



ALL YOU MAY NEED IN SCREW CUTTING

WIN & TWIN SERIES THE ULTIMATE TURNING & MILLING CENTRES

MODELS: 3000 / 4200 / 5100 / 6500 / 8000



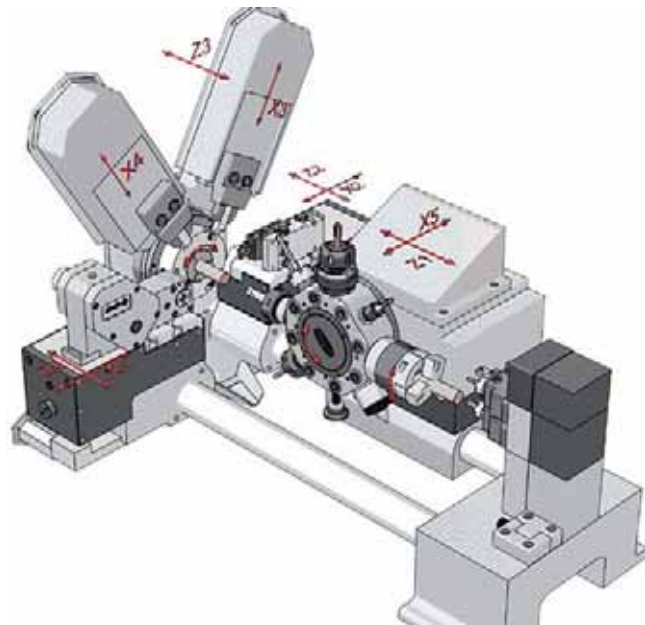


WIN PARTICULARITIES

WIN PARTICULARS INTRODUCING WIN & TWIN SERIES

WIN & TWIN series from MUPEM incorporate the most advanced technology in machining starting from bar. These authentic turning / milling centres are the most valuable MUPEM machines regarding their machining possibilities. Thanks to its specifically developed software for multislides control, along with all the optional attachments, few are the workpieces escaping from being successfully machined on either the WIN or the TWIN.

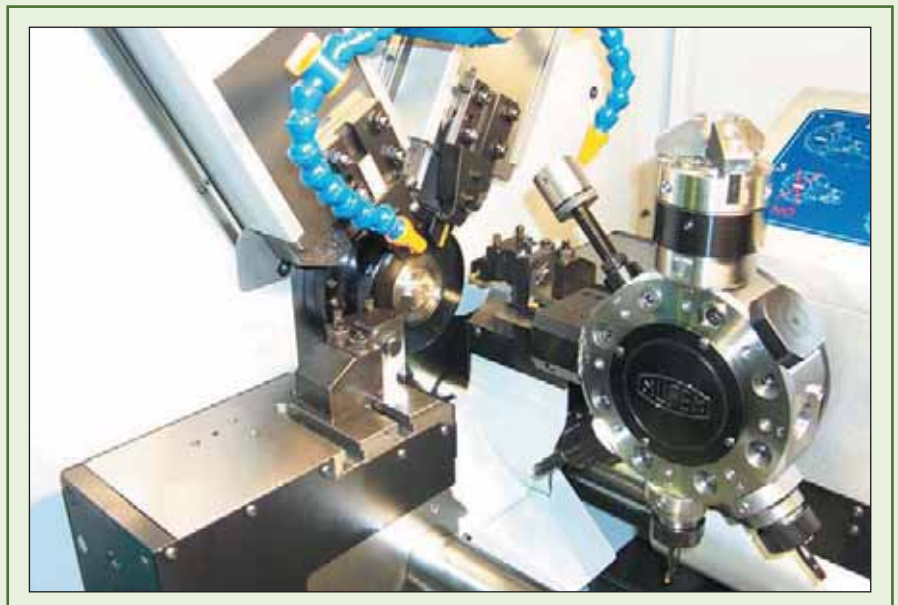
It is still hard to find such a valuable machine in the marketplace for such a reasonable price.



