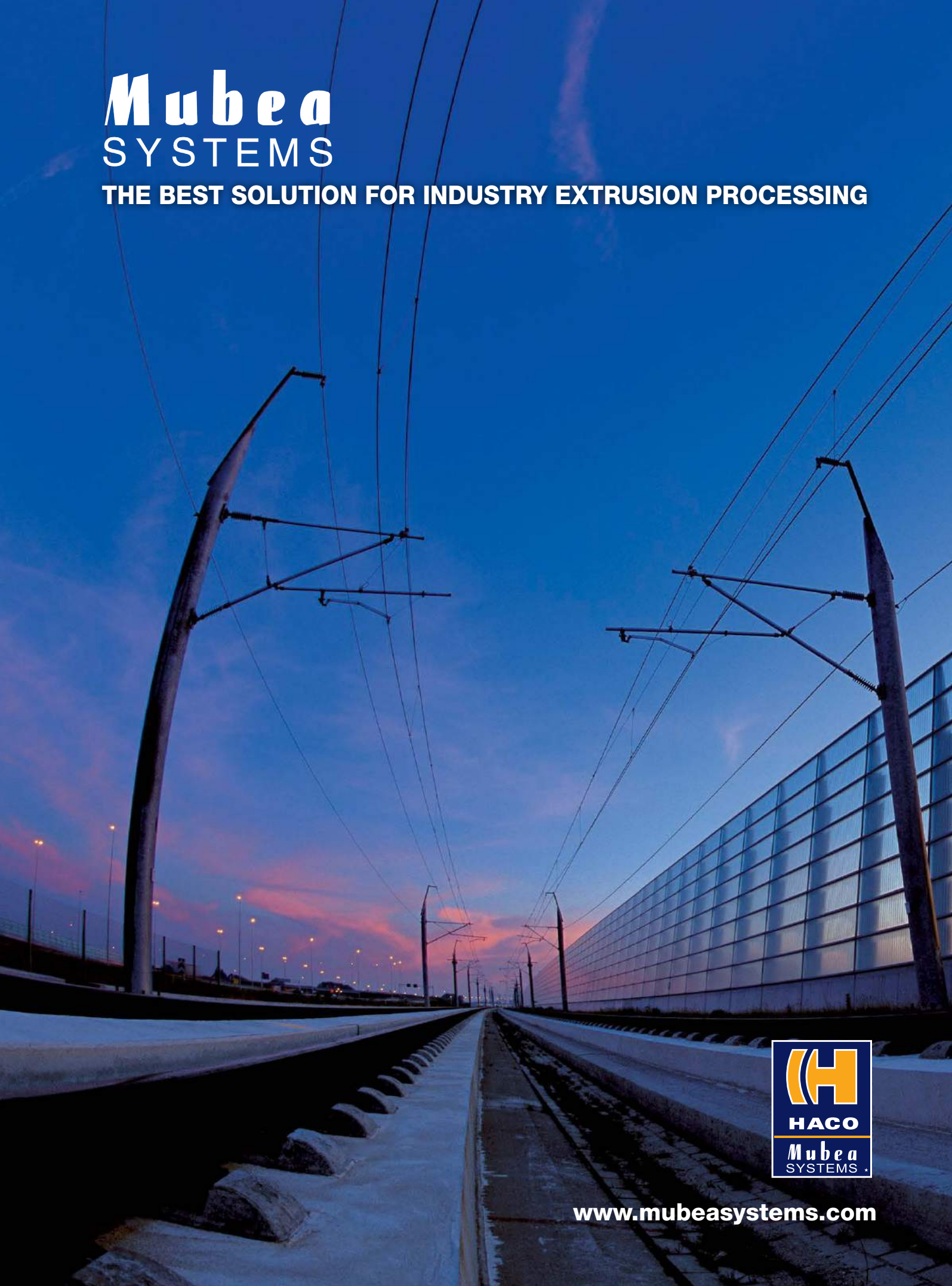

Mubea
SYSTEMS
THE BEST SOLUTION FOR INDUSTRY EXTRUSION PROCESSING
HACO
Mubea
SYSTEMS
www.mubeasystems.com

1965

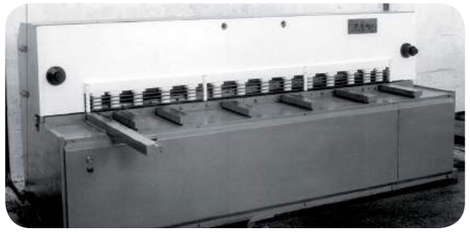
Rogier Havegeer and Roger De Marez start their own company producing hydraulic components and providing maintenance and repair services. It was the initial seed from which the worldwide HACO Group NV and its related companies have grown.

1965 - 1972

The business grows steadily, evolving from a Flemish-family-owned locally anchored business into an international organization.

1972

HACO develops a sheet metal guillotine shear and took its first steps towards becoming an expert and reputable machine builder. This was indeed an important step toward diversification and specialization.



1972 - 1985

HACO continued its move into machine building, specialization and expansion of capacity.

1985

HACO founds ROBOSOFT and develops hardware and software for CNC controls. This eventually led to the group's second product – electronics - which stands alongside machine building.

1986

HACO takes over BRET in France. This specialist in mechanical and die forging presses opened a new path for HACO in the automobile industry. The production of consumer goods created many other opportunities.

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1987

HACO takes over SCMB BLISS in France. This completes our full press program with the addition of hydraulic presses. From this point on, HACO has a solution for all your press requirements.

1991

HACO acquired Kingsland. This acquisition added hydraulic multi-purpose steel working machines to HACO's program. HACO machines were now found in virtually every workshop.

1993

HACO added OMES in Italy to the group, and introduced the CNC punching machines to its program. Shorter production time and increased flexibility were now trademarks of HACO. Take-over of the French GUILLET/CHAMBON enlarged the range of woodworking machines of HACO.

1996

Acquisition of MUBEA SYSTEME completed its program of multi-purpose steel working machine plus customer-designed drilling, punching and cutting lines.

1999

FAT in Poland became part of HACO, offering affordable lathes and milling machines. These machines are easy to operate, thanks to high-level controls. They are also suited for machining a wide variety of different materials.

2000

HACO took over LSP in Slovakia, increasing its offering of press brakes and shears, thus expanding the company's presence in Eastern Europe.

2001

Mubea starts with the development and production of prototypes of 4 and 5 axis profile processing machining centers complete with integrated CNC clamping and application driven software solutions.

2006

A new branch and two production plants in Ningbo, China were set up to strengthen relationships with customers in the East.

2008

HACO starts production and sales in India offering pressbrakes, shears expanding its production domination around Asia.

2009/2010

HACO Mubea proudly offers 5 axis machining centers with dimensions longer then 30m specifically for the high speed train and aircraft industry, machining heavy duty aluminum profiles and panels throughout the world.

2011

HACO Mubea starts with a production of machining centers up to 60 m long with single and double head with double X-axis and total clamping system for profile and panel machining.

2013 - ...

HACO Mubea starts with developing high gantry machining centers up to 30 m length for solid machining.

For Impressive Performances

We help you to build trains faster, more accurately and more efficiently.

Wim Cuyvers
Sales Director Mubea Systems

Mubea Systems manufactures a complete range of 4- and 5-axis CNC machining centres, specially designed for automatic tooling of exceptionally long aluminium and steel profiles and panels such as for trains.

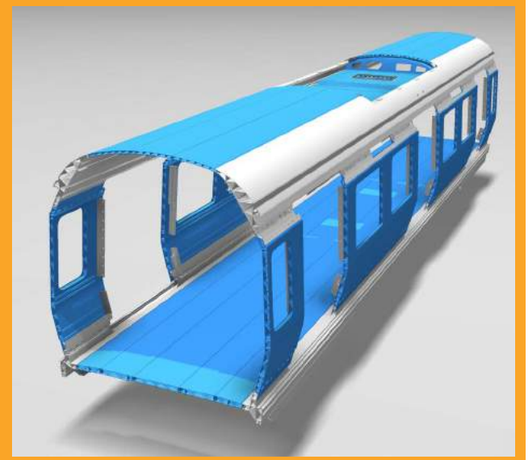
Mubea Systems is **the only company in the world** that has all 4 key-points for industrial cutting of aluminium profiles in-house:

1. 5-axis Machining (single- or twin-head) up to 60 m (2,372.0 “) long and 3.5 m (137.80 “) wide.

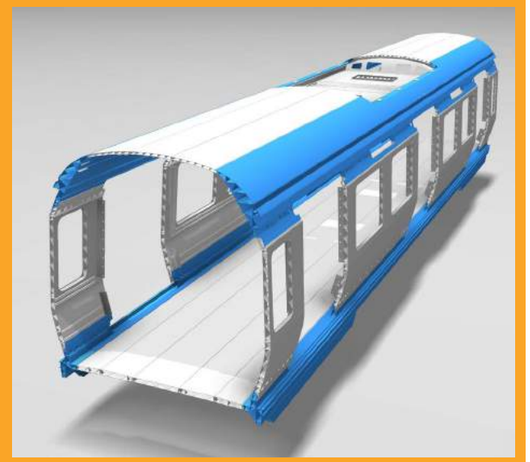
2. Moveable Clamps with X-axis or with an individual servo motor.

3. Pyramid 3D Profile Software with optional 5-axis cutting.

4. Probe Measuring (up to 3 measure points) to recalculate the parameters instantly for the NC-program for translation and rotation.



Side walls, roofs and floors for trains: up to 30 m long / 3.5 m wide.



Train cantrails and solebars: choose the machine according to the size of the profile section

For Impressive Performance

For Impressive Performances

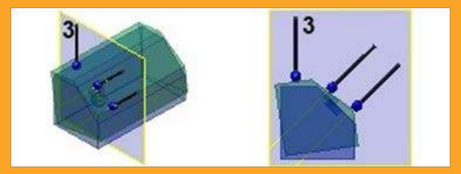
Ultra-precise 3D-measurement before cutting the profile: this is where Mubea makes the difference.

This is where we make the difference and why we have earned so many clients: our Pyramid 3D Software includes a 3D Measuring module that enables 3 measurements to guarantee a single – but fully accurate – processing of the profile.

What's the great benefit?

3D Measuring is the greatest benefit from Mubea Systems – it's the reason customers contact us.

Why? Because an industrial profile is never straight. So we have to make measurements. Moreover, to machine at exactly the right place on an industrial profile, 1 measurement is not enough. With our software, we can make up to 3 measurements to accurately prepare 1 machining operation. And above all: we do this in-house!

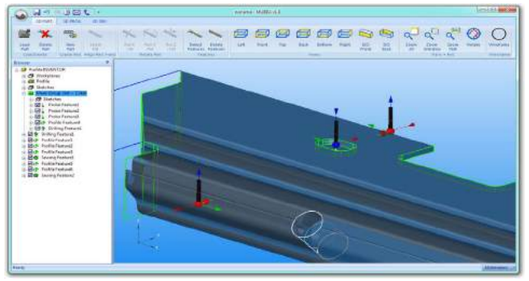


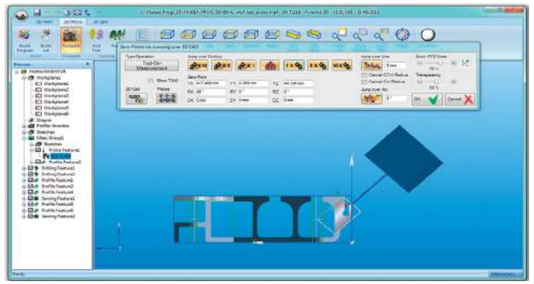
How does it work?

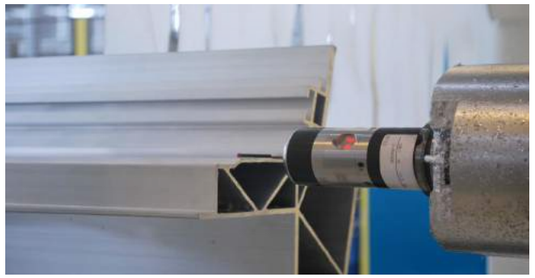
With a radio wave probe tool, the machine measures a surface anywhere on the profile, compares it with the theoretically expected coordinates, and calculates the difference.

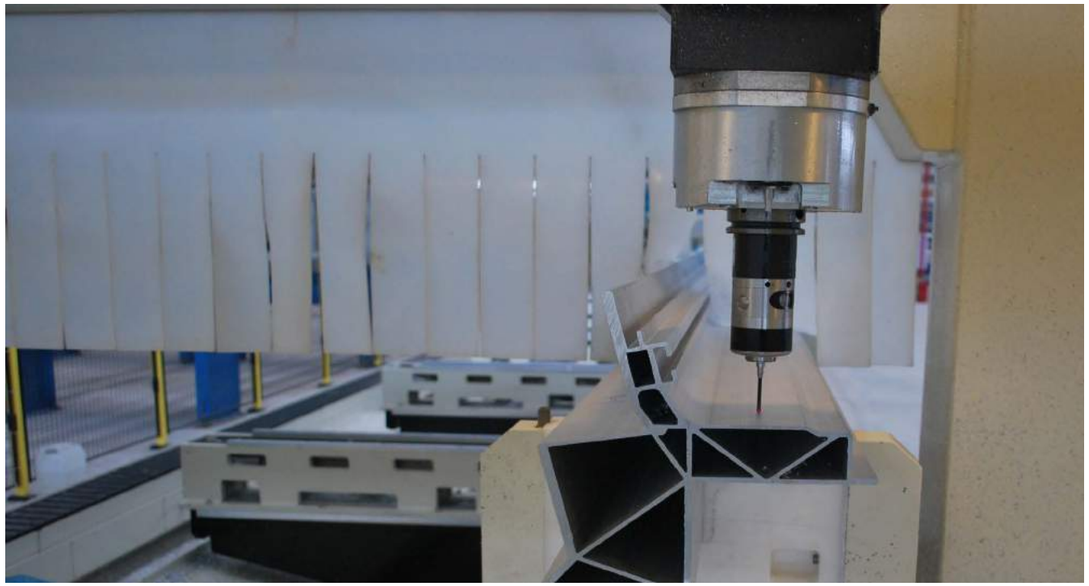
With these deviations, the Mubea 3D Measuring system on the machine calculates the right translations and/or rotations, depending on the type of measurement group technology that has been chosen in the Mubea Pyramid 3D software.

These translations and rotations are then converted into the right transformations for the initial machining operation. When necessary, these compensations also turn the A-axis and/or the C-axis.

