

The most complete range for composites and light alloys industry.





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- 2. Products Range
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1. Company History & Highlights



Our History:

1979: **Ing. Luciano Belotti founds the company "MECCANICA BELOTTI"** in a 800 sqm building. The first contouring machine SC-13 is designed and produced for trimming of plastic components





1982: First CNC machine with 2 axis (X-Y) for panel milling. It is equipped with a CNC BOSCH



1986: Beginning of the new era.

The first 5 simultaneous axis machine prototype is produced, the RO5.

Full CNC controlled and with ball screw driven axis for the machining of 3D thermoformed plastic components.



1989: First composite application.

Sold to IVECO #8 R05 to machine bumpers in SMC





1990: New location of 4000 sqm in Suisio.

50% plastic 40% composites 10% other materials.

25 employees and 60% sales in domestic market.

2000: First FLA model dedicated to the machining of composite materials.

70% composites 20% light alloys 10% plastic

50 employees and 50% sales in domestic market.







2007: Launch of the SKY model with torque motor fork head especially designed to meet the demand of precision and power in milling of aluminum and composites structural parts.

75% composites 20% aluminum 5% plastics.



2008: Inauguration of our branch Belotti Nordest in Veneto region.

Skills:

- Assembly of TRIM and FLU series, with a production of about 20 machine per year.
- Electrospindles maintenance Number of employees: 15 people





2014: Inauguration of Belotti Fast Track in a new 1500 m2 plant in Suisio.

Skills: a turnkey manufacturing line that allows very short delivery time dedicated to the production of standard models

Number of employees: 12 people



2017: Belotti S.p.A. increases its offices area with a new 1200 m2 building, 600 m² will be dedicated to technical department and 600 m² to sales department.

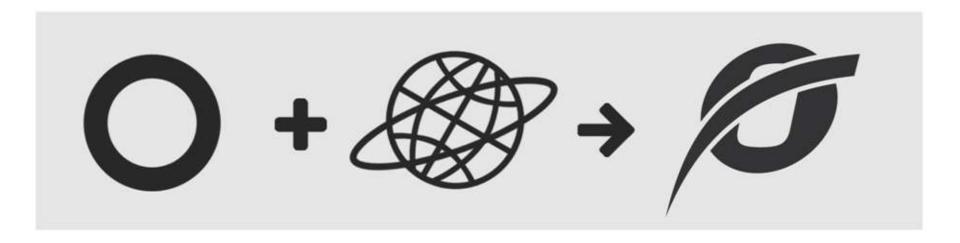
The works will begin in 2018.





Our new logo: Shape Insipiration to explain our DNA







From the beginning...



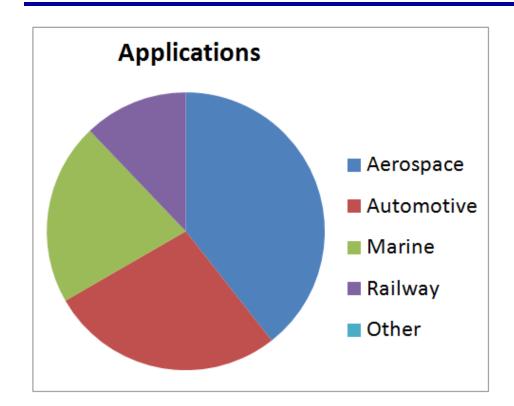


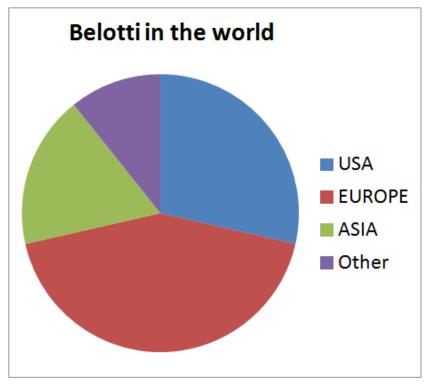
Up to now



Today's business







Our Company in numbers:



• **2016 Turnover**: € 26.000.000,00

• Number of Employees: around 120 people



- Industries we supply (turnover percentage):
- -55% Aerospace
- -30% Automotive
- -15% Others (Railway, Shipyards..)

Dun & Bradstreet Report:



Risk Evaluation

MINIMUM Risk Of Business Failure

D&B Rating	2A 1	
Financial Strength	2A	Based on net worth of € 4.722.923
Risk Indicator(1-4)	1	Represents a minimum risk of business failure.

D&B Credit Advice €1.400.000

late.

Maximum recommended credit amount, based on subject's information, level of risk, and the industry sector it operates within.





2. Products range



TRIM Series

FLA Series

FLU Series

NAVY Series

SKY Series

MDL Series

NOVA Series

VEGA Series

GEMINI Series

WATERJET



TRIM Series





TRIM series is the jewel of the 5-axis machining centers for trimming plastic and composite materials. TRIM machining centre assures good access to the working area, so that the jig is easily accessible. The working qualities of the TRIM series meet any requirements in terms of machining speed and quality. Among the various options, automatic loading/unloading systems (rotary table and twin shuttle) allows fast clamping, saving precious time.

AXIS

X: 2,5m/4,0m/5,5 m at 80m/min

Y: 1,5m/1,6/2,2m at 80m/min

Z: up to1,1 m at 60m/min

- **SPINDLE** up to 12 kW and 36.000rpm
- CNC Siemens 840D, Fanuc 31iB5, Osai Open M
- **Precisions**: less than 0,05mm/m for all the linear axis, +/-20 arc/sec for rotary axis

TRIM Options





Revolver type: from 2 up to 4 electro spindles from 1 to 4 kW. It allows a very quick tool change, less that two seconds.







