) Italy • tel +39 031 7070200
fax +39 031 715911 • e-mail export@blm.it • www.blmgroup.com

FSTES.MF: rev. 04-01/04

NEW SWING

CNC TUBE BENDER WITH LEFT & RIGHT-HAND BENDING CAPABILITY IN AUTOMATIC CYCLE AND 3D INTERACTIVE VISUAL PROGRAMMING



BLM GROUP

BLM

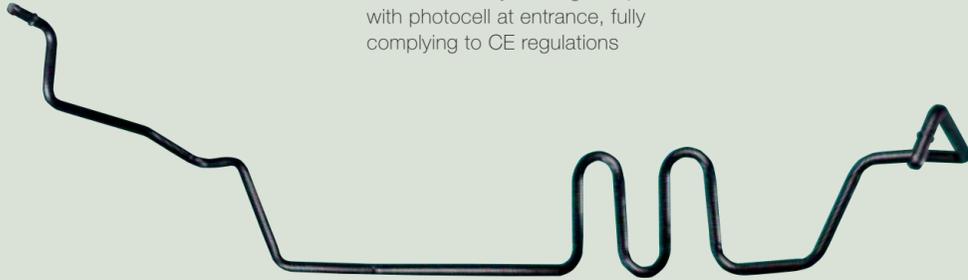
THE TUBE PROCESSING TECHNOLOGY

SWING

CNC TUBE BENDER WITH LEFT & RIGHT-HAND BENDING CAPABILITY IN AUTOMATIC CYCLE AND 3D INTERACTIVE VISUAL PROGRAMMING

STANDARD CONFIGURATION

- Left & right-hand multi-radius and variable radius bending in automatic cycle
- 4 + 4 axis control of different radii or diameters or any required combination
- by PC based control unit model VGP with 3D graphic programming feature
- Automatic collet locking device on tube load
- Brushless motor on all axis
- Air/oil heat exchanger for oil temperature control
- Automatic mandrel lubrication with vegetable oil
- Mandrel retraction axis with quick adjustment and setting
- Machine can be integrated into any manufacturing cell
- Machine configuration with automatic loader and unloader
- Enclosed safety fencing completed with photocell at entrance, fully complying to CE regulations



SWING

LEFT & RIGHT-HAND TUBE BENDER

TECHNICAL FEATURES

Round tube capacity with:

tensile strength R=450 N/mm ²	max 30x2 mm
Al – Ms – Cu tube	max. 35 mm
Wire	max. 18 mm
Centre line radius (reducible or increasable on request)	min. 22 max. 120 mm
Useful tube length to collect from tool post.....	1620 mm
Useful tube length to rear from tool post.....	2700 mm
X-Y-Z-R- axis accuracy.....	±0,05 mm/°
X axis speed	2000 mm/sec
Y axis speed	300°/sec
Z axis speed	900°/sec
Q axis speed.....	800° mm/sec
R axis speed	300°/sec
Maximum hydraulic pressure.....	160 bar
Machine noise level	65 dB (A)
Installed power	12 kW
Machine total weight (including CNC)	2500 kg (approx)
Packing size.....	5600 x 1750 x 1700 mm (approx)

☒ Features, measures, weights and performance may be subject to change without notice. Photographs are for illustration purpose only.

CARM6 - LOADER

TECHNICAL FEATURES

Tube diameter to be loaded.....	8-35 mm
Wire diameter to be loader	8-16 mm
Tube length.....	200-3000 mm
Max. cross displacement.	850 mm
Longitudinal cross	1750 mm
Max. number of tubes Ø 8	5000
20	1600
35	300
Max. tube weight.....	1000 kg
Loader weight	3000 kg
Loader is assembled in right-hand or left-hand version	



ACCESSORIES ON DEMAND

- **Variable radius feature**
- **Boost bending** facility for tight radius bending (< 1.5D)
- Multi stack hydraulic pressure die attachment with follower position and speed set via the CNC unit
- Wiper die holder
- Pressure die holder
- Machine bed extention
- Anticipated mandrel retraction
- Weld seam detector with programmable positioning
- Automatic loader and unloader



VGP 3D – HIGHLY INNOVATIVE 3D GRAPHIC PROGRAMMING SOFTWARE

The SWING with its new PC based control system also includes a highly innovative 3D graphic programming software featuring:

- productivity increase
- simple and improved management of manufacturing process
- higher quality and consistency
- increased efficiency in production scheduling and material handling

The most innovative functions are:

- **visual and intuitive programming** on a touch screen
- immediate program self-editing with **only 2 data**
- part feasibility simulation on the PC screen highlighting the **collision area**
- **real time automatic simulation** of all working cycles with alternative solutions in order to determine the most suitable bend program comparing cycle time and costs (loading and unloading included)
- simplifying the feasibility study of very **complex components**
- full check and monitoring of all machine axis

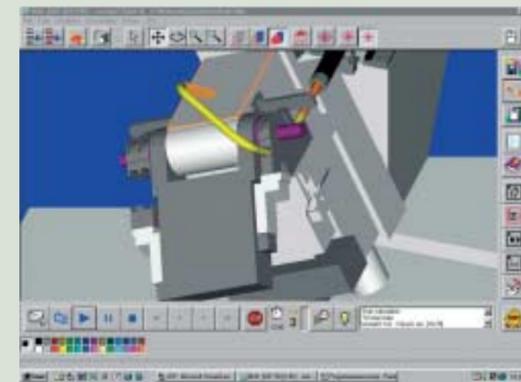
All these features can be visualised on the PC screen or off line on a remote PC unit located in the office area. The VGP 3D software is extremely useful and efficient for its user friendly program editing, CAD files download, part bending simulation and feasibility for quotation purposes (cycle time and costs). Other advantage is the off-line remote production schedule of multiple benders. Once ready the bending program is transferred via Ethernet to the machine.

Technical specifications of the PC based control unit with VGP 3D software:

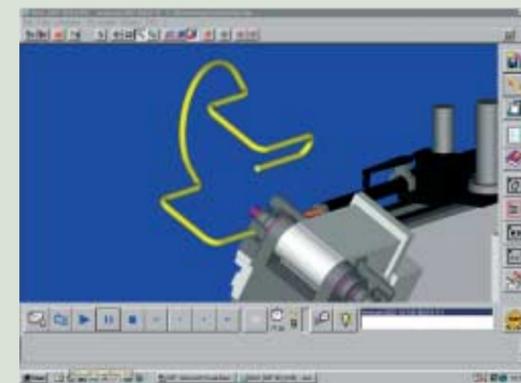
- max. 16 axis control
- 15" colour TFT touch screen
- 18 Gb hard disk
- floppy disk and CD-ROM units included
- Windows 2000 Professional® operating system
- Interactive graphic programming with tube bender 3D model
- Modem connection for remote service.



With 2 only data, starting from drawing co-ordinates, VGP 3D software creates automatically the bending program



Part real feasibility is fully simulated and checked highlighting automatically potential collisions and alternative solutions without operator's support assuring the shortest cycle time



Part feasibility is previously simulated (off-line on a PC or on the machine control unit) according to the required tube bender