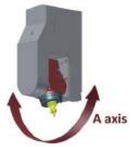
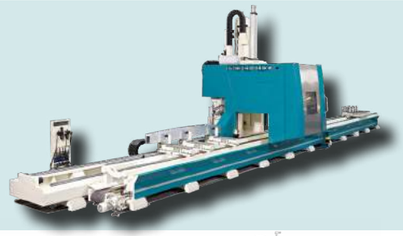
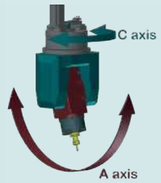
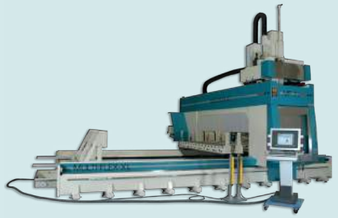
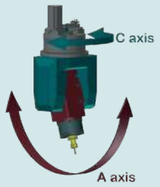






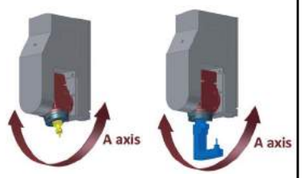


Product overview

		SPINDLES	PROFILE SECTION	TOOL TURRET	CLAMPS	
ALU-FLEX		 12 KW / 16.3 Hp	W = 550 mm / 21.65 “ H = 200 mm / 7.87 “	**12 positions** max L12: 160 mm / 6.30 “ max D12: 120 mm / 4.72 “	move X = X-axis move X = servo driven move Y = manual move Y = handle	P. 12 - 19
PROFILE-FLEX		 18 KW / 24.5 Hp	W = 550 mm / 21.65 “ H = 370 mm / 14.57 “	**36 positions** max L18: 200 mm / 7.87 “ max D18: 520 mm / 20.47 “	move X = X-axis move X = servo driven move Y = manual move Y = handle	P. 20 - 27
MULTI-FLEX		 18 KW / 24.5 Hp  25 KW / 34.0 Hp  39.5 KW / 53.7 Hp	W = 1.300 mm / 51.18 “ H = 650 mm / 25.59 “	**36 positions** max L18: 200 mm / 7.87 “ max D18: 520 mm / 20.47 “ max L25: 220 mm / 8.66 “ max D25: 700 mm / 27.56 “	move X = X-axis move X = servo driven move Y = manual move Y = handle	P. 28 - 37
MULTI-FLEX XL		 18 KW / 24.5 Hp  25 KW / 34.0 Hp  39.5 KW / 53.7 Hp	W = 3.000 mm /118.11 “ H = 650 mm / 25.59 “	**36 positions** max L18: 200 mm / 7.87 “ max D18: 520 mm / 20.47 “ max L25: 220 mm / 8.66 “ max D25: 700 mm / 27.56 “	move X = X-axis move X = servo driven move Y = manual move Y = handle	P. 34 - 37
MEGA-FLEX		 25 KW / 34.0 Hp  39.5 KW / 53.7 Hp  44 KW / 59.8 Hp	W = 3.500 mm / 137.79 “ H = 1.000 mm / 39.37 “ H = 1.500 mm / 59.55 “	**36 positions** max L25: 200 mm / 7.87 “ max D25: 520 mm / 20.47 “ max L44: 220 mm / 8.66 “ max D44: 700 mm / 27.56 “	move X = X-axis move Y = manual	P. 38 -45

For Impressive Performance

For Impressive Performances



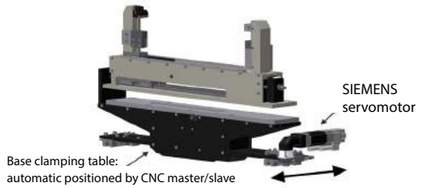
Spindle 12 KW / 16.3 Hp - HSK-F63 - 22.000 RPM
A-axis -90° up to +90°
Max. tool diameter = 330 mm / 4.72 “
Max. tool length = 160 mm / 6.30 “

Mitre saw unit
Pneum. tilting -45°/0°/+45°
CNC tilting -45°up to +45°
Saw diameter = 600 mm / 23.62 “

12 position CNC rotary tool magazine
Automatic door for protection
Tool magazine travelling with column

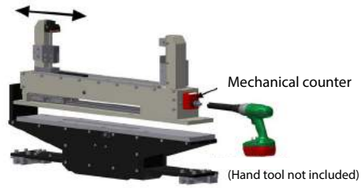
2 position rotary magazine for:
- angular tools
- large tool diameters up to 330 mm / 13 “

Max. 2 magazines (= max. 4 tool positions)



Replacable Clamps along the X-axis
- Positioned by gantry
- Positioned by pull bar
- Positioned by servo motor

Maximum 32 clamps possible



Replacable Clamps along the Y-axis
- Positioned manual
- Positioned by handle with mechanical counter

Maximum clamping capacity: 550 mm / 21.65 “
Optional double clamps possible

4-AXIS GANTRY ALU-FLEX

Work Piece Width	=	550 mm / 21.65 “
Work Piece Height	=	200 mm / 7.87 “
Work Piece Length	=	up to 30.250 mm / 1,190.9 “

ALU-FLEX with different dimensions on request

Miter saw unit traveling together with X-axis of the machine

Stationair magazine for 2 angular or large tools

Spindle in horizontal positon

4-AXIS ALU-FLEX TWIN HEAD

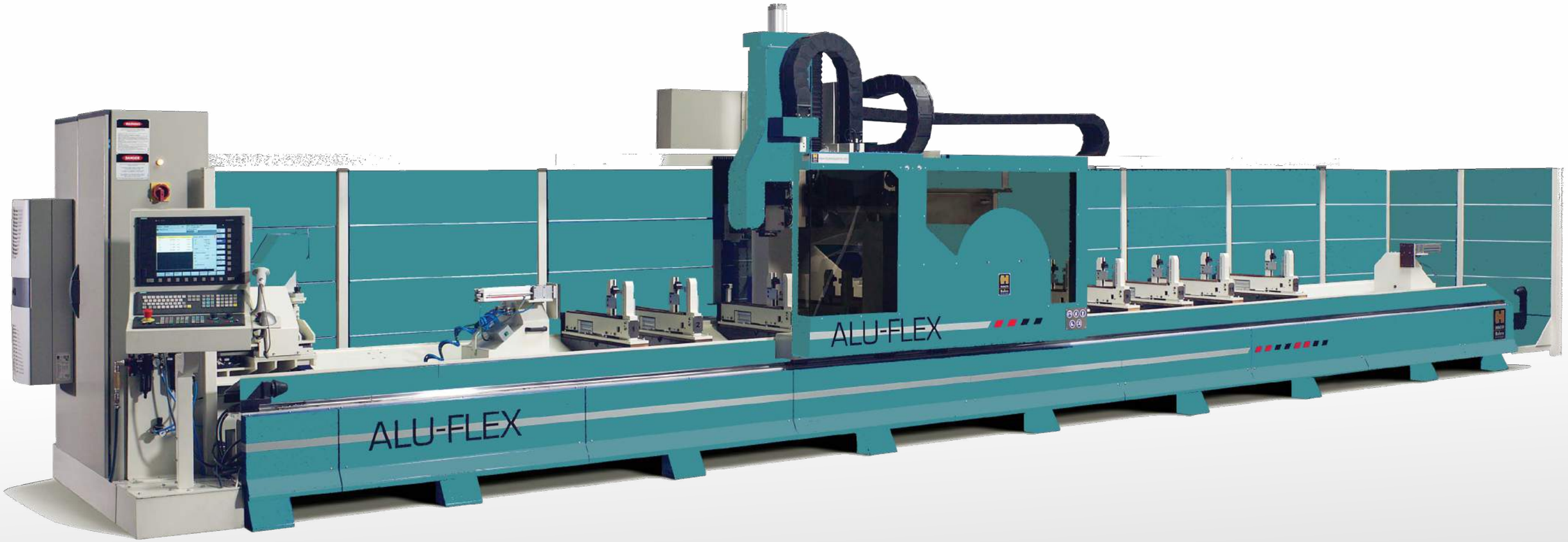
Work Piece Width	=	550 mm / 21.65 “
Work Piece Height	=	200 mm / 7.87 “
Work Piece Length	=	up to 30.250 mm / 1,190.9 “

ALU-FLEX TWIN HEAD with different dimensions on request

Safety protection with scanners and yellow safety area

Lifting chip conveyer

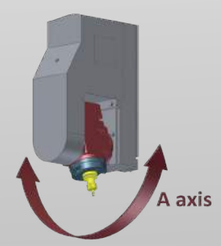
Spindle in vertical positon



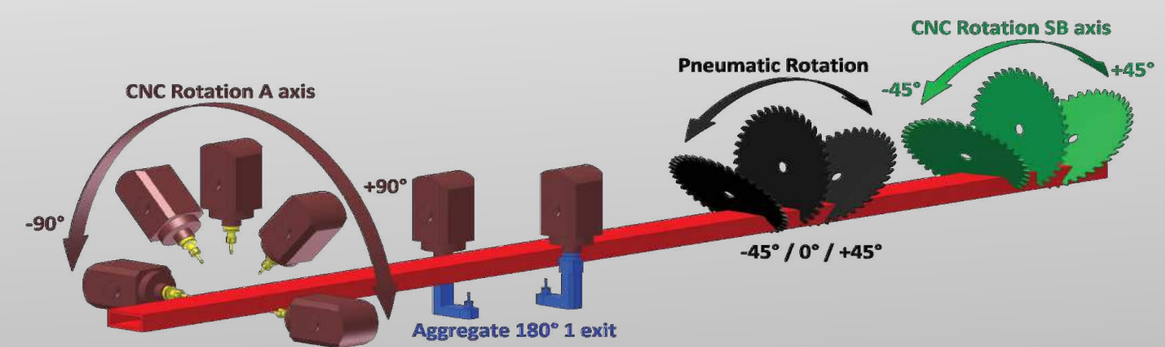
4-AXIS GANTRY ALU-FLEX

Work Piece Width	=	550 mm / 21.65 “
Work Piece Height	=	200 mm / 7.87 “
Work Piece Length	=	up to 30.250 mm / 1,190.9 “

ALU-FLEX with different dimensions on request



12 KW / 16.3 Hp



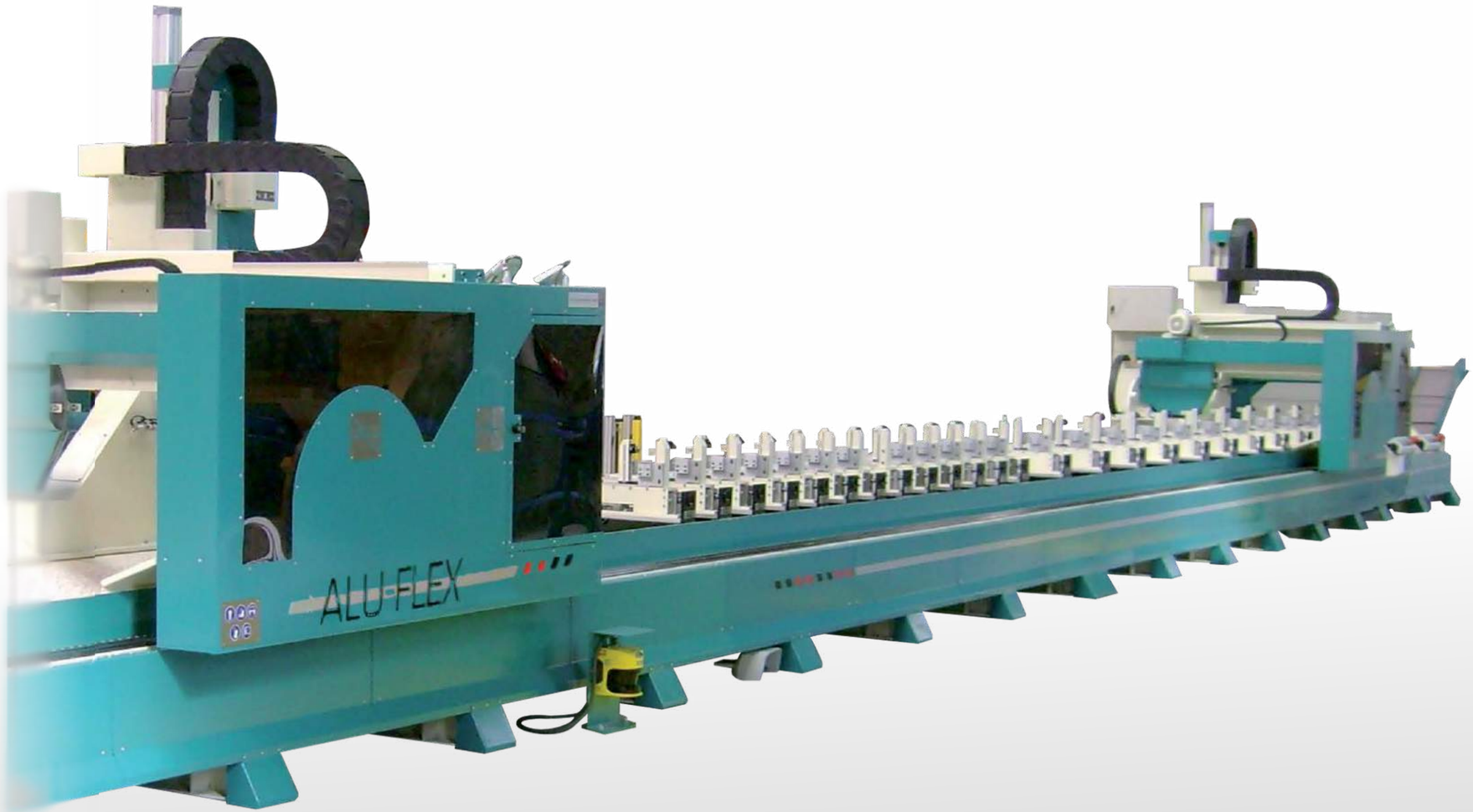
Cross section
Height 200mm Width 550mm

Special angular tool working
underside of the profiles possible

Mitre sawing +45°
Profile Height 120mm

Mitre sawing 0°
Profile Height 200mm

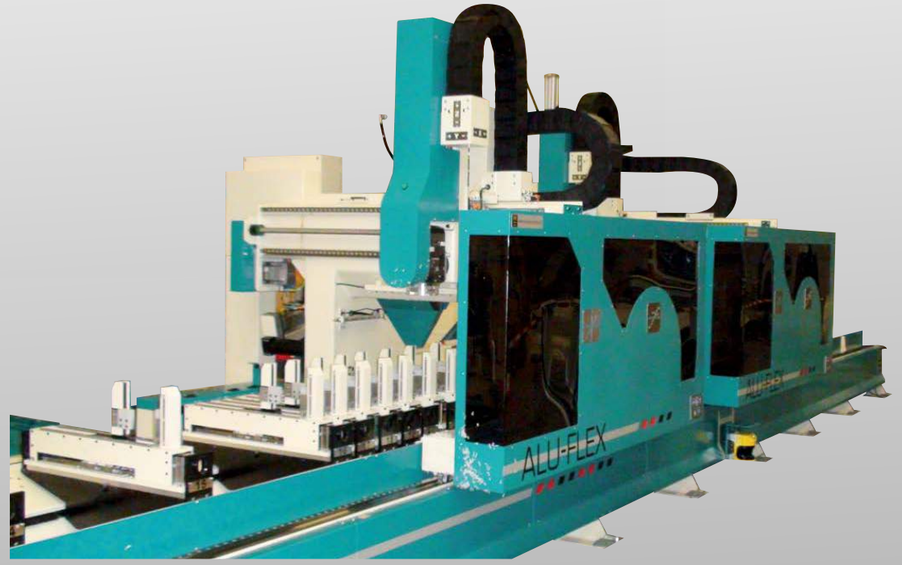
Mitre sawing -45°
Profile Height 100mm

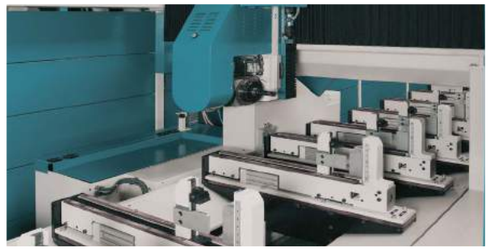


4-AXIS ALU-FLEX TWIN HEAD

Work Piece Width	=	550 mm / 21.65 “
Work Piece Height	=	200 mm / 7.87 “
Work Piece Length	=	up to 30.250 mm / 1,190.9 “