Twin shuttle, fixed table and carousel table: avoiding the downtime and increase the production capacity are our specialties

TRIM Options





Machining unit with 4 independent electrospindles



Double independent gantry for simoultaneus machining



Aluminum vacuum table with T slots



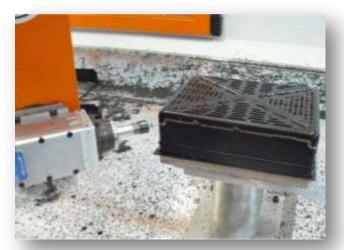
Motor with automatic tool change

TRIM At Work:





Honeycomb shaping



Trimming of plastic materials for aircraft interiors



Trimming of large-sized thermoformed materials



Trimming of thermoformed details

FLA Series





The new generation of the **FLA** series combines the productivity of a high speed milling machine to the potential of a mobile bridge machining centre. High dynamics of all axes to allow the maximum productivity for the production of any specific application fields. 80 m/min rapid speed up to 0.8 g of X -Y -Z axes acceleration represent the necessary requirements for the trimming of plastic, composites as well as patterns made of resin and wood.

AXIS

X: 3m/4m/5,5m/6,5m/9m/12m at 80m/min

Y: 1,8m/2,6m/3,2m/5,6m at 80m/min

Z: 0,9m/1,3m/2,0m at 60m/min

SPINDLE 15kW and 24.000 or 20 kW and 28.000 rpm

CNC Siemens 840D, Heidenhain iTNC530, Fanuc 31iB5, Osai Open M

Precisions: less than 0,03mm/m for all the linear axis,+/-12 arc/sec for rotary axis

FLA Options



Performance head: higher accuracy and strength for high-end applications



	Rotative	Tilting	
Rotation/oscillation max. speed	230°/sec	210°/sec	
Max. acceleration	1080°/sec²	720°/sec ²	
S1 oscillation/rotation torque	300Nm		
Clamping torque	760Nm	400Nm	
Angle measuring system	Heidenhain ERN180	Heidenhain ECN113	
Positioning accuracy	20 arcsec		
Repeatibility	10 arcsec		
Oscillation/rotation angle	-90°/+450°	+/-120°	
Weight	65Kg		

Dusty machining package: dust extraction systems comply to the latest EC rules, total enclosures and pressurized covers assures a healthy environment for operators and workers



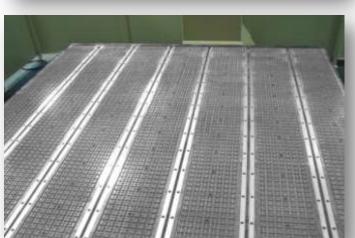




FLA Options











Conventional steel frame table, aluminum vacuum table or T-slot. Clamping systems suitable for any part fixturing need

FLA Options



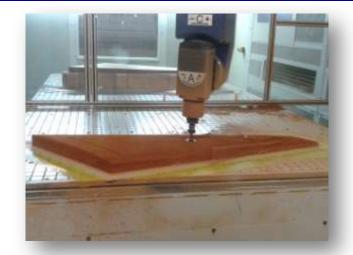




In addition to standard fixed table, special loading/unloading systems may be provided as carousel rotary table and single or twin shuttle systems

FLA At Work:

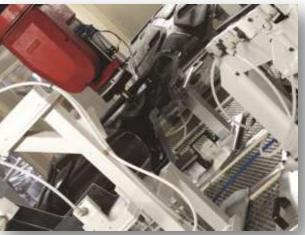




Honeycomb milling



Aluminium milling



Automotive carbon fiber milling



Resins patterns

FLU Series





The new machining center Series **FLU** built with monolithic structure to dampen vibration, is intended for high-speed milling of resin models and aluminum moulds. The special architecture of the machine allows a total accessibility to the working area, with the possibility to load jigs and pieces using a crane.

AXIS

X: 2,6m/4,0m at 80 m/min

Y: 1,7m/3,2m at 80 m/min

Z: 1,0m/1,3m at 60 m/min

SPINDLE 15kW and 24.000 or 20 kW and 28.000 rpm

CNC Siemens 840D, Heidenhain iTNC530, Fanuc 31iB5, Osai Open M

Precisions: less than 0,03 mm/m for all the linear axis, +/-12 arc/sec for rotary axis

FLU Enclosures





Total enclosure



Upper rolling shutter



Total enclosure with sliding roof

FLU Options





Standard table suitable for dust/chips suction



Aluminum vacuum table



Steel table with T slots



18 position tool change

FLU Options





Chip Conveyor



Paper filter 220 I/' a 35μm



Cleaning nozzles



CTS system

FLU At Work:

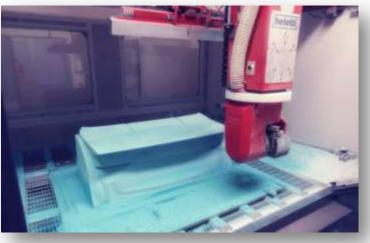




Aluminium mould machining



Carbon fiber machining with coolant



Resin mould milling



5-axis finishing on aluminium skin wing

NAVY Series





The **NAVY** series is an advanced 5-axis machining centre especially designed for boatbuilders. A wide range of models enables to meet any dimensional and technological need. Maximum flexibility is granted by this multipurpose machining centre which allows both pattern making and trimming of deck hulls, fiberglass parts and high-resistance composites.

