

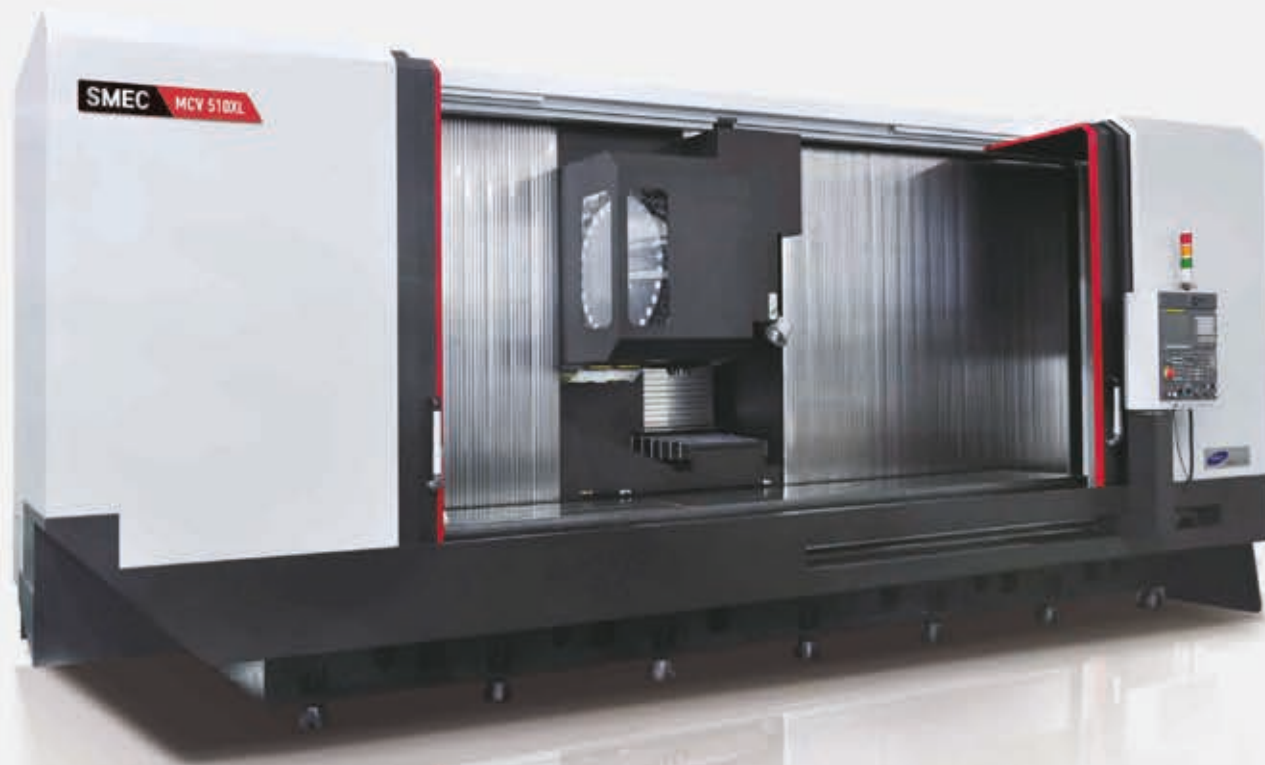
SMEC

MCV 510XL

VERTICAL MACHINING CENTER



MCV 510XL



MCV 510XL

Offers high productivity and efficiency while meeting the various needs of the production floor with its unique structural design

- Incomparable non-cutting time for large machining center
- Customer recognized best quality (precision)
- High rigidity C3 class ball screw, roller guide used for all axes to simultaneously realize high speed, high precision and high rigidity
- Significantly reduced non-cutting time with the ATC attached directly to the column



MCV 510XL.
Designed for High Efficiency and High Productivity Machining

Item	MCV 510XL
Table Size	4,600 x 550mm
Travels (X/Y/Z)	4,000/510/550mm
Spindle Speed	12,000rpm
Spindle Motor	11/15/18.5/22.2(Max)kW
Tool Shank	BBT40
Rapid Traverse (X/Y/Z)	24/30/30 m/min