ALU-FLEX TWIN HEAD with different dimensions on request





- Spindle 12 KW/ 16.3 Hp - HSK-F63 - 22.000 RPM
- A-Axis -90° up to +90°
- Max. tool diameter = 330 mm / 4.72 “
- Max. tool length = 160 mm / 6.30 “

- Mitre saw unit
- Pneum. tilting -45°/0°/+45°
- CNC tilting -45° up to +45°
- Saw diameter = 600 mm / 23.62 “

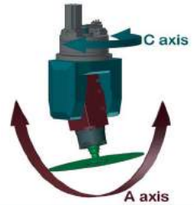
- 12 Position CNC rotary tool magazine
- Automatic door for protection
- Tool magazine travelling with column

- Optional ATC for Special Tools (2 or 4 positions)

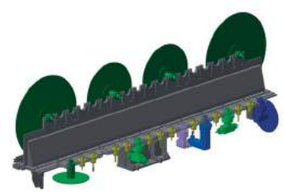
- Tool for working on profile from underneath

	ALU-FLEX STANDARD SPECIFICATIONS	METRIC	IMPERIAL
Machine specifications	AF 8820 - X-axis processing length / X-axis processing length including sawing	8.820mm / 7.620mm	347.2 “ / 300.0 “
	AF 10320 - X-axis processing length / X-axis processing length including sawing	10.320mm / 9.120mm	406.3 “ / 359.1 “
	AF 30250 - X-axis processing length / X-axis processing length including sawing	30.250mm / 29.050mm	1,190.9 “ / 1,143.7 “
	AF TH 30250 - X-axis processing length / X-axis processing length including sawing	30.250mm / 29.050mm	1,190.9 “ / 1,143.7 “
	Maximum processing profile section	550mm x 200mm	21.65 “ x 7.87 “
	Max. speed X-axis	80m / min	52.5 “/s
	Max. speed Y-axis	60m / min	39.4 “/s
	Max. speed Z-axis	30m / min	19.7 “/s
	Max. speed A-axis	90° / s	90° / s
Spindle 12 KW	CNC tilting of the milling motor - A-axis	-90° up to +90°	-90° up to +90°
	Spindle motor power S1 (100% load) / S6 (60% load) - HSK F63	10 kW / 12 kW	13.6 Hp / 16.3 Hp
	Spindle foreseen with encoder for rigid (synchronise) tapping	Standard	Standard
	Maximum rotation speed	22.000 RPM	22,000 RPM
	Adjustable spindle speed by program / manual by operating panel	Standard	Standard
	Micro drop cooling spindle motor	Standard	Standard
	12 CNC rotation tool magazine HSK F63	Standard	Standard
	Maximum tooldiameter	120 mm	4.72 “
Saw unit	Pneumatic tilting saw unit with 3 fixed positions -45° / 0° / +45°	Standard	Standard
	Motor power	2.2 kW	3.0 Hp
	Fixed rotation speed saw unit	2.800 RPM	2,800 RPM
	Spray lubrication of the saw unit	Standard	Standard
	Diameter saw blade	600mm	23.62 “
	Programable feed of the saw unit	Standard	Standard
NC	Siemens 810 D controller with windows XP - 15” TFT	Standard	Standard
	Network, modem, teleservice and USB connections	Standard	Standard
	Siemens querty panel and operating panel	Standard	Standard
	Siemens Sinumerik service contract	1 year	1 year

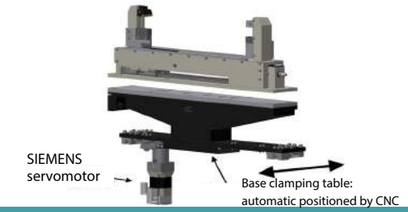
ALU-FLEX OPTIONS
CNC tilting saw unit between -45° and +45°
Clamps moved by X-axis of the machine - the width is manual adjustable
Clamps moved by X-axis of the machine - the width is adjustable with handle with mechanical counter
Pull / Push bar systems to move clamps with work piece(s) in the X-direction plus or minus
Clamps simultaneous moved by servo motor on each clamp - the width is manual adjustable
Clamps simultaneous moved by servo motor on each clamp - the width is adjustable with handle with mechanical counter
Double clamps or special clamps available on request
Zero point left
Zero point right
Laser zero point
2 working zones for pendular working with the machine with scanners, no mechnical barriers for loading long pieces
Chip conveyor inside machine
Magazine for 2 angular aggregates for cutting at the underside or between 2 profiles or large diamters upto 300 mm (max. 2 magazines)
Spray cooling for angular aggregates
Aggregate tools for end processing, cutting under side, cutting between 2 profiles, saw unit curtain wall
Pyramid 3D Cad-Cam software - Including 3D simulations and time calculation
Pyramid 3D Option: Measure Softwarel: Integrated measuring software for automatic compensation of the NC program
Pyramid 3D Option: 3D chamfers and ruled surfaces
Pyramid 3D Option: Curved profiles
Pyramid 3D Option: Nesting & Cleat Cut
Probe to measure profile before cutting with automatic compensation of the program
Compensation of the length depending the temperature of the machine and temperature of the profile
Siemens Sinumerik service contract up to maximum 5 years



Spindle 18 KW - HSK-F63 - 24.000 RPM
A-Axis -120° up to +120°
C-Axis -215°up to +215°
Max. tool diameter = 520 mm / 20.47 “
Max. tool length = 200 mm / 7.87 “

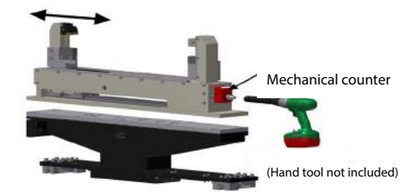


36 Position CNC linear tool magazine
Capacity for 4 x 520 mm
Standard foreseen for angular tools
Automatic door for protection
Tool magazine travelling with column



Replacable Clamps along the X-axis
- Positioned by gantry
- Positioned by pull bar
- Positioned by servo motor

Maximum 32 clamps possible
Optional large clamps possible



Replacable Clamps along the Y-axis
- Positioned manual
- Positioned by handle with mechanical counter

Maximum clamping capacity: 550 mm / 21.65
Optional double clamps possible

5-AXIS C-FRAME PROFILE-FLEX

Work Piece Width	=	550 mm / 21.65 “
Work Piece Height	=	370 mm / 14.57 “
Work Piece Length	=	up to 30.250 mm / 1,190 “

PROFILE-FLEX with different dimensions on request


Custom made support blocks for round profiles


Workpiece loaded at custom made support blocks


Measuring of round profile

5-AXIS PROFILE-FLEX TWIN HEAD

Work Piece Width	=	550 mm / 21.65 “
Work Piece Height	=	370 mm / 14.57 “
Work Piece Length	=	up to 30.250 mm / 1,190 “

PROFILE-FLEX TWIN HEAD with different dimensions on request


Bended Profile


Profile Flex Twinhead


Endwork of a large and long profile

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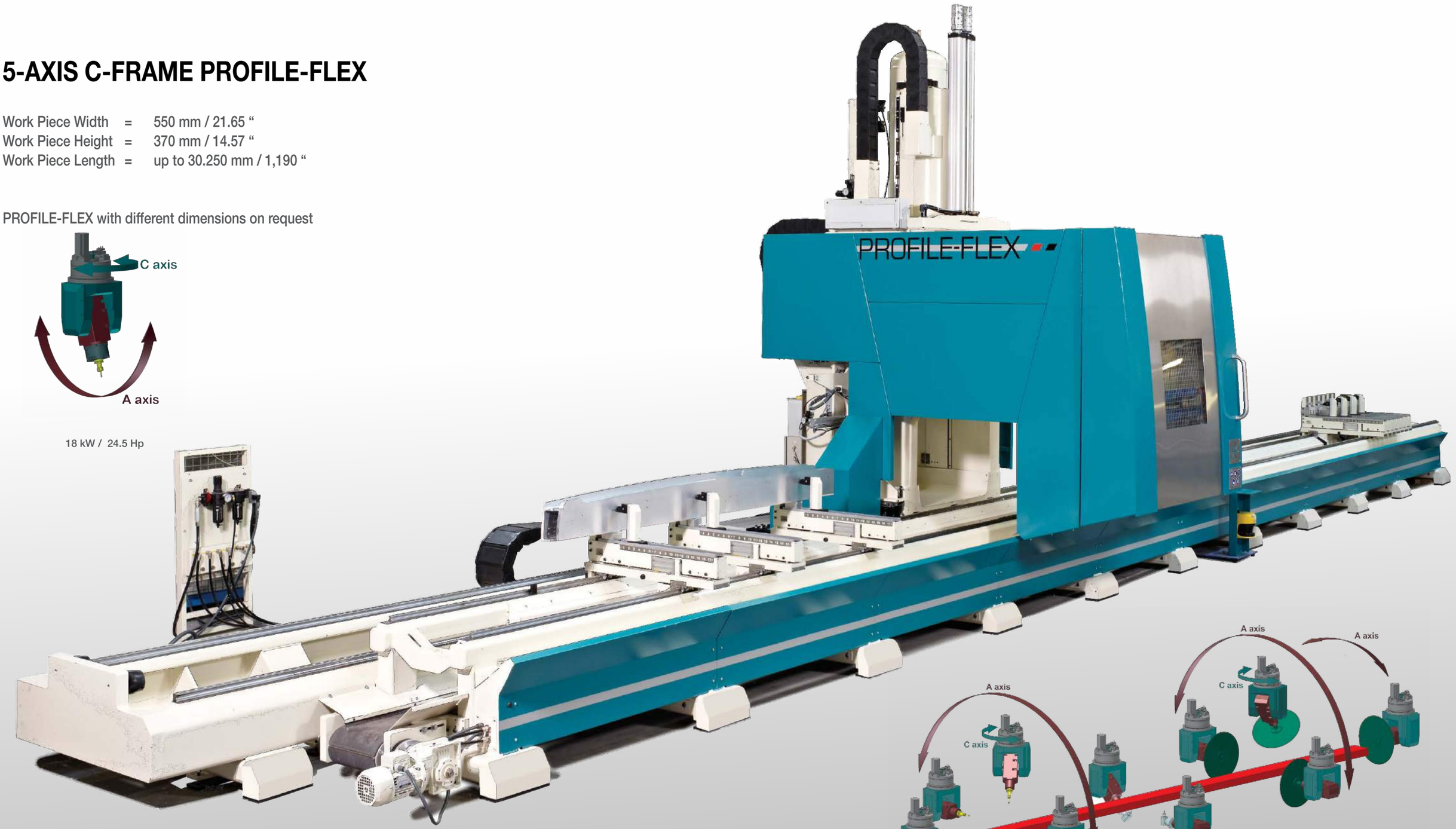
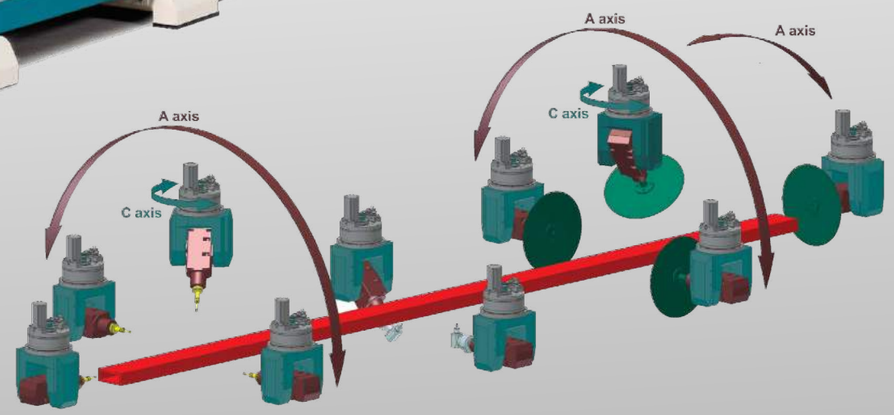
5-AXIS C-FRAME PROFILE-FLEX

Work Piece Width = 550 mm / 21.65 “
Work Piece Height = 370 mm / 14.57 “
Work Piece Length = up to 30.250 mm / 1,190 “