AXIS

X: from 4m to 60 m at 80 m/min

Y: from 4,2m to 8,8m at 80 m/min

Z: from 2m to 6,8 m at 30 m/min

SPINDLE: 15 or 22kW up to 36.000 rpm

CNC Siemens 840D, Heidenhain iTNC530, Fanuc 31iB5, Osai Open M

Precisions: less than 0,05 mm/m for all the linear axis, +/-12 arc/sec for rotary axis

NAVY machining head



Performance head:

higher accuracy and strength for high-end applications

	Rotative	Tilting		
Rotation/oscillation max. speed	230°/sec	210°/sec		
Max. acceleration	1080°/sec²	720°/sec²		
S1 oscillation/rotation torque	300Nm			
Clamping torque	760Nm	400Nm		
Angle measuring system	Heidenhain ERN180	Heidenhain ECN113		
Positioning accuracy	20 arcsec			
Repeatibility	10 arcs	10 arcsec		
Oscillation/rotation angle	-90°/+450°	+/-120°		
Weight	65Kg			



NAVY Options





CCTV: When the human eye is not enough and an eagle is not trained to push the emergency button



Independent bridges: do it quicker or do it double....just do it



Telescopic Z: the best way to fit a ship in a cave

NAVY at work





Epoxy paste machining



5 axis milling on polystirene block



Wind energy - blade modeling process



Trimming of 68-feet yacht VTR deck



Hull milling



Yacht deck milling

SKY Series





The **SKY** model offers higher rigidity and accuracy on the tool bit, drastically abating vibrations and obtaining high quality work surfaces in the milling phase.

Machining centre with screw handling, equipped with optical lines, ideal for aluminum moulds and models.

AXIS

X: 2,6m/3,6m at 50 m/min

Y: 1,7m/2,2m/3,0m/5,0m at 50 m/min

Z: 1,3m at 30 m/min

SPINDLE

From 20 to 42kW up to 20.000 to 30.000 rpm

CNC Siemens 840D, Heidenhain iTNC530, Fanuc 31iB5, Osai Open M

Precisions: less than 0,015 mm/m for all the linear axis, +/-10 arc/sec fpr rotary axis

SKY Series





Motion driven by recirculating ball screws diam. 50mm pitch 40mm on the 3 linear axes, closed loop feedback with 5 micron accuracy **Heidenhain linear scale**

Chips removal system and fluid coolant, external type with 60l/min capacity at8 bar or through the cutting tool with 60l/min at40 bar



SKY Machining head





Belotti FORK head is designed and patented by Belotti. The cast iron yoke type head is equipped with torque motors, one for the fourth axis and two for the tilting axis, independently cooled. It can fit either a 20kW Fischer electrospindle at 30.000rpm or a 40kW electrospindle from IBAG at20.000rpm and 50Nm (S1) torque

4° axis: turning around Z

· Max feedrate:	60 deg/sec
· Max acceleration :	3600 deg/s2
· Nominal torque \$1/100 %:	690 Nm
· Max torque:	1250 Nm
· Operative limits:	± 270 deg
· Locking torque:	4080 Nm
· Precision accuracy:	7.5 arc/sec

5° axis tilting

· Max feedrate:	60 deg/sec
· Max acceleration:	2880 deg/s2
· Nominal torque \$1/100 % :	750 Nm
· Max torque :	1400 Nm
· tilting limits :	+135 / -110 deg
· locking torque :	2800 Nm
· Precision accuracy :	7.5 arc/sec

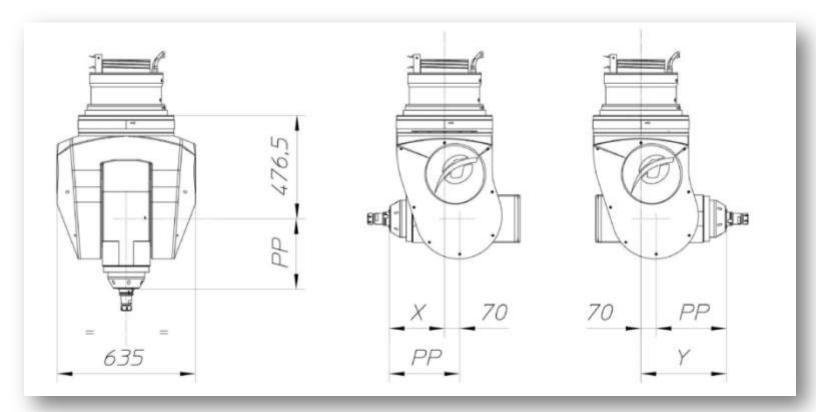
525kg

Head weight (with electrospindle)

SKY Options: Fork Head



Technical Features:



Available Electrospindles:

	"PP"	"X"	"γ"
FISCHER 42kw	300	245	385
IBAG 42 kw	325	255	395

SKY Options: Electrospindle



IBAG 30-kW SPINDLE:

•Tool interface: HSK A63

•Tool clamping system: hydraulic

•Diameter: mm 170

•Weight: kg 58

•Spindle speed MAX: rpm 22.000

•Power (S1): 30 kW

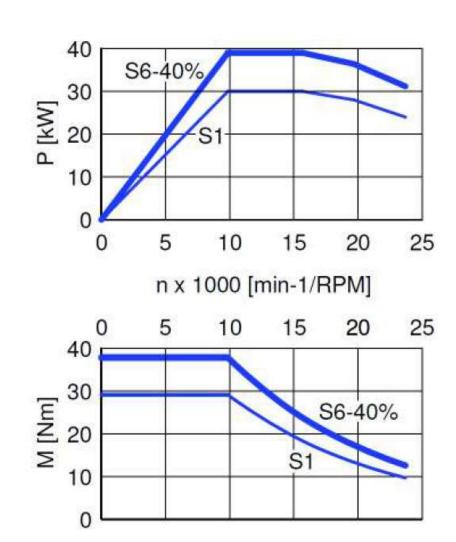
•Torque (S1): Nm 29

Motor-type: AC async star

Lubrication: grease

Spindle cooling system: front

+ motor + rear



SKY Options: Electrospindle



IBAG 40-Kw SPINDLE

Tool interface: HSK A63

Tool clamping system: hydraulic

Diameter: 170 mm

• Weight: 51 Kg

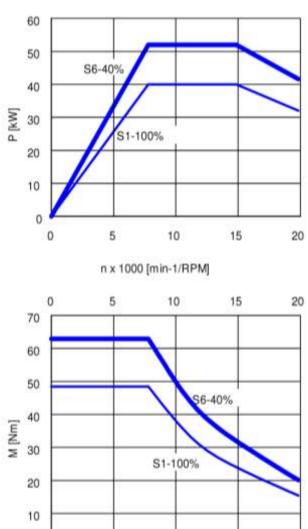
Spindle speed MAX: rpm 20.000

Power(S1): kW 40

Torque(S1): Nm 48 a 7.800 rpm

Lubrication: Grease / Air (DLS)