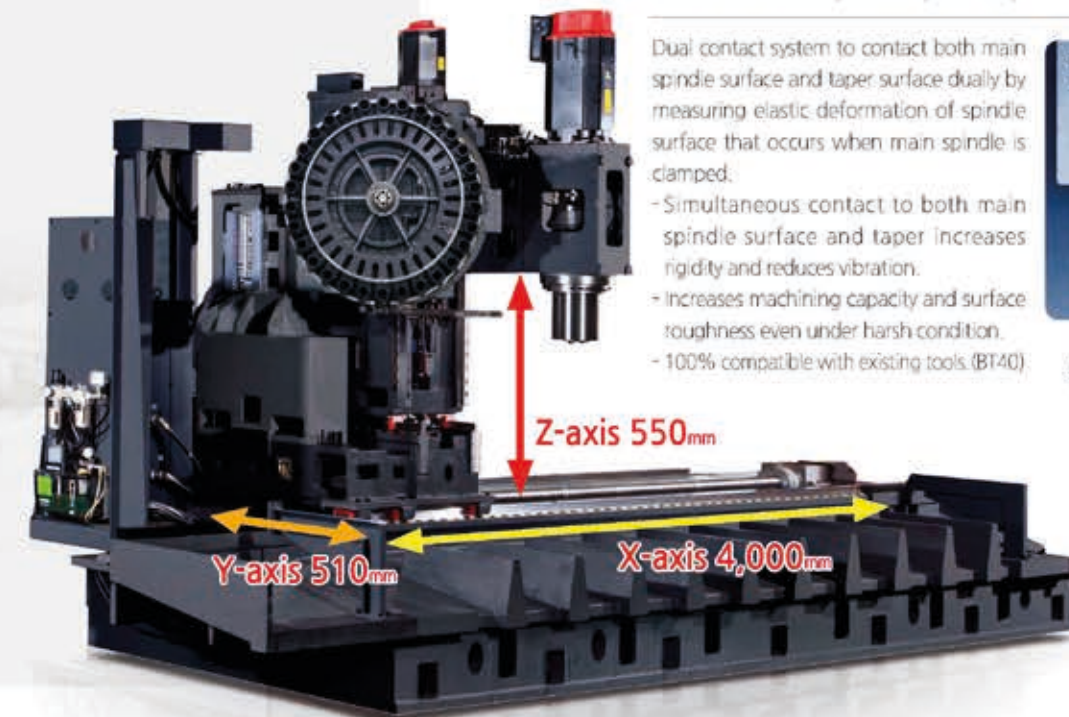
Dual Contact Spindle (BBT 40)

Dual contact system to contact both main spindle surface and taper surface dually by measuring elastic deformation of spindle surface that occurs when main spindle is clamped.

- Simultaneous contact to both main spindle surface and taper increases rigidity and reduces vibration.
- Increases machining capacity and surface roughness even under harsh condition.
- 100% compatible with existing tools (BT40)



Big Plus BBT40(Opt.)
(Simultaneous Dual Contact)



MCV 510XL



FULL SPLASH GUARD(STD.)

The standard Full Splash Guard with front, left and right slide covers keeps the chips and coolant contained near the table, preventing their discharge into the outside environment, simplifying chip discharge (MCV 510XL)

Rapid Traverse(X/Y/Z)