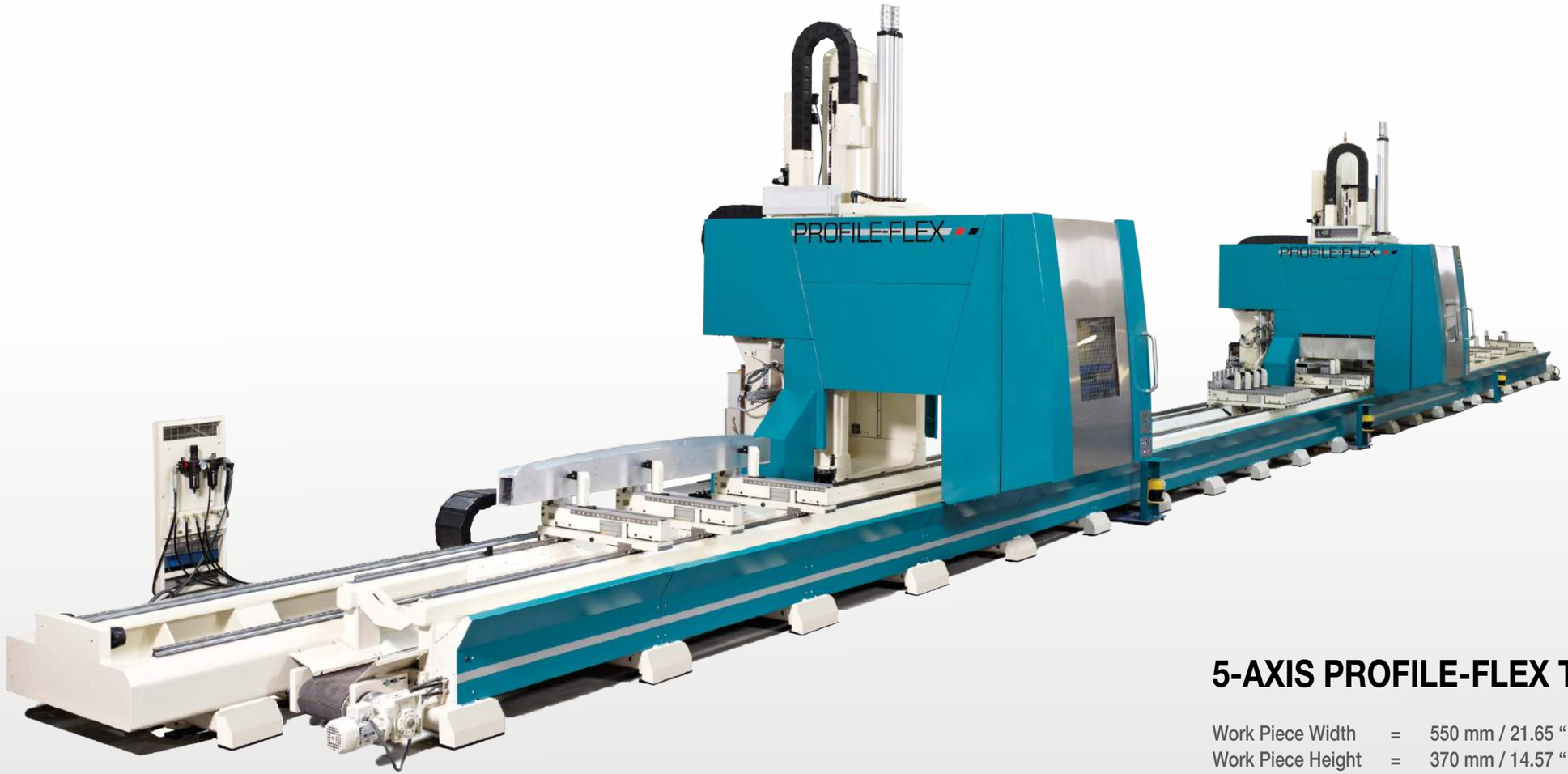
PROFILE-FLEX with different dimensions on request

18 kW / 24.5 Hp





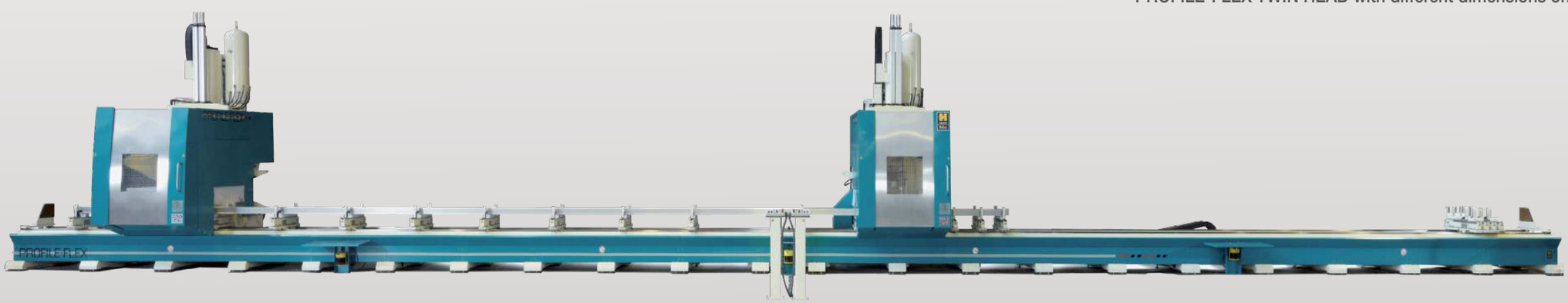
CNC rotation of the spindle motor A-axis / C-axis

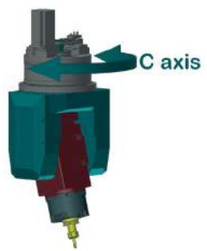


5-AXIS PROFILE-FLEX TWIN HEAD

Work Piece Width	=	550 mm / 21.65 “
Work Piece Height	=	370 mm / 14.57 “
Work Piece Length	=	up to 30.250 mm / 1,190 “

PROFILE-FLEX TWIN HEAD with different dimensions on request





- Spindle 18 KW / 24.5 Hp- HSK-F63 - 24.000 RPM
- A-Axis -120° up to +120°
- C-Axis -215° up to +215°
- Max. tool diameter = 520 mm / 20.47 “
- Max. tool length = 200 mm / 7.87 “

- 36 Position CNC linear tool magazine
- Capacity for 4 x 520 mm / 4 x 20.47 “
- Standard foreseen for angular tools
- Automatic door for protection
- Tool magazine travelling with column

- Sample of special clamping blocks made on Mubea Center and generated by Mubea 3D software

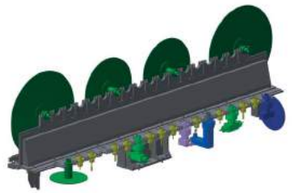
- Workpiece loaded at custom made support blocks

	PROFILE-FLEX STANDARD SPECIFICATIONS	METRIC	IMPERIAL
Machine specifications	PF 6250 - X-axis processing length	6,250mm	246.1 “
	PF 9250 - X-axis processing length	9,250mm	364.2 “
	PF 12250 - X-axis processing length	12,250mm	482.3 “
	PF 30250 - X-axis processing length	30.250mm	1,190.9 “
	PF TH 30250 - X-axis processing length	30.250mm	1,190.9 “
	Maximum processing profile section	550mm x 370mm	21.65 “ x 14.57 “
	Max. speed X-axis	80m / min	52.5 “/s
	Max. speed Y-axis	60m / min	39.4 “/s
	Max. speed Z-axis	60m / min	39.4 “/s
Spindle 18 KW	Max. speed A-axis	50° / s	50° / s
	Max. speed C-axis	50° / s	50° / s
	CNC tilting of the milling motor - A-axis	-120° up to +120°	-120° up to +120°
	CNC turing of the fork with spindle motor - C-axis	-215° up to +215°	-215° up to +215°
	Spindle motor power S1 (100% load) / S6 (60% load) - HSK F63	15 kW / 18 kW	20.4 Hp / 24.5 Hp
	Spindle forseen with encoder for sawing and rigid (synchronise) tapping	Standard	Standard
	Maximum rotation speed	24.000 RPM	24,000 RPM
	Adjustable spindle speed by program / manual by operating panel	Standard	Standard
	Micro drop cooling spindle motor	Standard	Standard
	CNC linear tool magazine 36 HSK F63 foreseen to adapt angular aggregates	36xØ100 ~ Ø520	36xØ3.94”~ 20.47”
NC	Siemens 840 D controller with windows XP - 15” TFT	Standard	Standard
	Network, modem, teleservice and USB connections	Standard	Standard
	Siemens querty panel and operating panel	Standard	Standard
	Siemens service contract	1 year	1 year

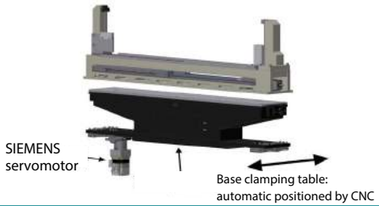
PROFILE-FLEX OPTIONS
Clamps moved by X-axis of the machine - the width is manual adjustable
Clamps moved by X-axis of the machine - the width is adjustable with handle with mechanical counter
Pull / Push bar systems to move clamps with work piece(s) in the X-direction plus or minus
Clamps simultaneous moved by servo motor on each clamp - the width is manual adjustable
Clamps simultaneous moved by servo motor on each clamp - the width is adjustable with handle with mechanical counter
Double clamps or special clamps available on request
Zero point left
Zero point right
Laser zero point
2 working zones for pendular working with the machine with scanners, no mechnical barriers for loading long pieces
Chip conveyor inside machine
Aggregate tools for cutting at the under side and cutting between 2 profiles
Pyramid 3D Cad-Cam software - Including 3D simulations and time calculation
Pyramid 3D Option: Measure Softwarel: Integrated measuring software for automatic compensation of the NC program
Pyramid 3D Option: 3D chamfers and ruled surfaces
Pyramid 3D Option: Curved profiles
Pyramid 3D Option: Nesting & Cleat Cut
Probe to measure profile before cutting with automatic compensation of the program
Compensation of the length depending the temperature of the machine and temperature of the profile
Siemens Sinumerik service contract up to maximum 5 years

Spindle 18 KW/24.5 Hp- HSK-F63 - 24.000 RPM
A-Axis -120° up to +120°
C-Axis -215°up to +215°
Max. tool diameter = 520 mm / 20.47”
Max. tool length = 200 mm / 7.87 “

Spindle 25 KW / 34.0 Hp - HSK-A63 - 22.000 RPM
Spindle 39.5 KW / 53.7 Hp - HSK-A63 - 24.000 RPM
A-Axis -110° up to +110°
C-Axis -225° up to +225°
Max. tool diameter = 700 mm / 27.56”
Max. tool length = 220 mm / 8.66 “

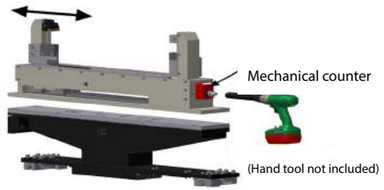


36 Position CNC linear tool magazine
Standard foreseen for angular tools
Capacity for 4 x 520 mm or 2 x 700 mm
Capacity for 4 x 20.47 “ or 2 x 27.56 “
Automatic door for protection
Tool magazine travelling with column



Replacable Clamps along the X-axis
- Positioned by gantry
- Positioned by pull bar
- Positioned by servo motor

Maximum 32 clamps possible



Replacable Clamps along the Y-axis
- Positioned manual
- Positioned by handle with mechanical counter

Maximum clamping capacity: 1.300 mm / 51.18 “
Optional double clamps possible

5-AXIS GANTRY MULTI-FLEX

Work Piece Width	=	1.300 mm / 51.18 “
Work Piece Height	=	650 mm / 25.59 “
Work Piece Length	=	up to 30.250 mm / 1,190.9 “

MULTI-FLEX with different dimensions on request

Custom made support blocks for bended profiles

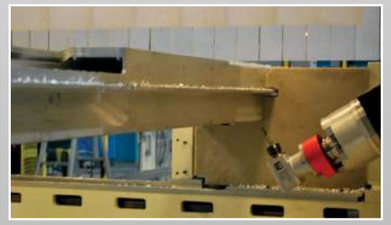
Bended workpiece loaded at custom made support blocks

Cutting of an aluminium profile construction

5-AXIS MULTI-FLEX TWIN HEAD

Work Piece Width	=	1.300 mm / 51.18 “
Work Piece Height	=	650 mm / 25.59 “
Work Piece Length	=	up to 30.250 mm / 1,190.9 “

MULTI-FLEX TWIN HEAD with different dimensions on request



Cutting wiht angular tool

Cutting of an aluminium profile construction

Heavy and long cutting tool in spindle

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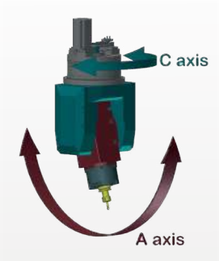
5-AXIS GANTRY MULTI-FLEX

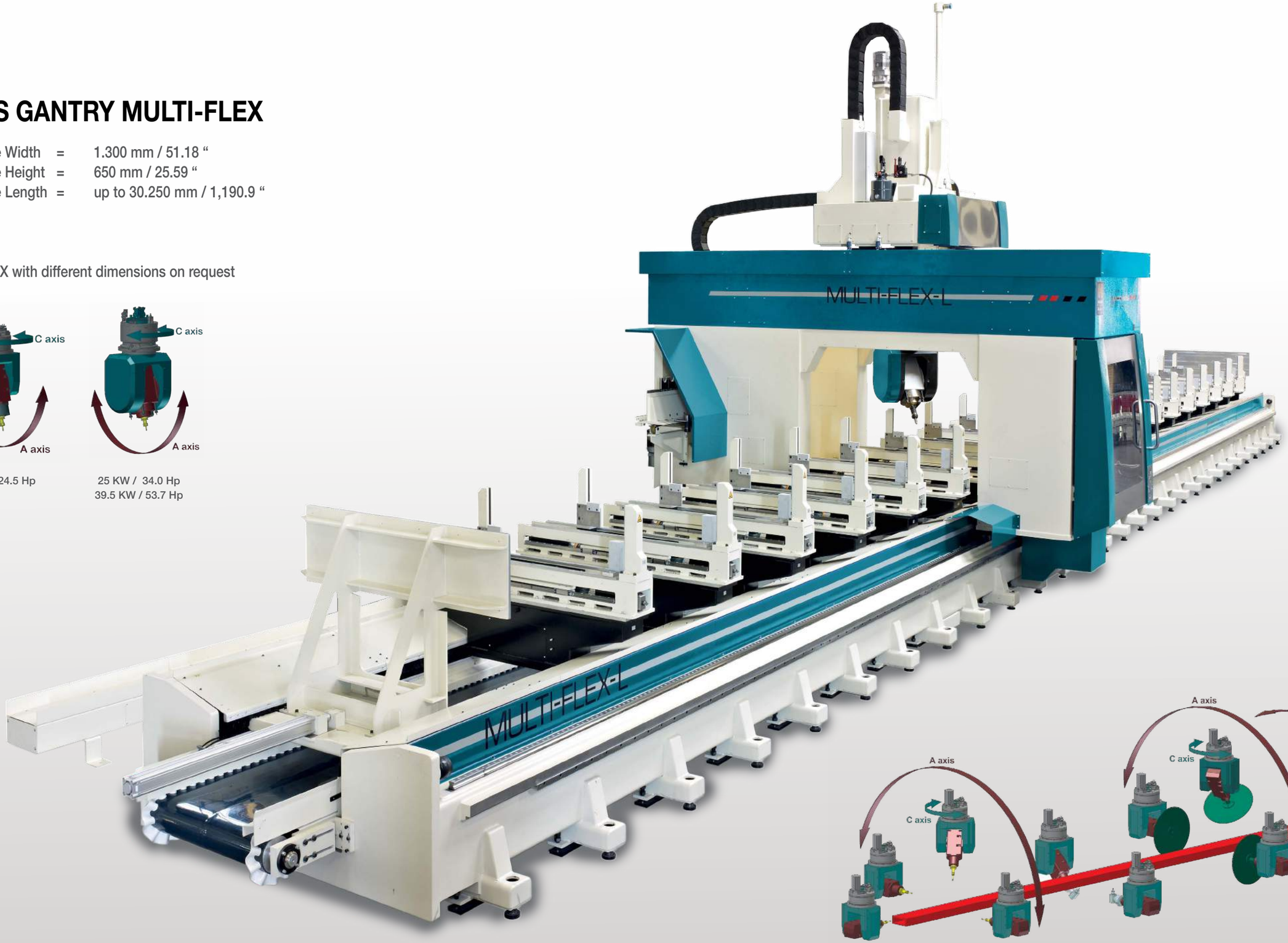
Work Piece Width = 1.300 mm / 51.18 “
Work Piece Height = 650 mm / 25.59 “
Work Piece Length = up to 30.250 mm / 1,190.9 “