Spindle cooling system: liquid



SKY Options: Electrospindle



FISCHER 42-kW SPINDLE

Tool interface: HSK A63

•Tool clamping system: hydraulic

•Diameter: mm 180

•Weight: kg 58

Spindle speed MAX: rpm 24.000

•Power (S1): 42 kW

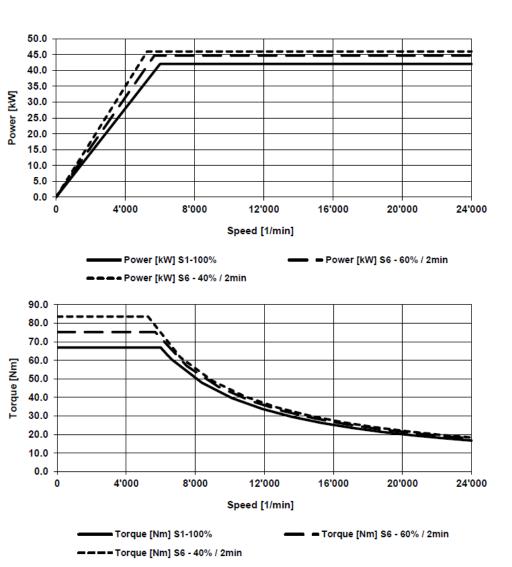
•Torque (S1): Nm 67

Motor-type: AC async star

Lubrication: oil/air (DLS)

Spindle cooling system: front

+ motor + rear



SKY Options





Motorized top cover bellow



Carousel tool change with up to 30 positions



Aluminum removable vacuum table



Total enclosure with sliding roof

SKY At Work:





Aluminium milling



High density epoxy resin



Milling test on 5 axis NAS



Aluminum machining

MDL Series





The MDL series ensures maximum productivity when milling models and prototypes as well as finishing of large-sized moulds and aluminum/composite aerospace parts. 5-axis heads equipped with torque motors, linear scales on the linear axes and high rigidity frames enhance the machining accuracy and finishing quality.

AXIS

X: from 4,0m to 30m at 50 m/min

Y: from 2,6m to 7,5m at 50 m/min

Z: from 1,5m to 4,5m at 30 m/min

SPINDLEFrom 20 to 42kW up to 20.000 to 30.000 rpm

CNC Siemens 840D, Heidenhain iTNC530, Fanuc 31iB5, Osai Open M

Precisions: less than 0,015 mm/m for all the linear axis, +/-10arc/sec for rotary axis

MDL Tech specs



The linear axis movement is managed by powerful rack and pinion drives with **two electronically** preloaded servo motors on each side, while Y and Z are managed by ball screws, diam. 50mm

All axes are equipped with highly precise, preloaded re-circulating runner blocks, section 45mm.

The Z axis is provided with hydraulic balancing system and stop devices which prevent the machine from damages in case of voltage drop.





MDL Options: Machine axes Drive (Backlash Recovery)

MOVEMENT



The x axis of the MDL "S" model, is driven by a system realized by two motors having two helicoidal pinion matched on the same rack The electronic backlash recovery is obtained thanks to the digital servo-drive that is generating a mechanical preload between the two pinions (mechanical coupling) This technical solution allows to eliminate backlash due to axis inversion motion.

The drawings explains

how the system works.

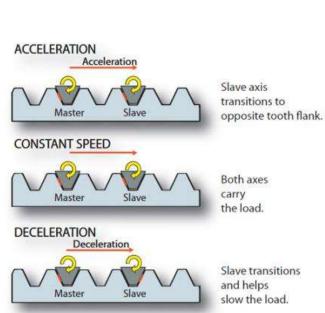
Master Slave

Master and slave axes generate opposing torque.

STANDSTILL

Master

Master and slave axes generate opposing torque.



MDL Options



MDL for pure milling technology or hybrid: the perfect combination between milling and waterjet advantages.



Double independent milling bridge



Double independent bridge:
Milling and waterjet combined
technology

MDL Options





Closed circuit control system



Universal Vacuum Fixture



Working table with embedded suction grids



Fork type machining head

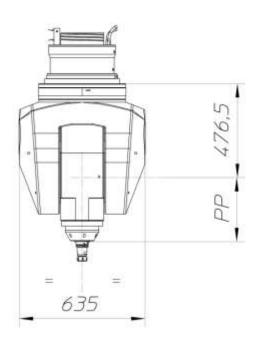
MDL Options: Fork Head

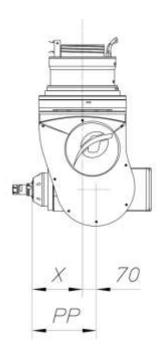


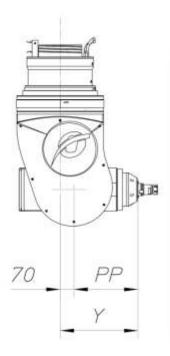
FORK HEAD MACHINING UNIT

5 axis birotative head with fork structure made of cast iron. Machining head is equipped with hydraulic brakes on A and C axes. C axis movement is managed by torque motor while for A axis is activated by double motor with torque multiplier and back-lash resetting.