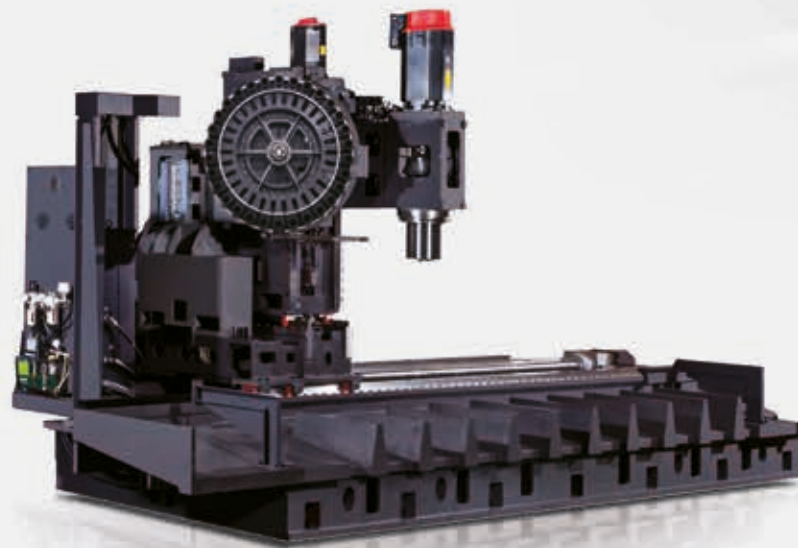
: **24/30/30** m/min

Table Size

: **4,600×550** mm

Motor power (Cont. / Max.)

: **11/22.2** kW



MEMORY RANDOM Type Quick Tool Changer

Double Arm Swing Type offers the fastest tool change time

Tool to Tool Time

1.5_{sec} at **60Hz** (MCV 510XL)



Oil Bath Cam Type (MCV 510XL)

In general, BT30 sized machines use Drum Type tool changing. But due to the vibration from the heavy head of Drum Types, SMEC implemented a self-developed high-speed CAM system.

Tool Magazine

Servo motors are used to operate the ATC and MG, ensuring problem-free high-speed ATC operation. High speed magazine rotation helps reduce non-cutting time.

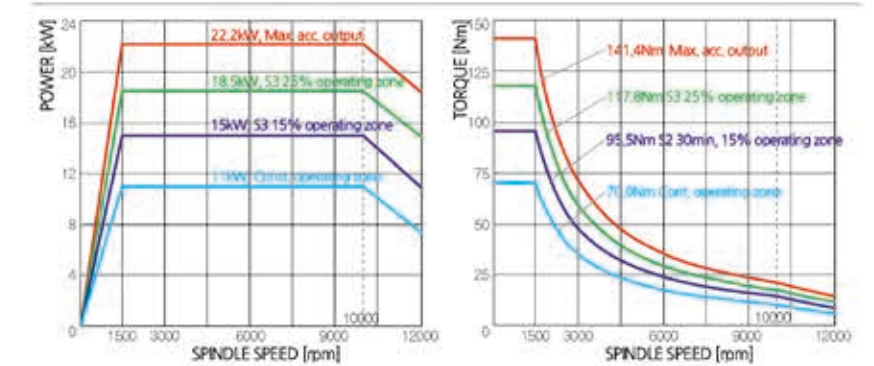


Main Operation Panel

Mounted on a guide rail, the OP panel can be moved from the right edge of the table to the very center, allowing the operator to look closely at the workpiece.

Spindle Power and Torque Diagram

Unit : mm





Moveable Column

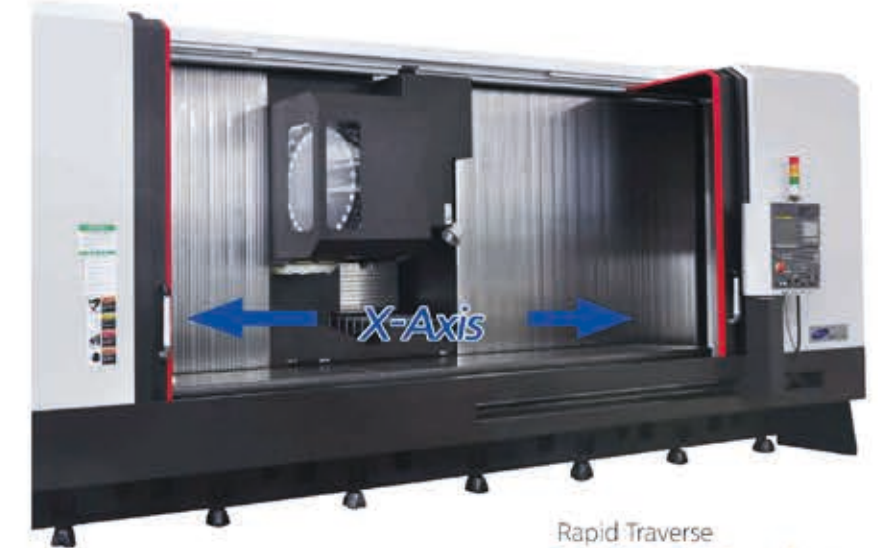
With the workpiece fixed, the column travels in the X and Y-axis and machines, so even if the workpiece is large and heavy, there is no overhang of the X and Y axis, enabling precise machining.