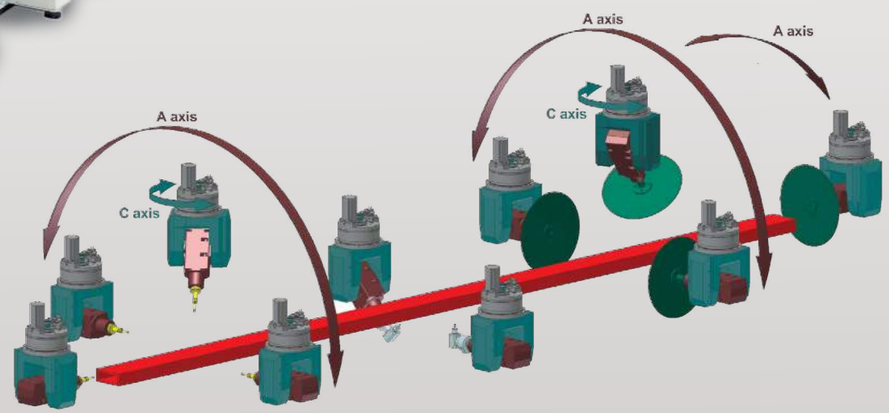
MULTI-FLEX with different dimensions on request



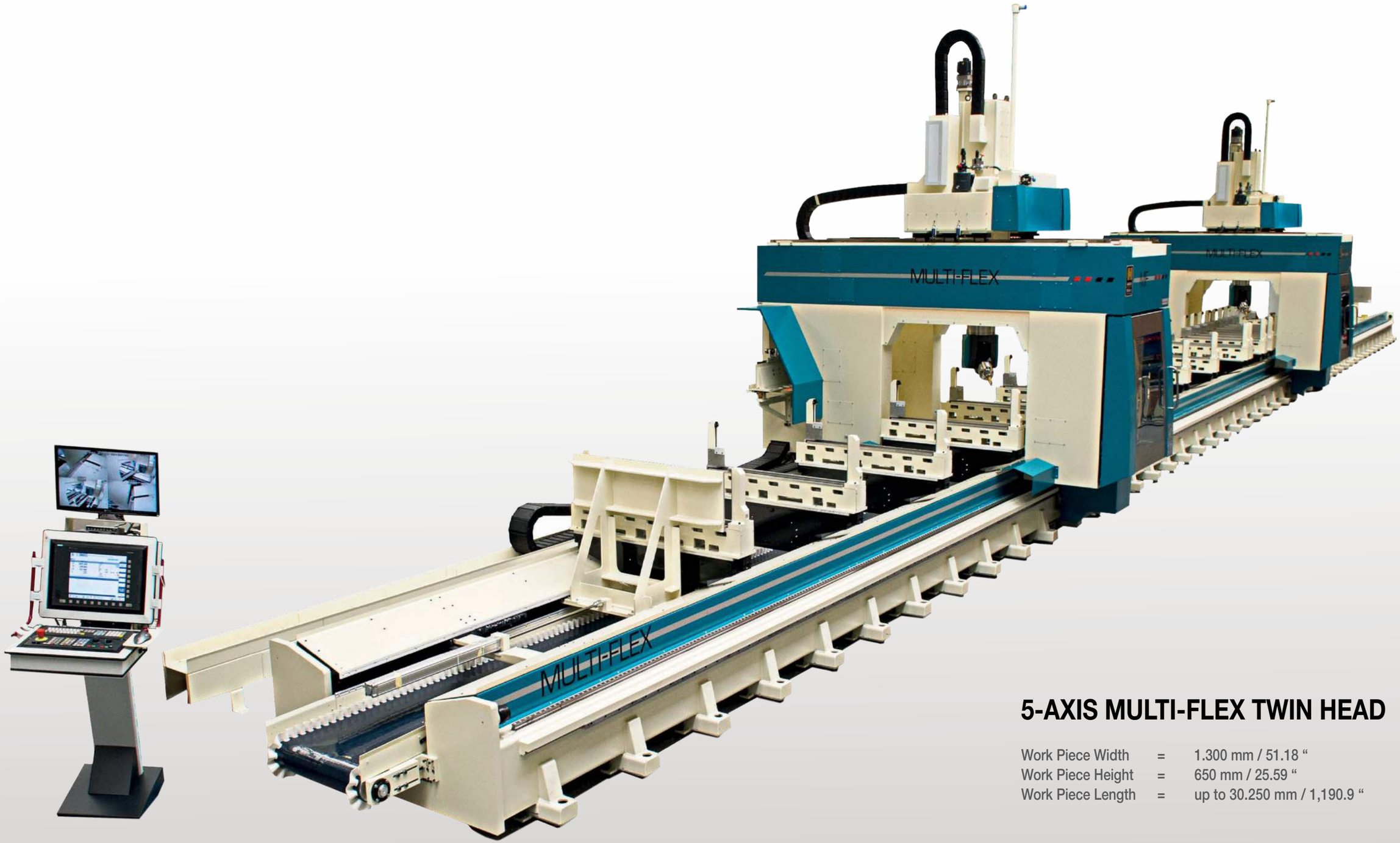
18 kW / 24.5 Hp

25 KW / 34.0 Hp
39.5 KW / 53.7 Hp





CNC rotation of the spindle motor A-axis / C-axis



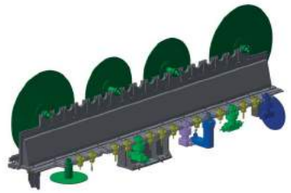
5-AXIS MULTI-FLEX TWIN HEAD

Work Piece Width	=	1.300 mm / 51.18 “
Work Piece Height	=	650 mm / 25.59 “
Work Piece Length	=	up to 30.250 mm / 1,190.9 “

MULTI-FLEX TWIN HEAD with different dimensions on request

Spindle 18 KW / 24.5 Hp - HSK-F63 - 24.000 RPM
A-Axis -120° up to +120°
C-Axis -215° up to +215°
Max. tool diameter = 520 mm / 20.47”
Max. tool length = 200 mm / 7.87”

Spindle 25 kW / 34.0 Hp - HSK-A63 - 22.000 RPM
Spindle 39.5 kW / 53.7 Hp - HSK-A63 - 24.000 RPM
A-Axis -110° up to +110°
C-Axis -225° up to +225°
Max. tool diameter = 700 mm / 27.56”
Max. tool length = 220 mm / 8.66 “



36 Position CNC linear tool magazine
Standard foreseen for angular tools
Capacity for 4 x 520 mm or 2 x 700 mm
Capacity for 4 x 20.47 “ or 2 x 27.56 “
Automatic door for protection
Tool magazine travelling with column

Replacable Clamps along the X-axis
- Positioned by gantry
- Positioned by pull bar
- Positioned by servo motor

Maximum 32 clamps possible

Replacable Clamps along the Y-axis
- Positioned manual
- Positioned by handle with mechanical counter

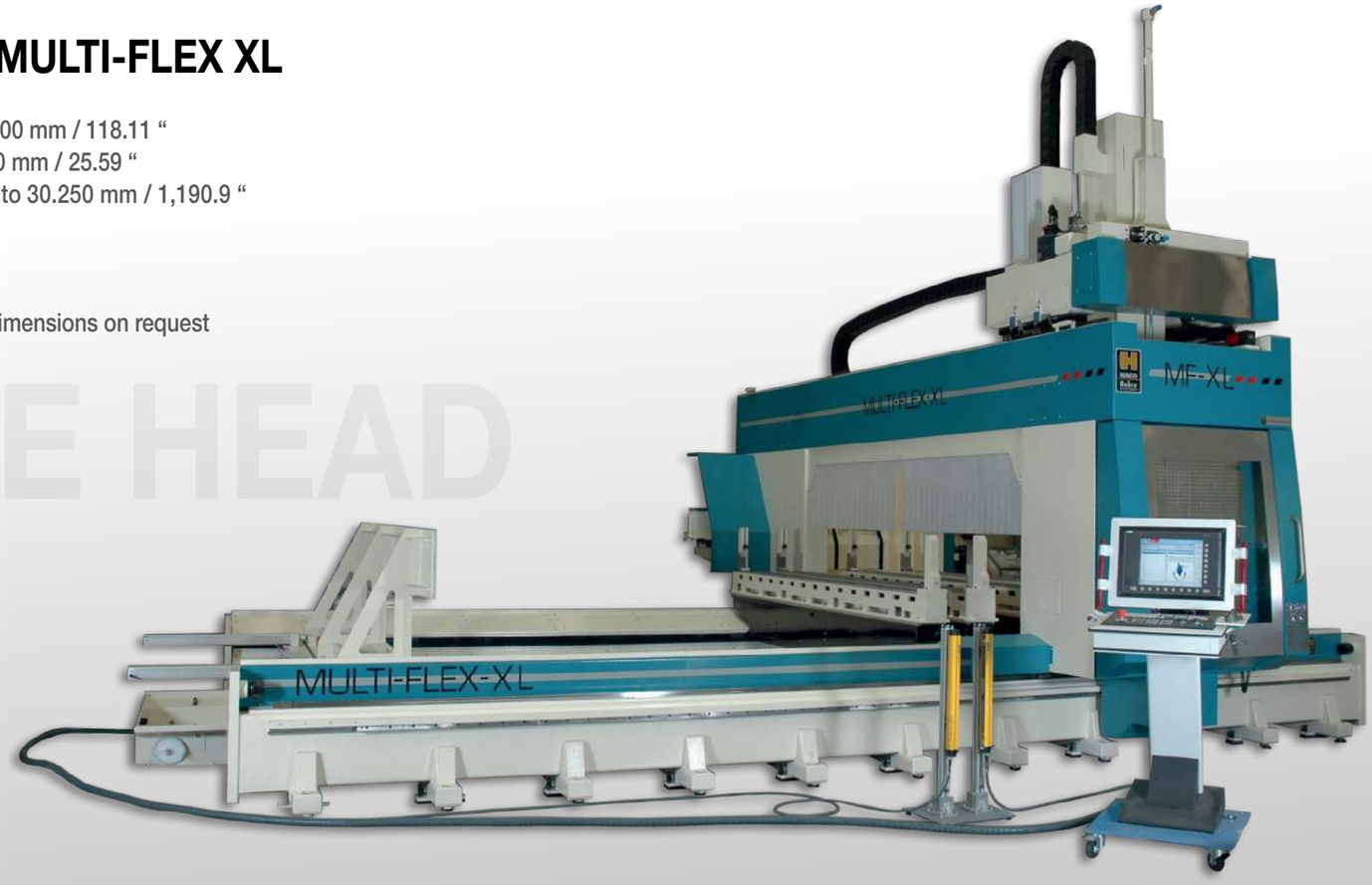
Maximum clamping capacity: 550 mm / 21.65 “
Optional double clamps possible

5-AXIS GANTRY MULTI-FLEX XL

Work Piece Width	=	3.000 mm / 118.11 “
Work Piece Height	=	650 mm / 25.59 “
Work Piece Length	=	up to 30.250 mm / 1,190.9 “

MULTI-FLEX XL with different dimensions on request
Twinhead also available.

SINGLE HEAD




Rail with chip containers


Heavy work piece loaded at clamps


Heavy clamps


Heavy tool in spindle 18 KW


Rail with chip containers


Heavy left zero-point

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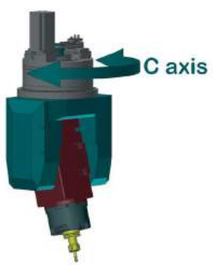

18 kW / 24.5 Hp

25 kW / 34.0 Hp
39.5 kW / 53.7 Hp

- 18 KW / 24.5 Hp - HSK-F63 - 24.000 RPM
  - A-Axis -120° up to +120°
  - C-Axis -215° up to +215°
- Spindle 25 KW / 34.0 Hp HSK-A63 - 22.000 RPM
  - A-Axis -110° up to +110°
  - C-Axis -225° up to +225°

- 36 Position CNC linear tool magazine
- Standard foreseen for angular tools
- Capacity for 4 x 520 mm or 2 x 700 mm/ 4 x 20.47 " or 2 x 27.56 "
- Automatic door for protection
- Tool magazine travelling with column

- Clamps can be removed easily in order that other complex applications can be easily executed.