MDL Options: Electrospindle



IBAG 30-kW SPINDLE:

•Tool interface: HSK A63

•Tool clamping system: hydraulic

•Diameter: mm 170

•Weight: kg 58

•Spindle speed MAX: rpm 22.000

•Power (S1): 30 kW

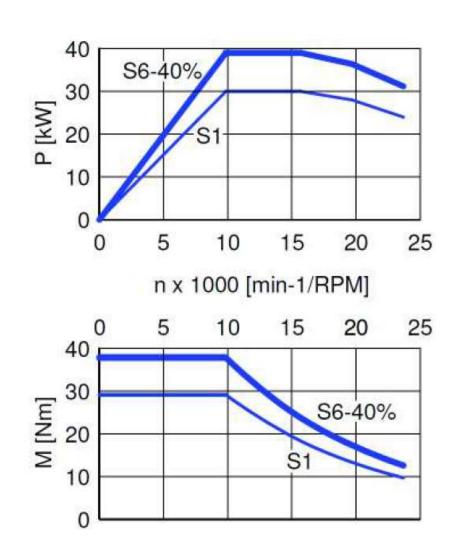
•Torque (S1): Nm 29

Motor-type: AC async star

Lubrication: grease

Spindle cooling system: front

+ motor + rear



MDL Options: Electrospindle



IBAG 40-Kw SPINDLE

Tool interface: HSK A63

Tool clamping system: hydraulic

Diameter: 170 mm

• Weight: 51 Kg

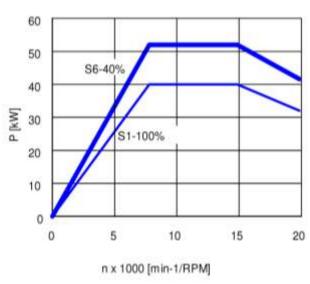
Spindle speed MAX: rpm 20.000

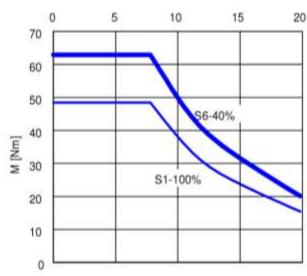
Power(S1): kW 40

Torque(S1): Nm 48 a 7.800 rpm

Lubrication: Grease / Air (DLS)

Spindle cooling system: liquid





MDL Options: Electrospindle



FISCHER 42-kW SPINDLE

Tool interface: HSK A63

•Tool clamping system: hydraulic

•Diameter: mm 180

•Weight: kg 58

•Spindle speed MAX: rpm 24.000

•Power (S1): 42 kW

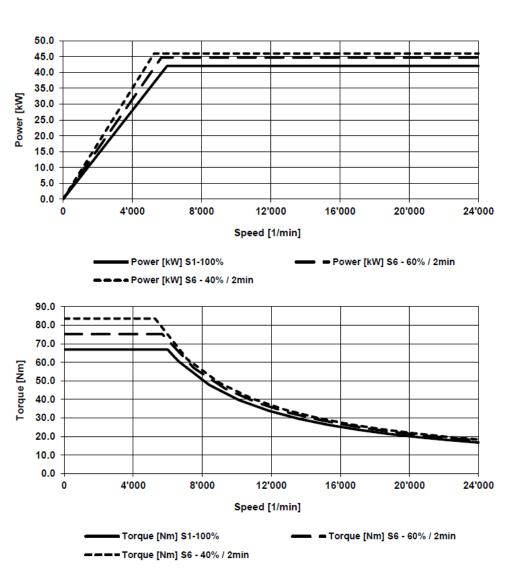
•Torque (S1): Nm 67

Motor-type: AC async star

Lubrication: oil/air (DLS)

Spindle cooling system: front

+ motor + rear



MDL Options: Suction hood





MOTORIZED SUCTION HOOD

Dust suction hood for 5 axis milling electronically controlled. In a range of 140mm the electronic hood allows to automatically adapt its extension depending on the real work piece distance.

MDL At Work:





Mould milling



Cutting of aeronautical components



Aluminium mould milling



Trimming of aeronautical details

MDL: WaterJet & Milling Technology



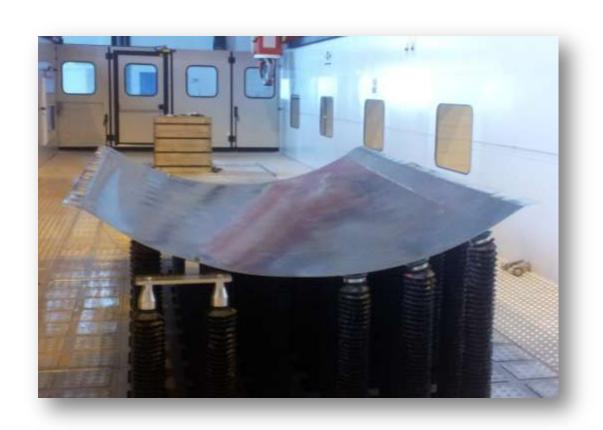
MDL Series with double independent bridge milling and water jet technology equipped with universal vacuum fixing UVF for aeronautic industry. The great experience in milling and waterjet systems make Belotti SpA leader in the production of hybrid plants, Boeing and Turkish Aerospace industries both have a large size machines with double gantry equipped with electro spindle and waterjet nozzle for carbon fiber wings, rudders and stabilizers drilling and trimming tasks.



Belotti Options: UVF Hardware



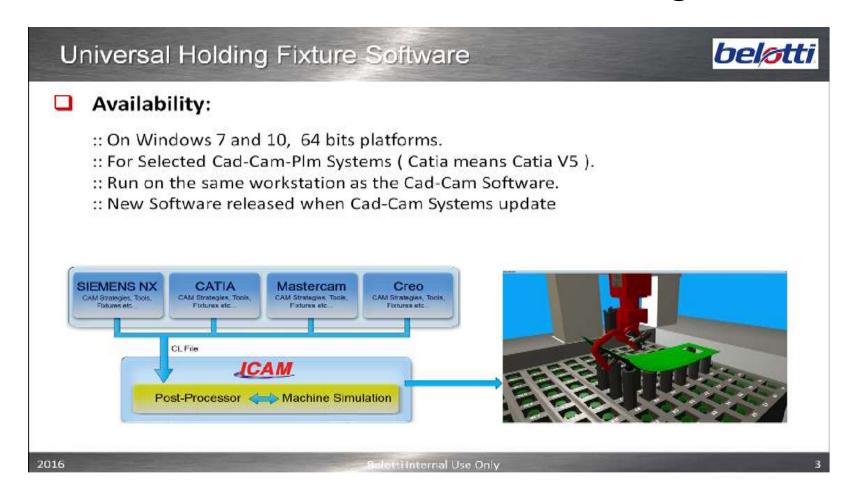
- Flexible
- Programmable
- Accurate
- Repeatable
- Fully Scalable