AXIS	STROKE	DESCRIPTION
Z1	230 mm	AXIAL STROKE OF THE TURRET
Z2	230 mm	AXIAL STROKE OF THE HORIZONTAL SLIDES
Z3	100 mm	AXIAL STROKE OF THE VERTICAL SLIDES
X1	70 mm	RADIAL STROKE OF THE FRONT HORIZONTAL SLIDE
X2	70 mm	RADIAL STROKE OF THE REAR HORIZONTAL SLIDE
X3	70 mm	RADIAL STROKE OF THE REAR VERTICAL SLIDE
X4	70 mm	RADIAL STROKE OF THE FRONT VERTICAL SLIDE
X5	50 MM (-10/+40)	RADIAL STROKE OF THE TURRET
S1 Y S2		MAIN SPINDLE AND PICK UP SYNCHRONISATION

WIN & TWIN ADVANTAGES

- Machining accuracy
- Short machining cycles
- Quick setting up
- Easy and unexpensive servicing
- Easy interactive programming
- Flexibility



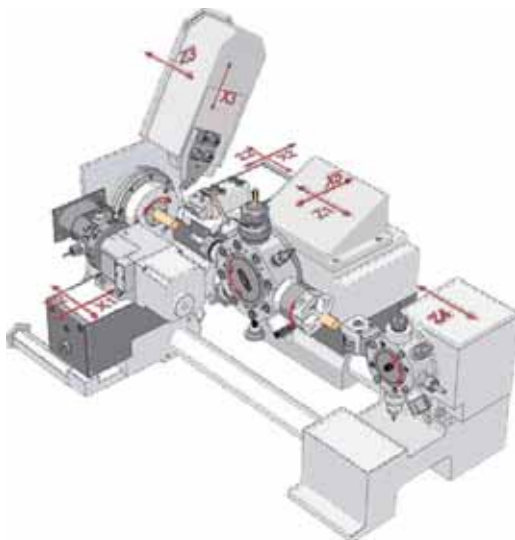


TWIN PARTICULARITIES

EIGHT POSITIONS VDI-20 AUXILIARY TURRET

The difference between WIN and TWIN is mainly the auxiliary turret fitted on the front horizontal slide. With this turret, the machine enters in another dimension: up to 8 VDI-20 positions, bidirectional indexing system and the possibility to have up to 4 rotating tools.

TWIN model gives a great advantage when long machining is needed in the back side of the workpiece. The auxiliary turret enables to perform many operations on the main spindle while the previous part is simultaneously finished on the second operations unit, saving a lot of time.



INTERACTIVE MULTIAXIS CONTROL

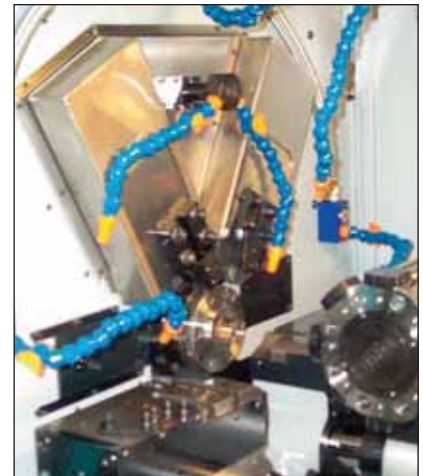
- Simple programming system
- Easy workpiece geometry programming thanks to its integrated CAD system
- Predefined machining cycles
- Simple and flexible programming



VERTICAL SLIDES WITH AXIAL STROKE

From now on, and as an option, we may have both vertical slides moving along the "Z" axis (Z3) in 100 mm. Combined with the standard radial stroke of these slides, the WIN's possibilities are definitely overboosted.

Now this machine is capable to make turnings and threads with the vertical and the horizontal slides.