Servo Motor ①

- Power conversion via direct coupling (without using transfer medium)
- Minimized backlash during axis feed

Guide Way ②

- Improved speed, rigidity and durability
- Better wear resistance than BALL LM GUIDES, ensuring better precision travel and extended machine lifetime



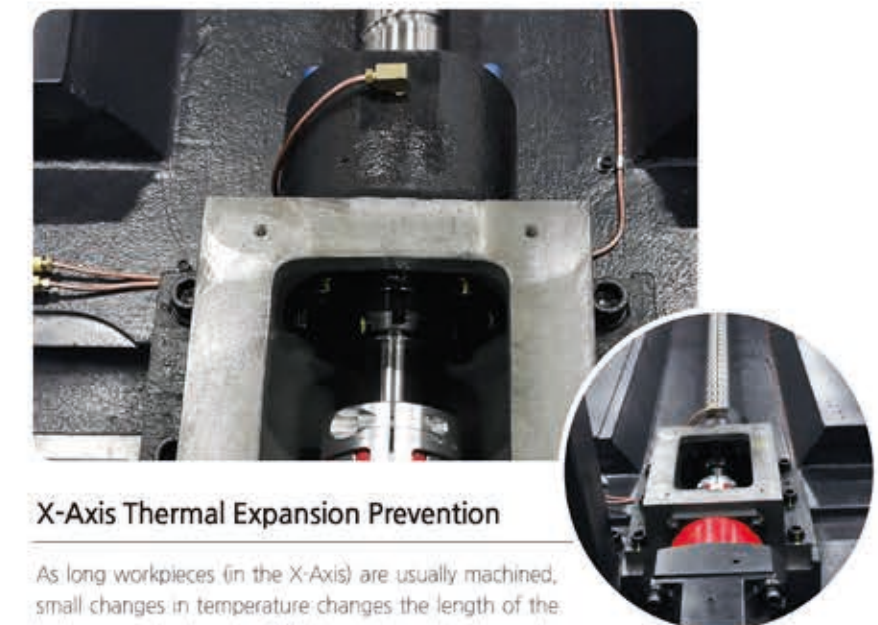
Rapid Traverse Rate

In order to increase traverse rate, L/M Guides were used for all the axes, to offer rapids not normally seen in large machines. To ensure durability and quality assurance during heavy-duty cutting, Roller Type LM Guides were used.