Belotti Options: UVF Software



Interface HMI software for UVF management



NOVA series





The **NOVA** Series CNC machining centers have a sturdy monolithic structure with a double rail system on both sides of the baseframe, allowing the maximum rigidity of the gantry during the operations. It is capable to machine several materials, as aluminum and composites, ensuring the highest performances through a 15 or 30 kW electrospindle and high performance piece locking system. The optional 5-axis head, compact and equipped with rotary axis locking system and Heidenhain direct encoders, allows an high quality and precise working of elaborated pieces.

AXIS

X: 3,0m/4,0m/5,0m/6,0m/12,0m at 50 m/min

Y: 1,6m/2,0m/2,5m/3,0m at 50 m/min

Z: 0,3m/0,5m/0,75m at 30 m/min

SPINDLE up to 30 kW and 20.000 or 30.000 rpm

CNC Siemens 840D, Heidenhain iTNC530, Fanuc 31iB5, Osai Open M

Precisions: less than 0,05 mm/m for all the linear axis, +/-12arc/sec for rotary axis

NOVA Options: CSRS



BELOTTI INNOVATION

NOVA head could be equipped with the **CSRS** (**Caterpillar Stack Routing System**) special device for a constant and high pressure compression on the tool zone during all the operation. This means the stability of the stack of sheets and the consequent improvement of the finishing and the operating speed, also solving the problem of the coolant penetration. An efficient suction system keeps the working area clean, conveying the chips in a dedicated bin and simplifying the unload of the final pieces.



NOVA Options: CSRS





NOVA Options: Load & Unload System Delicities







Belotti automatic loading & unloading conveyors allows a faster piece positioning in order to reduce cycle times

NOVA At Work:





Honeycomb shaping



Acrylic cutting



Milling Aluminium plates



Lexan cutting

VEGA Series







VEGA Series machines are 5-axis simultaneous CNC low driven portal Gantry machining centres combined with a lathe system made of headstock/tailstock.

The longitudinal movement (X axis) is made by a weightoptimized and structurally rigid portal moving in the X axis direction, for high dynamic performance and precision, the transversal movement (Y axis) is made by the carriage which runs on the bridge, and on which is mounted a vertical ram (Z axis) with high bending strength for large ranges.

The X axis movement is managed by powerful rack and pinion drives with Gantry system and electronically preloaded servo motors, while Y and Z are equipped with re-circulating ball screws.

All axes are equipped with highly precise, pre-loaded recirculating runner blocks. The Z axis is provided with balancing and stop devices which prevent the machine from damages in case of voltage drop.

The fourth axis (C) rotates the unit around the vertical (Z) axis and the fifth one (A) inclines the spindle in the vertical plane. The rotating axes are equipped with special gearbox having a system to take away the backlash.

GEMINI Series





Gemini series CNC machining centres are the result of Belotti S.p.a. long experience achieved in more than 30 years of activity in the production of machines for aluminum, composites materials and resins milling applications. Machine construction shall consist of an heavy-duty, reinforced cast iron and stress relieved steel weldment, together for machine stability.

ASSI

X: From 1,5m to 7m at 60 m/min Y/V: From 1,5m to 4 mt at 40 m/min Z: 0,3m/0,5m at 30 m/min

- **SPINDLE** up to 15 kW and 36.000 rpm
- CNC Siemens 840D, Osai Open M
- **PRECISIONI** less than 0,03 mm/m for linear axis and +/-12 arc/sec for rotary axis

WaterJet systems



Belotti is worldwide recognized as a leader company in 3 and 5 axis water jet cutting technology



The cutting can be performed either with pure water or with abrasive to increase the erosion power of the water on large thickness as well as metals, potteries, rock and bullet-proof glass

The water cutting technology is very flexible and can be used for different application fields: aerospace, composites, civil and industrial, wood, textile and paper, automotive, food.



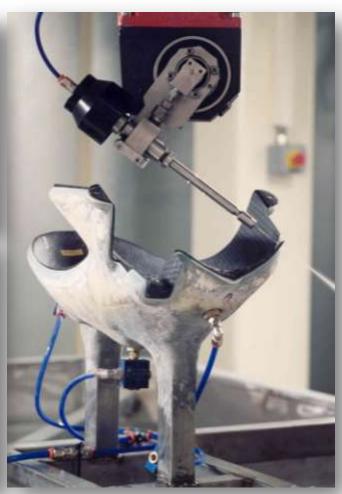
WaterJet systems











3. Applications & Success Stories





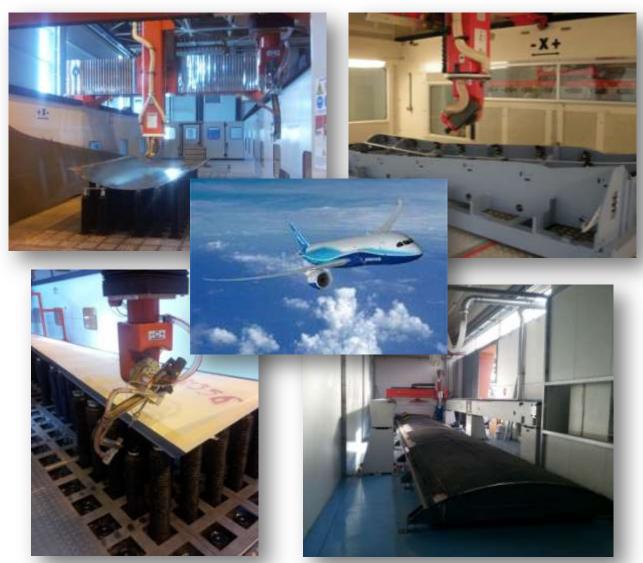
Aerospace



The complex lines of an aircraft, high-tech special materials such as carbon, kevlar and ligh alloys: for such applications **Belotti S.p.A.**

has implemented specifically designed CNC machines for top accuracy and reliability machining.