WIN / TWIN: PRECISION + PRODUCTIVITY + FLEXIBILITY

BED

WIN & TWIN series' bed is made of perlitic cast iron, carefully designed using FEM (finite elements analysis) to grant the highest possible rigidity and to avoid guides heating.

A good chip evacuation and coolant recirculation is granted.

MAIN SPINDLE AND SLIDES

For a maximum performance with low servicing, the main spindle is fitted on the headstock with high precision angular contact bearings lubricated for life. Dynamic balancing of the spindle insures a high precision concentricity allowing a very high surface quality. The ultimate AC operation gives a very high torque even at the lowest revolutions.

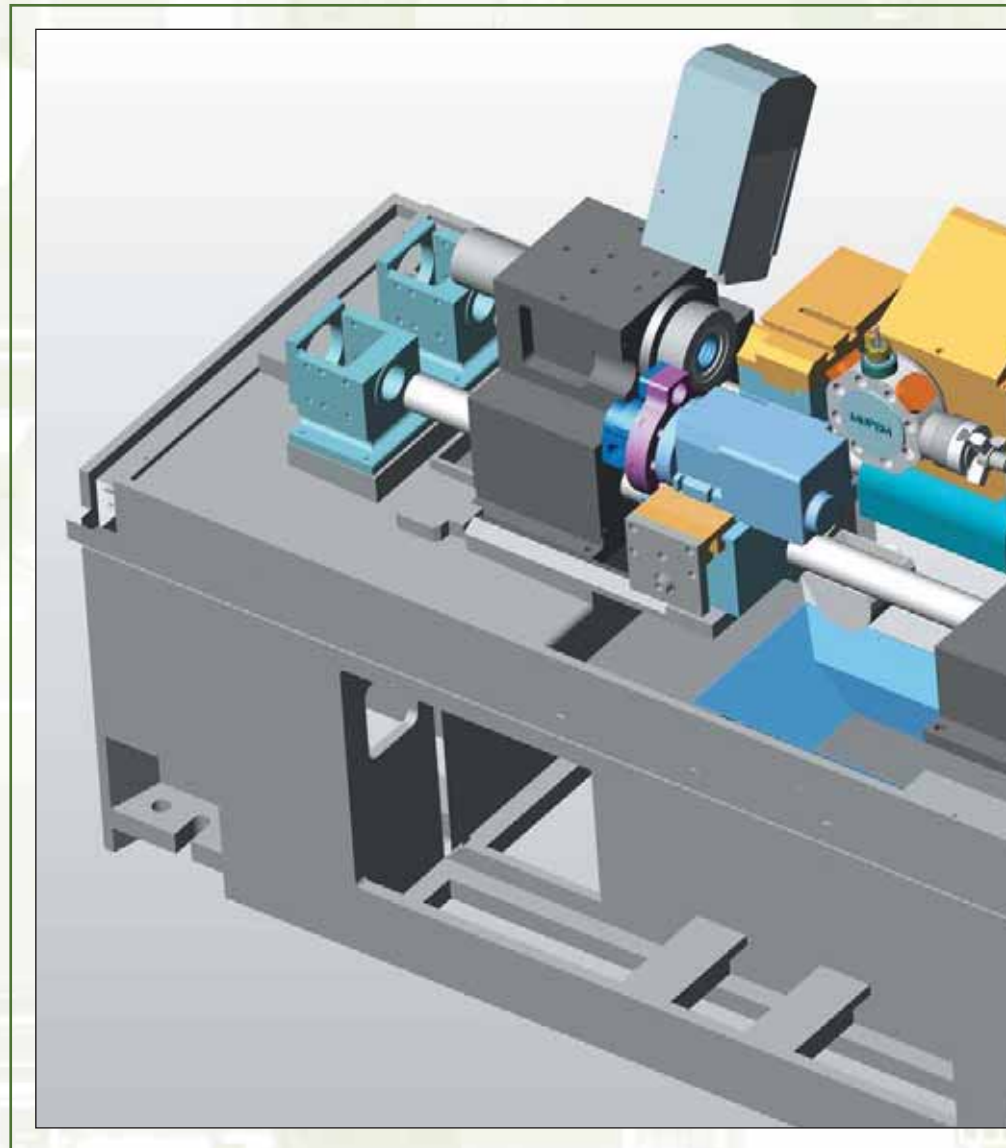
Each slide is fitted with an optical scale for closed loop confirmation to the control. With an optical scale, every measuring is independent from any mechanical operations and this is the reason for high repeatability rates.