- Aluminium construction of profiles loaded on the clamps

	MULTI-FLEX STANDARD SPECIFICATIONS	METRIC	IMPERIAL
Machine specifications	MF 6250 - X-axis processing length	6,250mm	246.1 "
	MF 9250 - X-axis processing length	9,250mm	364.2 "
	MF 12250 - X-axis processing length	12,250mm	482.3 "
	MF 30250 - X-axis processing length	30.250mm	1,190.9 "
	MF TH 30250 - X-axis processing length	30.250mm	1,190.9 "
	Maximum processing profile section	1.300mm x 650mm	51.18 " x 25.59 "
	Max. speed X-axis	60m / min	39.4 "/s
	Max. speed Y-axis	60m / min	39.4 "/s
	Max. speed Z-axis	60m / min	39.4 "/s
Spindle 18 KW	Max. speed A-axis	50° / s	50° / s
	Max. speed C-axis	50° / s	50° / s
	CNC tilting of the milling motor - A-axis	-120° up to +120°	-120° up to +120°
	CNC turing of the fork with spindle motor - C-axis	-215° up to +215°	-215° up to +215°
	Spindle motor power S1 (100% load) / S6 (60% load) - HSK F63	15 kW / 18 kW	20.4 Hp / 24.5 Hp
	Spindle forseen with encoder for sawing and rigid (synchronise) tapping	Standard	Standard
	25 kW Maximum rotation speed	22.000 RPM	22.000 RPM
	Adjustable spindle speed by program / manual by operating panel	Standard	Standard
	Micro drop cooling spindle motor	Standard	Standard
	CNC linear tool magazine 36 HSK F63 foreseen to adapt angular aggregates	36x Ø130mm~ Ø520	36x Ø5.12 "~ Ø 20.47"
Spindle 25 KW	Max. speed A-axis	300° / s	300° / s
	Max. speed C-axis	300° / s	300° / s
	CNC tilting of the milling motor - A-axis	-110° up to +110°	-110° up to +110°
	CNC turing of the fork with spindle motor - C-axis	-225° up to +225°	-225° up to +225°
	25 kW spindle motor power S1 (100 % load) / S6 (60 % load) - HSK A63	20 kW / 25 kW	27.2 Hp / 34.0 Hp
	Spindle foreseen with encoder for sawing and rigid (synchronise) tapping	Standard	Standard
	Maximum rotation speed	22.000 RPM	22,000 RPM
	Adjustable spindle speed by program / manual by operating panel	Standard	Standard
	Micro drop cooling spindle motor	Standard	Standard
	CNC linear tool magazine 36 HSK A63 foreseen to adapt angular aggregates	36xØ130~ Ø700	36xØ5.12"~27.56"
NC	Siemens 840 D controller with windows XP - 15" TFT	Standard	Standard
	Network, modem, teleservice and USB connections	Standard	Standard
	Siemens querty panel and operating panel	Standard	Standard
	Siemens service contract	2 years	2 years

MULTI-FLEX OPTIONS
Clamps moved by X-axis of the machine - the width is manual adjustable
Clamps moved by X-axis of the machine - the width is adjustable with handle with mechanical counter
Pull / Push bar systems to move clamps with work piece(s) in the X-direction plus or minus
Clamps simultaneous moved by servo motor on each clamp - the width is manual adjustable
Clamps simultaneous moved by servo motor on each clamp - the width is adjustable with handle with mechanical counter
Double clamps or special clamps available on request
Zero point left
Zero point right
Laser zero point
2 working zones for pendular working with the machine with scanners, no mechnical barriers for loading long pieces
Chip conveyor inside machine
Aggregate tools for cutting at the under side and cutting between 2 profiles
Pyramid 3D Cad-Cam software - Including 3D simulations and time calculation
Pyramid 3D Option: Measure Softwarel: Integrated measuring software for automatic compensation of the NC program
Pyramid 3D Option: 3D chamfers and ruled surfaces
Pyramid 3D Option: Curved profiles
Pyramid 3D Option: Nesting & Cleat Cut
Probe to measure profile before cutting with automatic compensation of the program
Compensation of the length depending the temperature of the machine and temperature of the profile
Siemens Sinumerik service contract up to maximum 5 years

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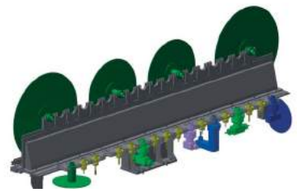
Spindle 25 KW / 34.0 Hp - HSK-A63 - 22.000 RPM
Spindle 39.5 kW / 53.7 Hp - HSK-A63 - 24.000 RPM
A-Axis -110° up to +110°
C-Axis -215° up to +215°

Max. tool diameter = 700 mm / 27.56 “
Max. tool length = 220 mm / 8.66 “

Spindle 44 KW / 59.8 Hp - HSK-A63 - 24.000 RPM

A-Axis -110° up to +110°
C-Axis -225° up to +225°

Max. tool diameter = 700 mm / 27.56 “
Max. tool length = 220 mm / 8.66 “



36 Position CNC linear tool magazine
Standard foreseen for angular tools
Capacity for 4 x 520 mm or 2 x 700 mm
Capacity for 4 x 20.47 “ or 2 x 27.56 “

Automatic door for protection
Tool magazine travelling with column

Replacable Clamps along the X-axis
Positioned by gantry

Maximum 32 clamps possible

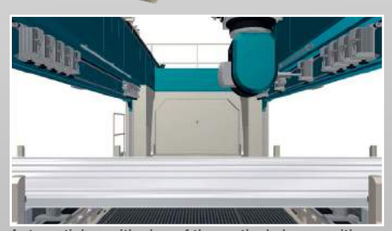
Replacable Clamps along the Y-axis
Positioned manual

Maximum clamping capacity 3.500 mm / 137.79 ”
Optional double clamps possible

5-AXIS GANTRY MEGA-FLEX WITH SECOND X-AXIS

Work Piece Width	=	3.500 mm / 137.79 “
Work Piece Height	=	1.000 mm or 1.500 mm / 39.37 “ or 590.55 “
Work Piece Length	=	up to 60.250 mm / 2,372.0 “
Second X-Axis	=	1.000 mm / 39.37 “

Left and right vertical claming bridges with each 10 clamping cylinders

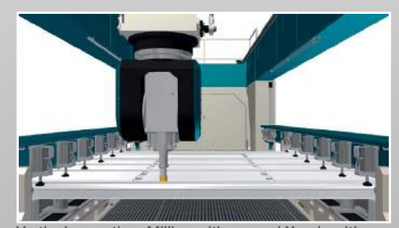


Automatich positioning of the vertical clamps with the spindle

Vertical operation: Measuring with second X-axis with vertical clamps used

5-AXIS MEGA-FLEX TWIN HEAD WITH SECOND X-AXIS

Work Piece Width	=	3.500 mm / 137.79 “
Work Piece Height	=	1.000 mm or 1.500 mm / 39.37 “ or 590.55 “
Work Piece Length	=	up to 60.250 mm / 2,372.0 “
Second X-Axis	=	1000 mm / 39.37 “



Vertical operation: Milling with second X-axis with vertical clamps used

End operation: Measuring with second X-axis with only right vertical clamps used

End operation: Milling with second X-axis with only right vertical clamps used

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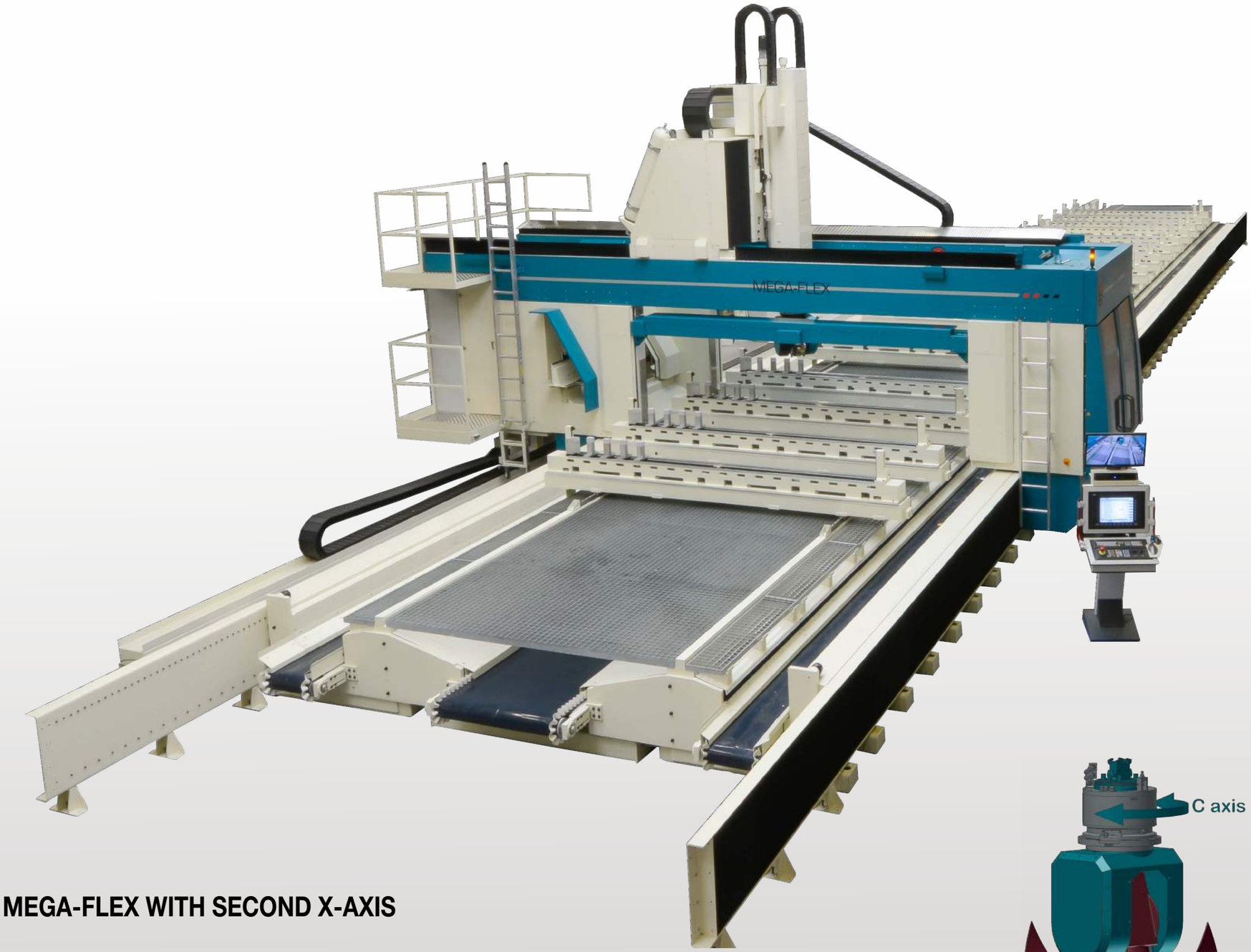
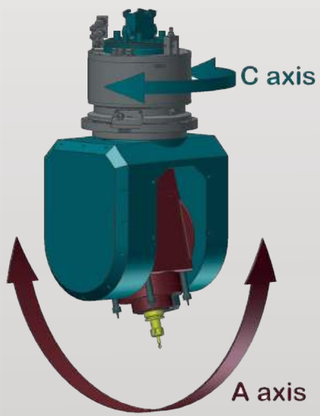
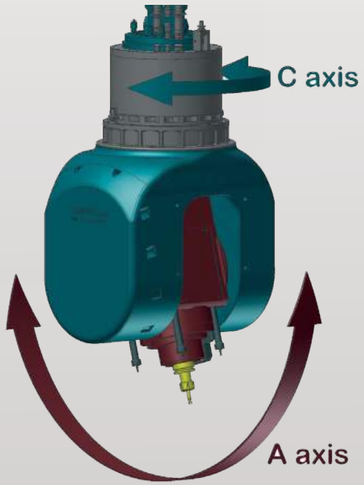


5-AXIS GANTRY MEGA-FLEX WITH SECOND X-AXIS

Work Piece Width	=	3.500 mm / 137.79 “
Work Piece Height	=	1.000 mm or 1.500 mm / 39.37 “ or 590.55 “
Work Piece Length	=	up to 60.250 mm / 2,372.0 “
Second X	=	1000 mm / 39.37 “



25 KW/ 34.0 Hp
39.5 KW / 53.7 Hp



44 KW/59.8 Hp

5-AXIS MEGA-FLEX TWIN HEAD WITH SECOND X-AXIS

Work Piece Width	=	3.500 mm / 137.79 “
Work Piece Height	=	1.000 mm or 1.500 mm / 39.37 “ or 590.55 “
Work Piece Length	=	up to 60.250 mm / 2,372.0 “
Second X	=	1000 mm / 39.37 “

25 kW/ 34.0 Hp
39.5 KW / 53.7 Hp

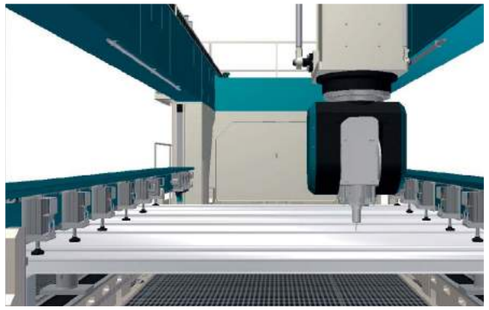
44 KW/59.8 Hp

- Spindle 25 KW/ 34.0 Hp - HSK-A63 - 22.000 RPM
  - A-Axis -110° up to +110°
  - C-Axis -225° up to +225°
- Spindle 44 KW/ 59.8 Hp - HSK-A63 - 24.000 RPM
  - A-Axis -110° up to +110°
  - C-Axis -225° up to +225°

- 36 Position CNC linear tool magazine
- Standard foreseen for angular tools
- Capacity for 4 x 520 mm or 2 x 700 mm
- Capacity for 4 x 20.47 " or 2 x 27.56 "
- Automatic door for protection
- Tool magazine travelling with column

- Four cameras inside of the column and screen on the operator panel give a good overview of operation to the operator.

- Double X-axis generates higher dynamics and improved machining capacity.
- Extra double vertical clamping device on column, improved machining speed and finishing. Software.



	MEGA-FLEX STANDARD SPECIFICATIONS	METRIC	IMPERIAL
Machine specifications	MeF 10250 - X-axis processing length	10,250mm	403.5 "
	MeF 30250 - X-axis processing length	30,250mm	1,190.9 "
	MeF TH 30250 - X-axis processing length	30,250mm	1,190.9 "
	MeF TH 60250- X-axis processing length	60,250mm	2,372.0 "
	Maximum processing profile section	2.800/3.500mm x 1.000/1.500mm	110.24 "/137.80 " x 39.37"/590.55"
	Max. speed X-axis	50m / min	32.8 "/s
	Max. speed X2-axis	60m / min	39.4 "/s
	Max. speed Y-axis	60m / min	39.4 "/s
	Max. speed Z-axis	60m / min	39.4 "/s
Spindle 25 kW	Max. speed A-axis	300° / s	300 ° / s
	Max. speed C-axis	300° / s	300 ° / s
	CNC tilting of the milling motor - A-axis	-110° up to +110°	-110° up to +110°
	CNC turing of the fork with spindle motor - C-axis	-225° up to +225°	-225° up to +225°
	Spindle motor power S1 (100% load) / S6 (60% load) - HSK A63	20 kW / 25 kW	27.2 Hp / 34.0 Hp
	Spindle forseen with encoder for sawing and rigid (synchronise) tapping	Standard	Standard
	Maximum rotation speed	22.000 RPM	22,000 RPM
	Adjustable spindle speed by program / manual by operating panel	Standard	Standard
	Micro drop cooling spindle motor	Standard	Standard
	CNC linear tool magazine 36 HSK A63 foreseen to adapt angular aggregates	36xØ130~ Ø700mm	36xØ5.12"~27,56"
Spindle 44 KW	Max. speed A-axis	360° / s	360° / s
	Max. speed C-axis	360° / s	360° / s
	CNC tilting of the milling motor - A-axis	-110° up to +110°	-110° up to +110°
	CNC turing of the fork with spindle motor - C-axis	-225° up to +225°	-225° up to +225°
	Spindle motor power S1 (100% load) / S6 (60% load) - HSK A63	39 kW / 44 kW	53.0 Hp / 59.8 Hp
	Spindle forseen with encoder for sawing and rigid (synchronise) tapping	Standard	Standard
	Maximum rotation speed	24.000 RPM	24,000 RPM
	Adjustable spindle speed by program / manual by operating panel	Standard	Standard
	Micro drop cooling spindle motor	Standard	Standard
	CNC linear tool magazine 36 HSK A63 foreseen to adapt angular aggregates	36xØ130~Ø700	36xØ5.12"~27.56"
NC	Siemens 840 D controller with windows XP - 15" TFT	Standard	Standard
	Network, modem, teleservice and USB connections	Standard	Standard
	Siemens querty panel and operating panel	Standard	Standard
	Siemens service contract	1 year	1 year

MEGA-FLEX OPTIONS
Clamps moved by X-axis of the machine - the width is manual adjustable
Double clamps or special clamps available on request
Zero point left
Zero point right
Laser zero point
2 working zones for pendular working with the machine with scanners, no mechnical barriers for loading long pieces
Chip conveyor inside machine
Aggregate tools for cutting at the under side and cutting between 2 profiles
Pyramid 3D Cad-Cam software - Including 3D simulations and time calculation
Pyramid 3D Option: Measure Softwarel: Integrated measuring software for automatic compensation of the NC program
Pyramid 3D Option: 3D chamfers and ruled surfaces
Pyramid 3D Option: Curved profiles
Pyramid 3D Option: Nesting & Cleat Cut
Probe to measure profile before cutting with automatic compensation of the program
Compensation of the length depending the temperature of the machine and temperature of the profile
Siemens Sinumerik service contract up to maximum 5 years
On request any length upto 30 meter and more / On request any length up to 100 feet and more

Changeable head attachments on Z-axis RAM / RAM of diameter 400 mm
C-axis continu in 1° increments / OPTION : C-axis continu servo controlled 0.001°
Spindle motor drive milling heads on round Z axis RAM up to 51 kW (S1) / 3.247 Nm (S1)

5-AXIS HIGH GANTRY MEGA-FLEX AB

Travel	X Axis	=	6.000 mm to 30.000 mm
	Y Axis	=	3.000 mm, 4.000 mm, 5.000 mm or 6.000 mm
	Z Axis	=	1.250 mm, 1.500 mm or 1.750 mm

Mega-flex AB equipped with Ram-Ram system
Ram-Ram: Ø 280 - Ø 400 - Ø 600 - Ø 800

Easy access in frame due to round ram of diameter 400 mm.