The major operators in the aeronautical field have chosen our CNC machining centres for milling operations on models and moulds and trimming composite parts.



Success Stories: Aerospace



For more than 20 years Belotti S.p.A. has been a global player of the major suppliers in the aerospace industry thanks to its ability to design special turnkey solutions for the most important companies in the aerospace industry. Here some of our successes stories:





AGUSTA WESTLAND:

- <u>Number of machines</u>: Belotti delivered no. Five 5-axis machining centers in Italy and 1 in Poland in the last 20 years (the last one in 2012)
- Application: carbon fiber pieces distructive testing, covers cutting, trimming of carbon fiber propellers, aluminium mould milling, honeycomb carbon fiber sandwiches milling.
- http://www.leonardocompany.com/

Success Stories: Aerospace









- Number of machines: We supplied them with no. 7
 big sized MDL 5-axis machining centers
- Application: for the milling of big carbon fiber structural parts
- <u>Total amount</u>: about € 8.500.000,00
- http://www.orbitalatk.com/





TAI (Turkish Aerospace Industries):

- <u>Number of machines</u>: In the last 4 years, Belotti supplied this partner with 3 different machining center no. 1 NOVA and 2 MDL Mill + WJ very similar to project one.
- Application: NOVA model is used for aluminium stack routing and MDL for milling and waterjet cutting 787 elevator and A350 flap. The second MDL is currently under installation
- <u>Total amount</u>: about € 8.000.000,00
- https://www.tai.com.tr/en

Success Stories: Aerospace







BOEING:

- <u>Number of machines</u>: No. two 5-axis machining center delivered in 2015 equipped with double independent bridge and UVS System, waterjet and milling technology as the one offered in this project
- Application: Cutting of carbon fiber components for V22 aircraft
- http://www.boeing.com/

Gulfstream[®]



GULFSTREAM:

- <u>Number of machines</u>: in 2013 Belotti delivered to Gulfstream no. 2 FLA equipped with Twin Shuttle
- Application: milling of carbon fiber business jet particulars
- Total amount: about € 1.000.000,00
- http://www.gulfstream.com/

Automotive



Belotti's machining centres find application as milling centers for the realization of style models and aluminium moulds; they are also used as milling cutters for trimming vehicle components such as dashboards and interior/exterior parts made of plastic and composite materials. The machining centre range dedicated to automotive market ensures less maintenance interventions and higher productivity.



Success Stories: Automotive







- Number of machines: No. One 5-axis machining center model MDL 8040 S delivered in 2015 to Fiat Style Center equipped with cast iron table, fork head and CN Fidia
- Application: 1:1 mould and prototypes
- https://www.fcagroup.com

METALMECCANICA TIBERINA:

 Number of machines: No. Four 5-axis machining centers FLA 5518 equipped with double independent bridge, alternate cycle and Twin Shuttle.

<u>Application</u>: milling automotive components

- <u>Total amount</u>: about € 3.000.000,00
- http://www.tiberinagroup.com/



Success Stories: Automotive











NISSAN DESIGN EUROPE:

- Number of machines: In 2013 we supplied a 5-axis machining center FLU 4018
- Application: Creation of styles model
- https://www.fcagroup.com

GURIT AUTOMOTIVE COMPOSITES:

- <u>Number of machines</u>: No. Two 5-axis machining centers FLA 5526 to the plant in UK and no. one TRIM 3022 in the Hungarian factory.
- Application: milling of composites panels for body car parts
- http://www.nissan-global.com

Success Stories: Automotive



prodrine





- <u>Number of machines</u>: In 2010 we supplied a 5-axis machining center FLA 4026, in 2013 a new FLU 2617 equipped with total enclosure
- Application: trimming of carbon components
- http://www.prodrive.com/





FORD MOTOR COMPANY:

- Number of machines: No. One 5-axis machining centers NOVA 2016
- Application: front grid model and headlights prototyping
- http://www.ford.co.uk/

Success Stories: Automotive









NOVEM CAR INTERIOR DESIGN:

- Number of machines: During 2010 and 2011 we supplied this company with no. Four 5-axis machining centers model TRIM 2515 CB equipped with double independent bridge and a FLA 4018 CB
- Application: Milling of interior car components
- http://www.novem.de/

C.P.C. SRL:

- <u>Number of machines</u>: 1 five axis machining center model FLA 4018 and two further FLA 5526 equipped with Twin Shuttle and performance head
- Application: Milling od carbon fiber components
- http://www.modelleriacpc.it/

Shipyards



The most prestigious shipyards in the world, designers and manufacturers of pleasure boats, have made the most of Belotti S.p.A. expertise for modeling and finishing yachts and small/large-sized boats. A single multipurpose machining centre will guarantee maximum flexibility for modeling and trimming of highresistance fiberglass, composite hulls and

decks of any size and

shape.