In case of machining soft materials (plastics, etc.) or small diameter bars, it would be possible to obtain higher cutting speeds than those recommended herein. Our Engineers will study your case.

EIGHT POSITIONS TURRET

New generation electrical indexing turret with HIRTH teeth locking system. The extra swift indexing is CNC controlled without the old maltese cross system.

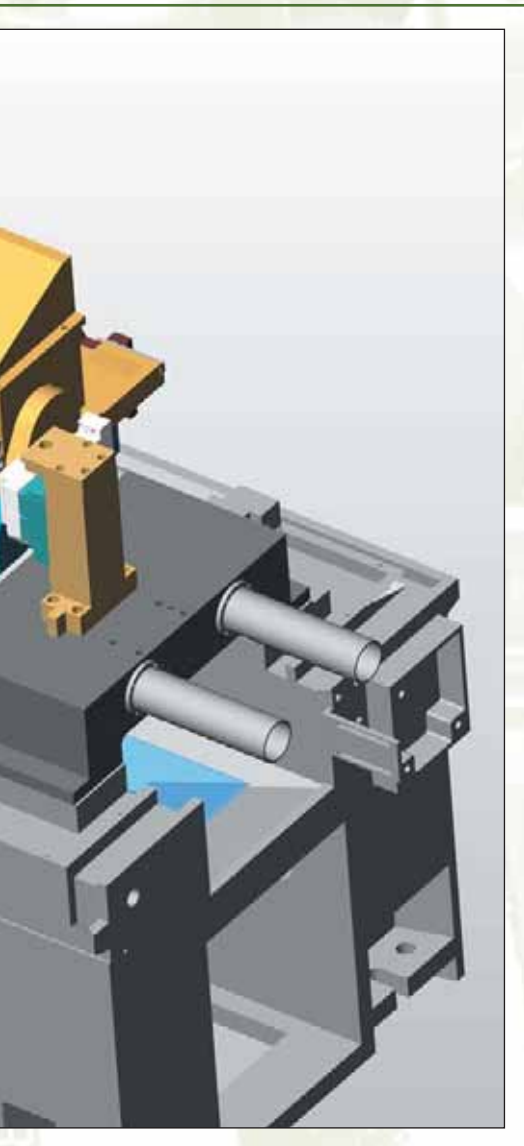
Consecutive position indexing time is 0,15" (without locking) being 0,4" the 180° indexing time. This way, unproductive times are kept very low.



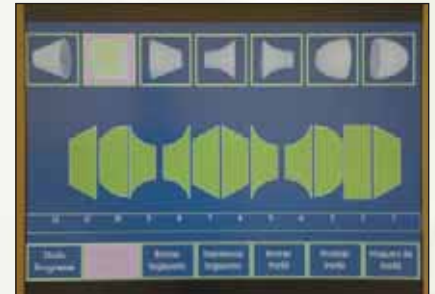
The intelligent indexing system calculates the exact indexing position bearing in mind the length of the tools mounted on the turret to avoid crashes.

The turret may be fitted with up to four rotating tools with internal cooling of the tools with the VDI-30 standard.





MAIN SCREEN



SEGMENTS

8 AXIS CONTROL

With the exclusive MUPEM control which is industrial PC based, the operator writes a program by the means of a touch screen. Step by step, the operator is guided all through the process with all the available options concerning every programming step. The operator has previously set the programming language and there is no need to use any special character. On each step, the options available will only be the ones related to the job to be achieved, avoiding mistakes.