5 axis: CNC C-axis, indexeable A-axis, mechanical drived spindle ISO 50

Mega-flex AB equipped with turning-attachment up to 4 turning tools on the Ram-Ram system.

Mega-flex AB equipped with a fully 5-axis mechanically driven high torque miling head.

Mega-flex AB equipped with mechanical driven 5-axis milling head. Z-axis up to Ø 800 length 3m.

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Spindle 25 KW - 37 Nm - HSK-A63
Nominal 6.400 rpm / Max. 22.000 rpm

A-Axis -110° up to +110°
C-Axis -225° up to +225°
Max. tool diameter = 700 mm
Max. tool length = 220 mm

Spindle 44 KW - 36 Nm - HSK-A63
Nominal 11.700 rpm / Max. 24.000 rpm

A-Axis -110° up to +110°
C-Axis -225° up to +225°
Max. tool diameter = 700 mm
Max. tool length = 220 mm

Spindle 47,5 KW - 75,6 Nm - HSK-A63
Nominal 6.000 rpm / Max. 24.000 rpm

A-Axis -110° up to +110°
C-Axis -225° up to +225°
Max. tool diameter = 700 mm
Max. tool length = 220 mm

Spindle 73 KW - 349 Nm - HSK-A100
Nominal 2.000 rpm / Max. 15.000 rpm

A-Axis -110° up to +110°
C-Axis -225° up to +225°
Max. tool diameter = 700 mm
Max. tool length = 220 mm

Spindle 25 KW - 37 Nm - HSK-A63
Nominal 6.400 rpm / Max. 22.000 rpm

A-Axis -110° up to +110°
C-Axis -225° up to +225°
Max. tool diameter = 700 mm
Max. tool length = 220 mm

Spindle 44 KW - 36 Nm - HSK-A63
Nominal 11.700 rpm / Max. 24.000 rpm

A-Axis -110° up to +110°
C-Axis -225° up to +225°
Max. tool diameter = 700 mm
Max. tool length = 220 mm

Spindle 47,5 KW - 75,6 Nm - HSK-A63
Nominal 6.000 rpm / Max. 24.000 rpm

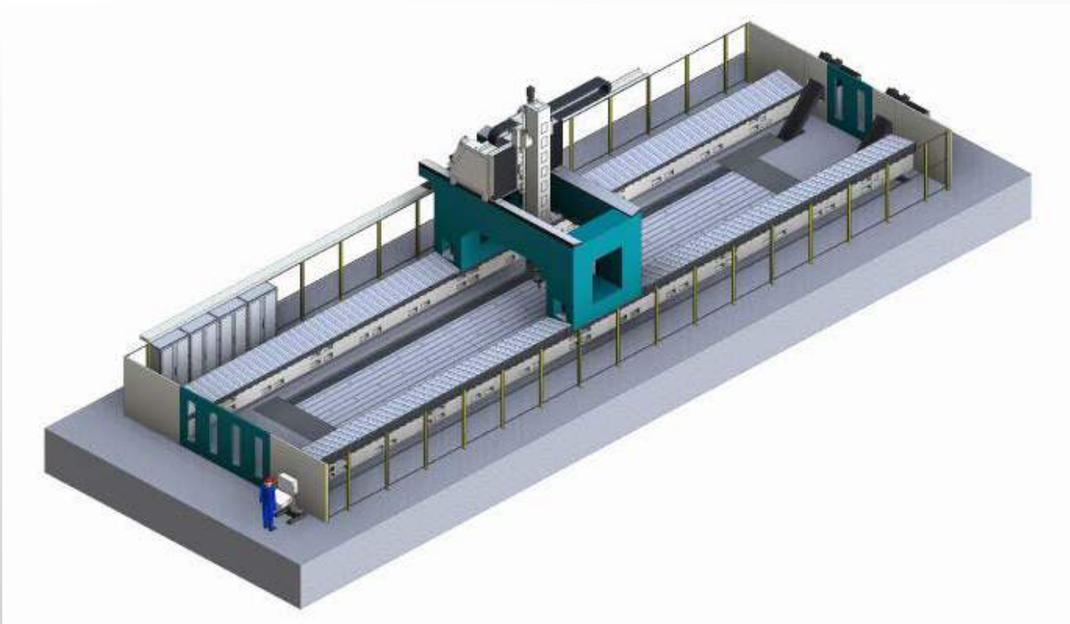
A-Axis -110° up to +110°
C-Axis -225° up to +225°
Max. tool diameter = 700 mm
Max. tool length = 220 mm

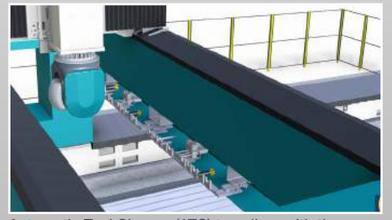
Spindle 73 KW - 349 Nm - HSK-A100
Nominal 2.000 rpm / Max. 15.000 rpm

A-Axis -110° up to +110°
C-Axis -225° up to +225°
Max. tool diameter = 700 mm
Max. tool length = 220 mm

5-AXIS FLOOR GANTRY MEGA-FLEX HS W/ SECOND X-AXIS

Travel	X Axis	=	6.000 mm to 30.000 mm
	Y Axis	=	3.000 mm, 4.000 mm, 5.000 mm or 6.000 mm
	Z Axis	=	1.000 mm, 1.500 mm or 2.000 mm





Automatic Tool Change (ATC) traveling with the column of the machine.

Second C-axis in middle position.

Machine side view with T-groove table.

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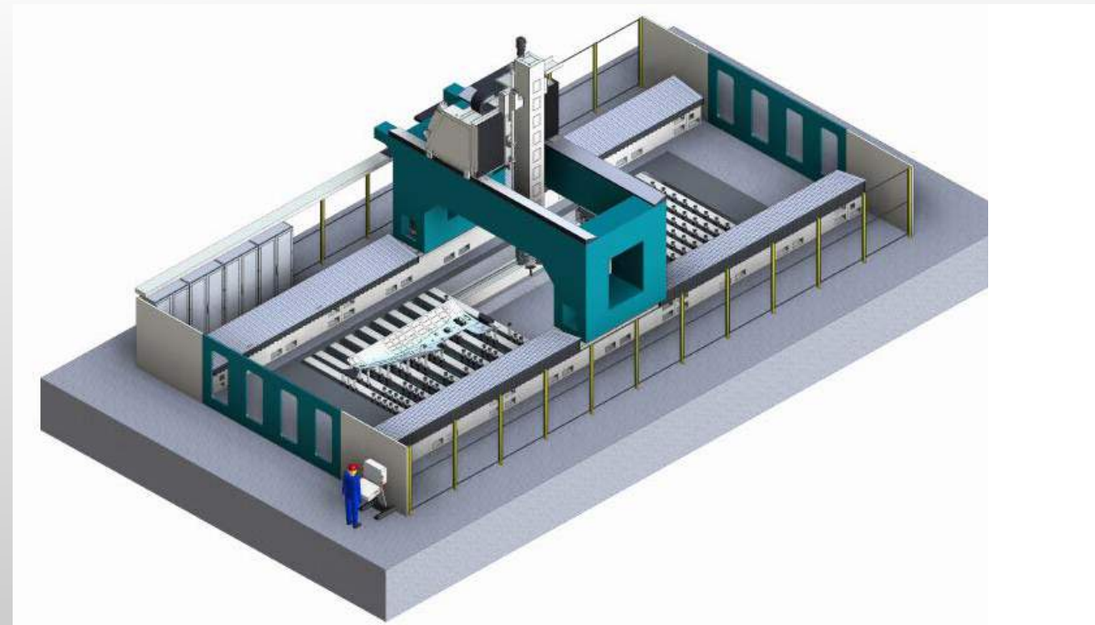
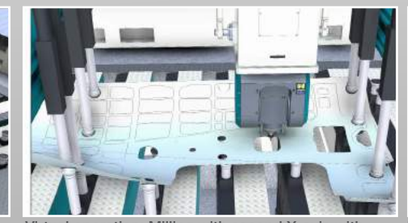
5-AXIS FLOOR GANTRY MEGA-FLEX HS W/ SECOND X-AXIS

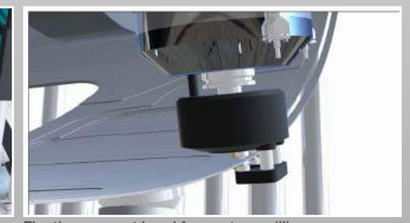
Travel	X Axis	=	6.000 mm to 30.000 mm
	Y Axis	=	3.000 mm, 4.000 mm, 5.000 mm or 6.000 mm
	Z Axis	=	1.000 mm, 1.500 mm, 2.000 mm



Universal Holding Fixtures with vacuum ups positioned CNC in X, Y, Z.



Virtual operation: Milling with second X-axis with vertical clamps used.



Floating support head for contour milling.

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Spindle 25 KW/ 34.0 Hp - 37 Nm - HSK-A63
Nominal 6.400 rpm / Max. 22.000 rpm

A-Axis -110° up to +110°
C-Axis -225° up to +225°
Max. tool diameter = 700 mm/27.56 “
Max. tool length = 220 mm/8.66 “

Spindle 44 KW/59.8 hP - 36 Nm - HSK-A63
Nominal 11.700 rpm / Max. 24.000 rpm

A-Axis -110° up to +110°
C-Axis -225° up to +225°
Max. tool diameter = 700 mm/27.56 “
Max. tool length = 220 mm/8.66 “

Spindle 47,5 KW/63.67 “ - 75,6 Nm - HSK-A63
Nominal 6.000 rpm / Max. 24.000 rpm

A-Axis -110° up to +110°
C-Axis -225° up to +225°
Max. tool diameter = 700 mm/27.56 “
Max. tool length = 220 mm/8.66 “

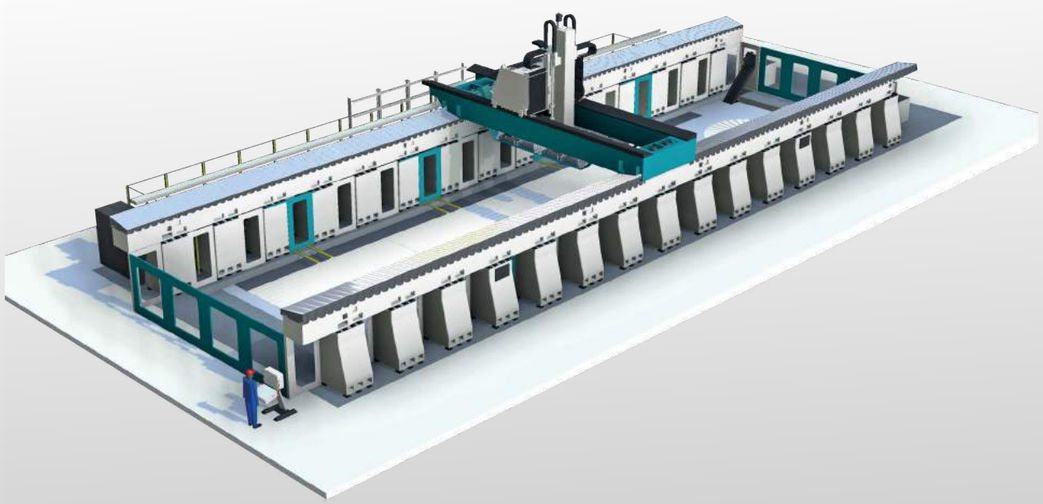
Spindle 73 KW/97.85 Hp- 349 Nm - HSK-A100
Nominal 2.000 rpm / Max. 15.000 rpm

A-Axis -110° up to +110°
C-Axis -225° up to +225°
Max. tool diameter = 700 mm/27.56 “
Max. tool length = 220 mm/8.66 “

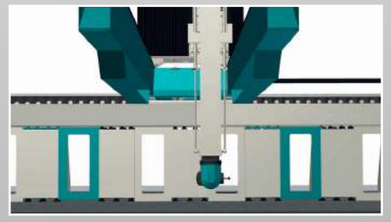
Changeable head attachments on Z-axis RAM / RAM of diameter 400 mm/ 15.75 “
C-axis continu in 1° increments / OPTION : C-axis continu servo controlled 0.001°
Spindle motor drive milling heads on round Z axis RAM up to 51 kW/68.36 Hp (S1) / 3.247 Nm (S1)