Success Stories: Shipyards









- Number of machines: From 2004 we supplied
 Persico with no. Three big sized machining centers
 model MDL 8036, 17048 and 23065
- Application: Machining of prototypes for Luis
 Vuitton cup boating race
- http://www.persico.com/



Boatbuilder since 1870



CRANCHI:

- Number of machines: In 2002 they purchased three large sized 5-axis machining centers and in 2010 an upgraded NAVY with 30-mt X stroke, 7.5-mt Y stroke 6 mt.
- Application: milling of fiberglass hulls and decks
- http://www.cranchi.com/it/

Success Stories: Shipyards





AZIMUT YACHTS:

- <u>Number of machines</u>: we supplied the customer with a cnc machining center model FLG 21062 with telescopic Z axis
- Applications: Milling of yachts structiral parts
- http://it.azimutyachts.com/



Railway



The railway industry requires sturdy, powerful and reliable machining centers and Belotti S.p.A. has been one of the most valid benchmark for the production and marketing of CNC centers dedicated to this industry. Starting by the design, Belotti S.p.A. studies the most appropriate and personalized proposals, delivering a turnkey solution that meets all the requirements this sector requires.



Success Stories: Railway







URAL LOCOMOTIVES:

- <u>Number of machines</u>: In 2013 we supplied this company with no. Two 5-axis machining centers model SKY 2617 and MDL 4026 S
- <u>Application</u>: Milling of components for vagons
- http://eng.ulkm.ru/





HITACHI:

- <u>Number of machines</u>: we are going to supply them an MDL 6040 S equipped with cast iron table with T slost. The machining center will be delivered in 2017
- •http://www.hitachi.eu/en

Architecture



Belotti S.p.A. offers unrivalled expertise in CNC machining centers for the milling of advanced composites materials for architectural designs and the way of making scale models and rapid prototyping. Our challenge is to create smarter and more flexible solutions providing customized and ongoing upgrades that provide customers with the kind of controls they need to maximize lean performance.



Success Stories: Architecture







Cassina



PREMIER COMPOSITES TECHNOLOGIES:

- <u>Number of machines</u>: During 2015 we supplied Premier Composites with a NAVY 19075 equipped with 15 kW spindle, performance head and perimeter enclosure.
- Application: Milling of advanced composite components for the Architectural Design
- •http://www.pct.ae/

CASSINA S.P.A:

- Number of machines: No. 1 machining center model FLU 2617 with performance head and total enclosure
- Applications: Prototypes for the realization of foaming and wood molds
- http://www.cassina.com/it

Further Applications:





Aerospace – UAV and satellites











Honeycomb











Success Stories: Honeycomb







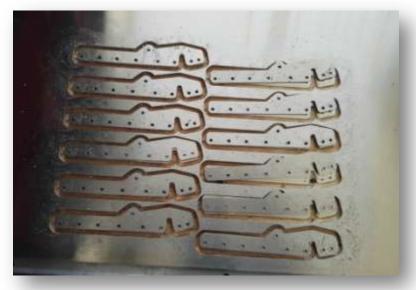
Euro Composites:

- <u>Number of machines</u>: In the last 8 years they purchased no.24 FLA and 2 MDL 5-axis machining centers (three of them scheduled for delivery in 2017)
- Application: Milling of composites materials and honeycomb
- <u>Total amount</u>: about € 12.000.000,00
- http://www.euro-composites.com/

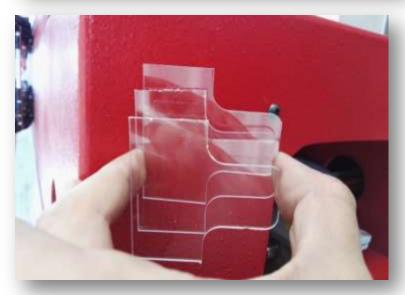
Stack sheets











Success Stories: Stack Sheets











TECNAM SRL:

- Number of machines: supplied 3 machining centers model NOVA 4030, MDL 4026 and one 3-axis CPT 4020 AWJ
- Applications: Aircraft components production
- Total amount: about € 1.000.000,00
- http://www.tecnam.com/it/

YEPSAN:

- Number of machines: In 2016 we installed two machining centers NOVA 3716 S version
- Applications: production of components for aerospace industry
- •<u>Total amount</u>: about € 900.000,00
- http://www.yepsanssh.com.tr/

4. Belotti Services



Maintenance Contracts

Original BELOTTI Service Products are reliable solutions to protect you from any inconvenience.

- **BELOTTI Compact**: Basic Maintenance
- **BELOTTI Classic**: Advanced Maintenance
- BELOTTI Excellent: Full Maintenance
- •**BELOTTI Express:** Guarantees service response in 24-36 hrs after request





Customer Service





- Our knowledge and expertise are at your disposal for any friendly advice you may require. Our highly qualified team will help you supplying an effective **free of charge** support by telephone.
- In case our hot line can't help you on the phone, our qualified engineers will be able to assist you directly on your plant.

Spare Parts & Warehouse



Our spare parts warehouse is ready to supply you with any spare parts and accessories worldwide shortly.



Belotti Training



Full use of the potential of your BELOTTI machining centre.

BELOTTI Training drives your productivity to achieve great dynamism and several advantages:

- Module-based praxis-oriented training in programming, outfitting and using your BELOTTI machining centre.
- Cutting-edge equipment, innovative educational programmes. Highly qualified trainers, providing fully certified educational methods.
- BELOTTI training certificates to all participants. Life-long qualification improvement for trainees.



Upgrade & Retrofitting



Need to upgrade your machining center?

Don't worry!

Belotti S.p.A. can study the very best solution for your equipment, improving performances and efficiency in order to comply with production and market demand.

Our technical department is at your service offering the perfect partnership: we will advise, guide and provide you with our experience whenever you need it.

You can continue to use your existing equipment while updating it with today's technology.

Belotti Warranty



All our machines are covered by component and operator warranty
The standard warranty may be extended for a further two or three years of machine life or 2000 to 4000 operating hours.

This solution is particularly profitable for our customers as it provides full coverage of the servicing time as well as any spare parts required to remedy the fault.



Teleservice



Teleservice software allows
Belotti customer service to
provide immediate diagnosis,
troubleshooting and application
support.

Thanks to a modem installed on your CN our team can perform fault detection and analysis directly by phone.





THANK YOU!