The control allows the operator to draw the workpiece profile with all the significant dimensions thanks to the integrated CAD system.

It is now possible to program the machine from an external PC via RS-232.



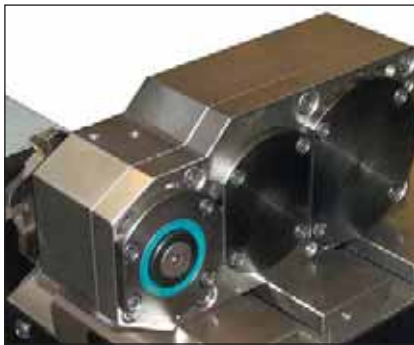
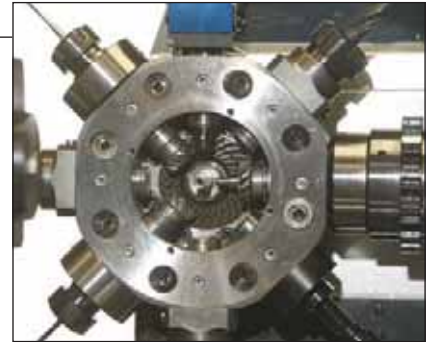


OPTIONAL ATTACHMENTS

ROTATING TOOLS ON THE TURRET

Optionally, we may fit four rotating tools including the Pick Up device. The rotating speed goes up to 6.000 RPM, giving 2,9 kW power. Thanks to this option, several machining operations can be achieved, such as:

- Differential tapping without inverting the main spindle
- Fast drilling
- Drilling and tapping off the work-piece centre
- Various millings



POLYGONAL TURNING AND THREAD MILLING DEVICES

With these devices, polygon turning and thread milling can be achieved only by swapping the head on the slide since the transmission and the operation is the same for both devices.

On the WIN machine, we may provide with devices for the front or the rear slides while for the TWIN we may only fit the device on the rear slide.

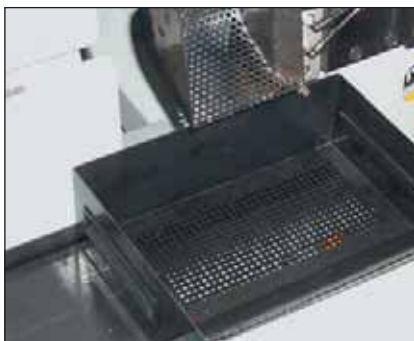
CROSS DRILLING OR MILLING DEVICE

Equipping this attachment, the part can be cross drilled all around its perimeter or along the "Z" axis.

With this attachment we may have cross drillings all around the work-piece's circle or along the "Z" axis.

It is also possible to mill key seats or even helicoidal grooves with the "C" axis, only available with the FANUC 16i - T control.

On the WIN machine, we may provide with devices for the front or the rear slides while for the TWIN we may only fit the device on the rear slide



PART CATCHER AND CONVEYOR

Another optional device we may fit is the part catcher. This attachment may be positioned under the main spindle or under

the pick up in order to catch the part and to take it outside of the machine to a special tray.



OPTIONAL ATTACHMENTS

STOP AND POSITIONING OF THE MAIN SPINDLE

Once the spindle is stopped, it can be locked in a determined angle, allowing the following operations:

- Cross drilling at different angles
- Cross tapping
- Cross and front millings



DOUBLE SPINDLE CROSS DRILLING DEVICE

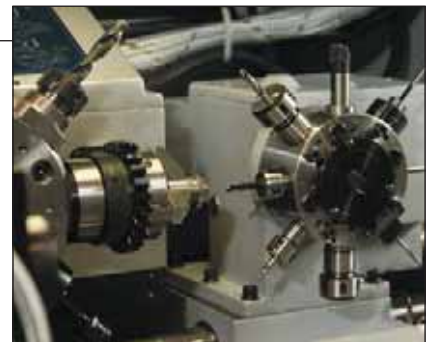
For some parts needing cross drills, threaded or not, we have designed a special device fitted with two working spindles where you may fit a drill and a tapper. Only by a slight movement of the slide, cross drilling

and tapping can be achieved avoiding the wait for the auxiliary turret indexing or the 180° turn of the spindle to tap from the opposite slide. As a result, cycle time decreases dramatically.