5-AXIS HIGH GANTRY GIGA-FLEX HS WITH SECOND X-AXIS

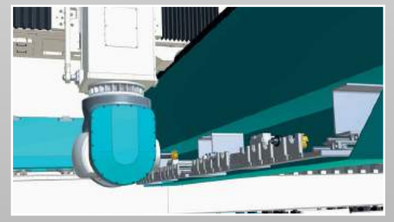
Travel	X Axis	=	6.000 mm to 30.000 mm / 236.22 “ to 1181.10 “
	Y Axis	=	3.000 mm, 4.000 mm, 5.000 mm or 6.000 mm / 118.11”, 157.48”, 196.85 “ or 236.22 ”
	Z Axis	=	1.000 mm, 1.500 mm or 2.000 mm / 39.37 ”, 59.05 ”, 78.74 “
Second X		=	1.000 mm / 39.37 “



Second X-axis in center position



Second X-axis in right position



Automatic tool Change (ATC) - travelling with the column of the machine

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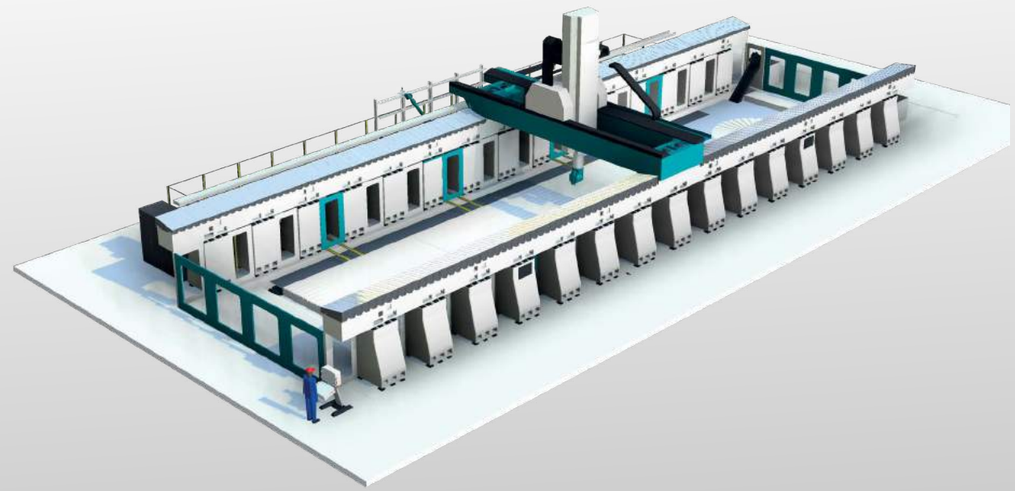
5-AXIS HIGH GANTRY GIGA-FLEX AB

Travel	X Axis	=	6.000 mm to 30.000 mm 6.000 mm to 30.000 mm / 236.22 “ to 1181.10 “
	Y Axis	=	3.000 mm, 4.000 mm, 5.000 mm or 6.000 mm / 118.11”, 157.48”, 196.85 “ or 236.22 ”
	Z Axis	=	1.250 mm, 1.500 mm or 1.750 mm / 49.21 “, 59.05 “ or 68.90 “



Robot tool changer (RTC) for addional, special or larger tools

Robot head changer (RHC) for switching the head including spindle

Easy access in frame due to round ram of diameter 400 mm.

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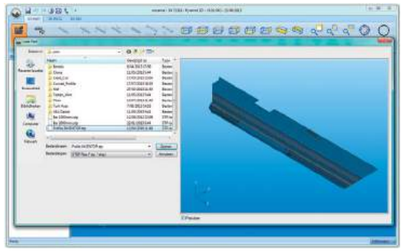
PYRAMID 3D Software

Complementing our range of impressive machining centers is the PYRAMID 3D CAD-CAM software which offers dynamic programming characteristics to meet demanding production requirements.

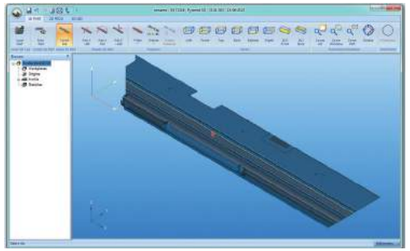
PYRAMID 3D is available in different languages like English, German, French, Chinese, Dutch, … Customer is free to modify labels by themselves.

After loading IGS or STP file we are able detect features. Easy programmming is our demand. After editing and sorting the features, calculation positon of the clamps, we can start the 3D-Simulation with integrated time calcualtion and 3D collision detection.

Load 3D Parts (IGS/STP)

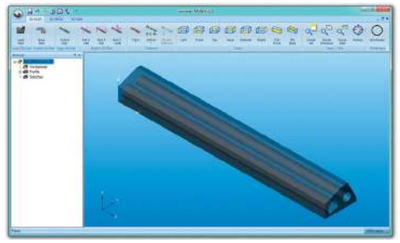


Load Part

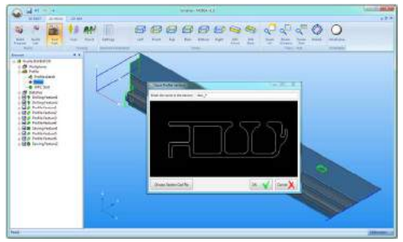


Align with X-axist

Profile Setup 2D & 3D

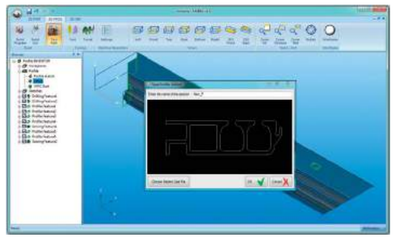


Create 3D Part - Section

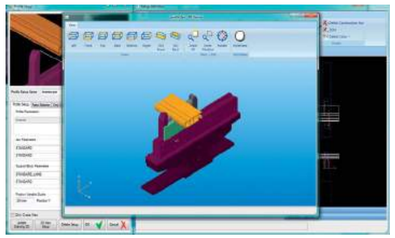


Show 3D Part

Profile Setup 2D & 3D



Profile Sketch



Profile Setup - 3D View

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PYRAMID 3D Software

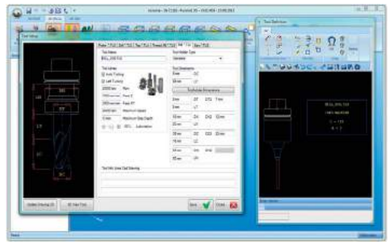
After feature detection we can edit the features depending cutting variables.
General variables are setup in the settings and turret & tool parameters.
Every feature can be individuele or in group opened to modify and saved specific parameters.

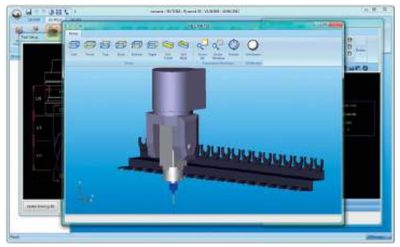
Settings & Tooling

Available Options

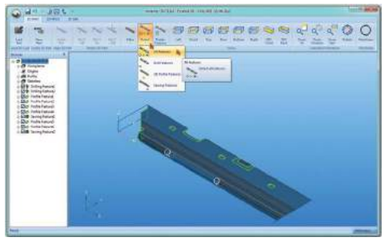
Translate System

Tooling & Turret

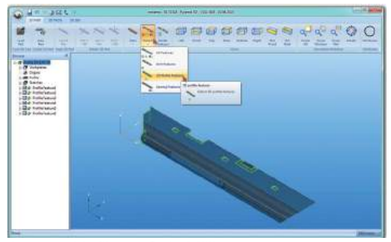




Features Detection

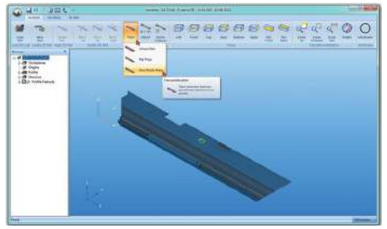


Auto - No Filter - Whole Part

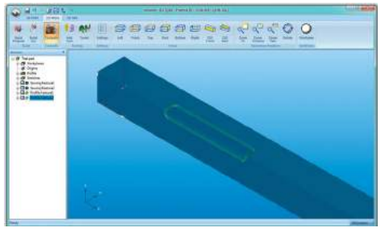


Auto - with filter - Only Milling

Features Detection



Automatic - Only Milling between 2 points



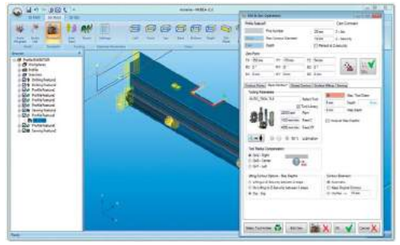
Manual Detection of Feature

For Impressive Performances

PYRAMID 3D-Software

After editing and sorting the features, calculation positon of the clamps, we can start the 3D -Simulation with integrated time calcualtion and 3D collision detection.
Move Clamps during cutting… with graphic control.

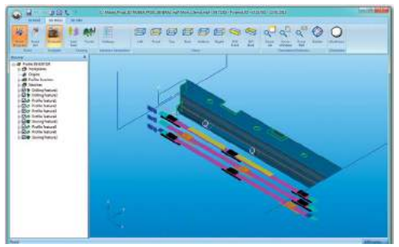
Editing Features and Safety Clamps


Profile Feature - Open Contour

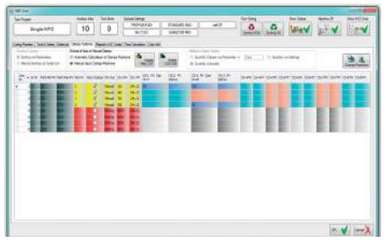

Profile Feature - Saw

Sorting Features and Special Functions


Order List Features

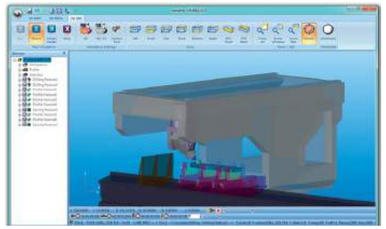

Order List Features - Measure Probe Info

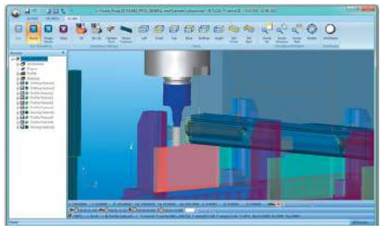
Sorting Features and Special Functions


Move Clamps


Time Calculation

3D Simulation with Collision Control and Time Calculation


3D Simuation


3D Simuation - Collision - Red Flashing of the collided parts

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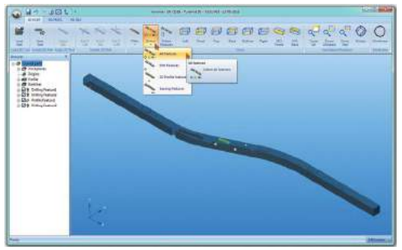
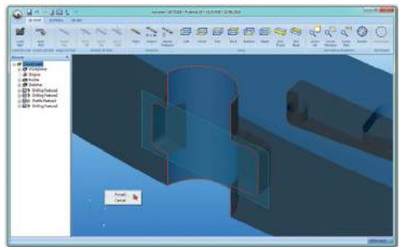
PYRAMID 3D-Software

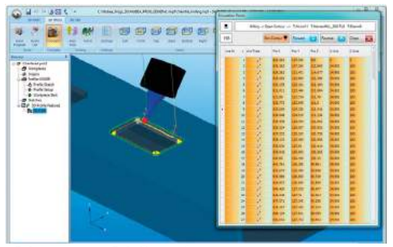
Optional Mubea offers additional functions for more advanced solutions.

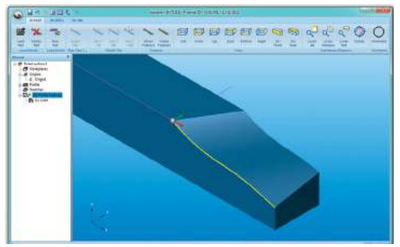
Optional - Curved Profiles


Detect Features over Rib

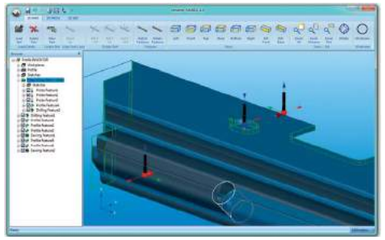

Manual Detection Feauteres

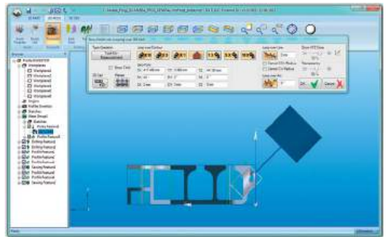
Optional - 3D Chamfers and Ruled Surfaces


3D Milling - 3D Chamfer

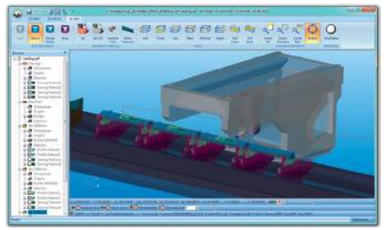

3D Milling - Ruled Surfaces

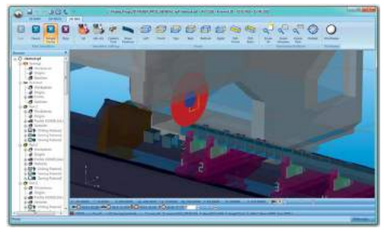
Optional - 3D Probe Measuring


3 Point Measurement


Find measure point with jumping around Profile Section

Optional - Nesting & Cleat Cut


Nesting - 3D Simulation


Cleat Cut - 3D Simulation

For Impressive Performances

Application For Machinery

ALUMINUM INDUSTRY

Automotive Industry | Refrigeration Trailers | Carwash Builders | Mobil home Builders
ALU Doors & Windows | High Rise Façade Builders | Greenhouse Builders
Aerospace Industry | Machine Construction | Aluminum Extrusions
Patio Builders | Lighting Industry | Expo Booth Builders | Racks & Shelving
Balcony Railing | Aluminum Castings |





METAL INDUSTRY

Automotive Industry | Balcony Railing Systems | Office Furniture | Car Wash Builders
Conveyor Systems | Kettle & Tank Builders | Machinery Construction
Stair Case Builders | Food Industry Equipment | Hospital Furniture
Shelves Construction | Copper Tubing

WOOD INDUSTRY

Wood Doors & Windows | High Rise Façade Builders | Sunroom Builders
Greenhouse Builders | Wooden Frame Construction | Rooftop Constructors
Staircase Constructors | Patio Builders | Furniture Industry & Carpenters
Racks& Shelving | Balconies | Chalet Construction

PLASTIC INDUSTRY

Polyester Moulds | Windscreen For Trucks | Carbon Fiber Panels | Light Domes
Aerospace Industry | Aircraft Interior


For Impressive Performances

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When it comes to the quality of our machines, we are second to none. We deliver the promise of impressive performance every time. The name HACO can be trusted for good, heavy duty and effective machinery and our commitment to our products and services can be relied upon, as quality management is a priority in every aspect of our business. You can always rely on HACO for impressive performance.

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