PICK UP AND SECOND OPERATIONS UNIT

The Pick Up device is a subspindle fitted on the main turret that spins synchronously with the main spindle. The pick up is aimed to catch the part and cut it off without nipples. The pick up may catch either round parts, hexagonal or even square parts. Combined with the

second operations unit, after cutting off the part, just by indexing the turret 180° we may finish the machining on the back side of the part avoiding the need for finishing the part in a second machine.



BACK MACHINING EXAMPLES

- External threading
- External profiles turning
- External threadings
- Eccentric drilling and tapping



OPTIONAL ATTACHMENTS

WIDE RANGE OF TOOLHOLDERS

For radial machining we have a wide range of quick swapping tool holders made of alloy steel, tempered and grinded to grant a strong and rigid fitting on the slides.

Several pick up sizes (collet and chuck)

Wide choice of VDI-30 commercial tool holders or special fittings for 1" shank tool holders.

Finally, we have a wide range of rotating tool holders for complex machining.



OTHER OPTIONAL ATTACHMENTS

- Rotating tools on the main turret 2,9 kW and up to 6000 rpm
- Second operation unit with four static tool holders
- Second operation unit with two static / two rotating tool holders 1,8 kW
- Second operation unit with eight tool holders (four static / four rotating 1,8 kW)
- Pick Up device with collet up to \varnothing 32 mm capacity
- Pick Up device with collet up to \varnothing 42 mm capacity
- Pick Up device with \varnothing 90 three jaws chuck
- Stop and positioning of the main spindle every 5°
- Stop and positioning of the Pick Up every 15°
- Stop and positioning of the main spindle every $0,001^\circ$ (With FANUC 16i - T)
- Polygonal turning and thread milling attachment on the front or rear slide WIN
- Polygonal turning and thread milling attachment on the rear slide TWIN
- Vertical slides with movement along the "Z" axis in 100 mm. (both in the WIN, only one in the TWIN)
- Part catcher and extractor
- Rotating tools on the auxiliary front turret



TECHNICAL FEATURES

TECHNICAL FEATURES		WIN/TWIN 30	WIN/TWIN 42	WIN/TWIN 51	WIN/TWIN 65	WIN/TWIN 80
HEADSTOCK						
ROUND BAR MAX. CAPACITY	mm	30	42	51	65	80
SPINDLE'S FRONT BEARING DIAMETER	mm	65/100	100/150	100/150	110/150	110/150
DIN 6343 CLAMPING SYSTEM'S COLLET CAPACITY	mm	30	42	51	60	80
HAINBUCH CLAMPING SYSTEM'S COLLET CAPACITY	mm	30	42	51	65	80
MAXIMUM SPINDLE'S SPEED	RPM	6000	4500	4500	3000	2500
STANDARD MAIN SPINDLE OPERATION'S POWER	kW	7,5/11	7,5/11	7,5/11	11/15	11/15
OPERATIONS		AC. ASYNCHRONOUS WITH CONTINUOUS SPEED VARIATION				
MAIN TURRET						
NUMBER OF TOOLS	#	8				
TOOLS SHANK BORE	mm	1 1/4" (31,75) Ø VDI-30				
AXIAL STROKE (* OPTIONAL)	mm	110 - 170* - 230*				
RADIAL STROKE	mm	50 (+40 / -10)				
RAPID TRAVERSE	mm/min	15				
FEED FORCE	N	6790				
ONE CONSECUTIVE STATION INDEXING TIME WITH LOCKING	s	0,6				
INDEXING SYSTEM	-	BIDIRECTIONAL BY THE SHORTEST WAY				
ROTARY TOOLS (OPTIONAL)						
NUMBER OF ROTARY TOOLS	#	4				
STANDARD ROTARY TOOLS POWER	kW	2,9				
MAX. SPEED	RPM	6000				
CARROS TRANSVERSALES						
NUMBER OF SLIDES	#	2				
RADIAL STROKE X1 / X2	mm	70				
RADIAL OPERATIONS SYSTEM X1 / X2	-	HYDRAULIC				
RADIAL FEED FORCE X1 / X2	N	8000 AT 50 bar				
AXIAL STROKE Z1	mm	230				
AXIAL OPERATIONS SYSTEM	-	A.C. OPERATIONS WITH CONTINUOUS SPEED VARIATION AND BALL SCREW TRANSMISSION				
AXIAL FEED FORCE	N	6790				
AUXILIARY TURRET (TWIN)						
NUMBER OF TOOLS	#	8				
TOOLS SHANK BORE	mm	VDI-20				
MOTORISATION (OPTIONAL)		LIVE TOOLS STANDARD POWER: 2,9 kW				
- 2 LIVE TOOLS		LIVE TOOLS MAX. SPEED: 6000 RPM				
- 4 LIVE TOOLS		CNC POLYGONAL TURNING AND THREADS MILLING FROM THE AUXILIARY TURRET				
- POLYGONAL TURNING / THREADS MILLING + 3 LIVE TOOLS						
- POLYGONAL TURNING + THREADS MILLING AT 180° + 2 LIVE TOOLS						
VERTICAL SLIDES						
NUMBER OF VERTICAL SLIDES	#	2 (TWIN: 1)				
RADIAL STROKE X3 / X4	mm	70				
AXIAL MANUAL ADJUSTMENT	mm	50				
RAPID TRAVERSE	m/min	15				
FEED FORCE	N	8000 A 50 bar				
VERTICAL SLIDES WITH AXIAL STROKE (OPTIONAL)						
NUMBER OF VERTICAL SLIDES	#	2 (TWIN: 1)				
RADIAL STROKE X3 / X4	mm	70				
AXIAL STROKE Z	mm	100				
RAPID TRAVERSE	m/min	15				
FEED FORCE	N	8000 A 50 bar				
SECOND OPERATION UNIT (OPTIONAL)						
- 4 STATIC TOOLS		LIVE TOOLS STANDARD POWER: 1,8 kW				
- 4 STATIONS, 2 STATIC / 2 LIVE TOOLS						
- EIGHT POSITIONS TURRET. OPTIONALLY WITH FOUR LIVE TOOLS						
HYDRAULIC SYSTEM						
PRESSURE	bar	70				
TANK CAPACITY	l	75				
COOLING SYSTEM						
FLOW	l/min	20				
STANDARD PRESSURE	bar	1				
OPTIONAL PRESSURES	bar	4 / 1+4 / 4+4				
TANK CAPACITY	l	200				
DIMENSIONS						
SPINDLE'S CENTRE HEIGHT FROM THE GROUND	mm	1200				
AREA IN THE WORKSHOP	mm	2900 X 1700				
MACHINE'S HEIGHT	mm	1700				
APPROX. WEIGHT	kg	4100				



MANUFACTURING RANGE



OMEGA

CURRENT MACHINES RANGE

- CNC MULTISLIDES AUTOMATIC LATHES
- AUTOMATIC BAR FEEDERS
- HANDLING SYSTEMS
- AUTOMATIC LATHES
- MULTISPINDLE LATHES
- CNC LATHES



TWIN



MIKRA



SUPRA



DEBA

These technical specifications may vary without notice due to our continuous improvement policy.



MAGNA



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