Rapid Traverse
24/30/30 m/min

X-Axis Ball Screw Diameter
Ø63

X-Axis Feed Motor
4 kW



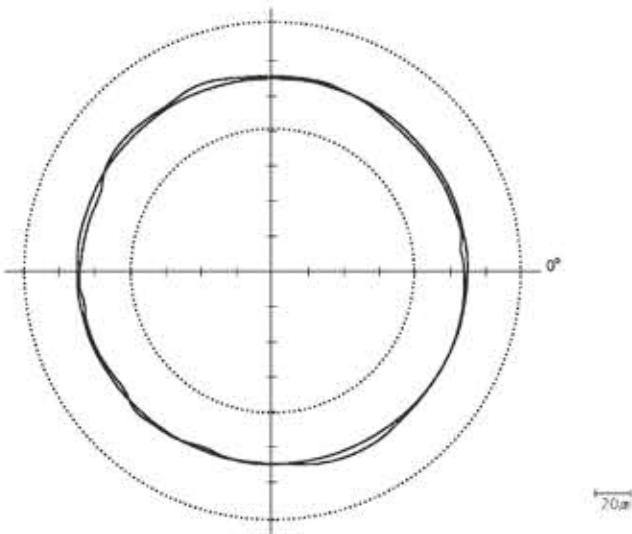
X-Axis Thermal Expansion Prevention

As long workpieces (in the X-Axis) are usually machined, small changes in temperature changes the length of the ballscrew on both ends. SMEC minimizes this change by fixing both ends and applying pre-tension to the ballscrew.

Machining Precision

Unit : mm

Roundness



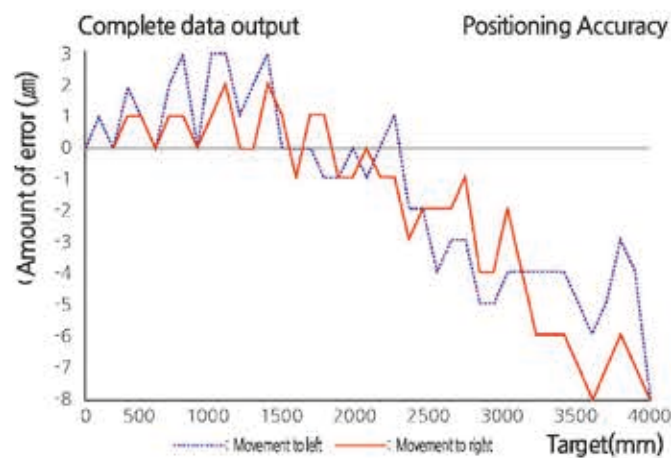
7.80 µm

Roundness

Conditions

Machine	MCV 510XL
Material	A 1050P
Tool	Ø25×4T
Spindle Speed	1,500RPM
Cutting depth	0.1mm
Tool size	Ø180
Feedrate	300m/min

X-axis Positioning Accuracy



12 µm/4,000mm

Position Accuracy

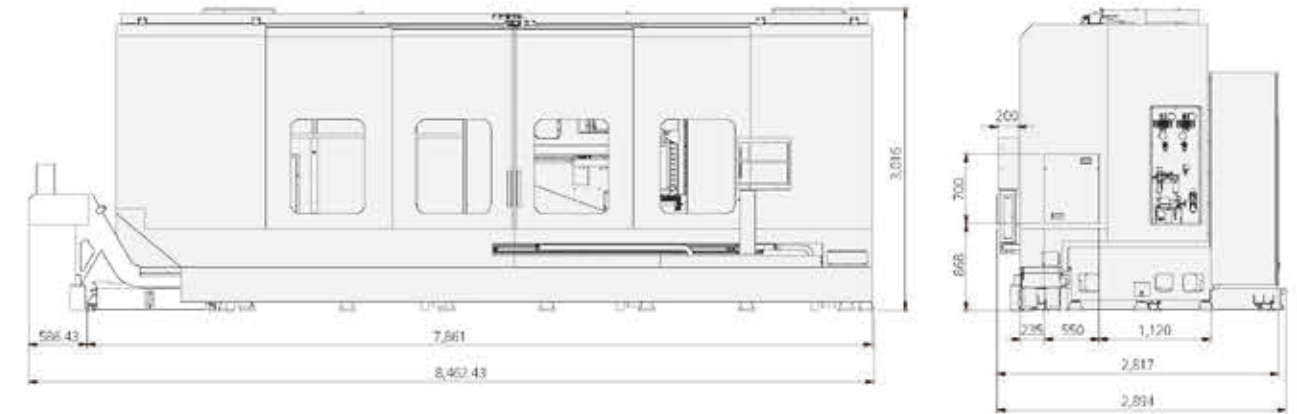
Conditions

Measured axis	X-axis
Methodology	Roundtrip

※Measured X-axis ballscrew position accuracy.

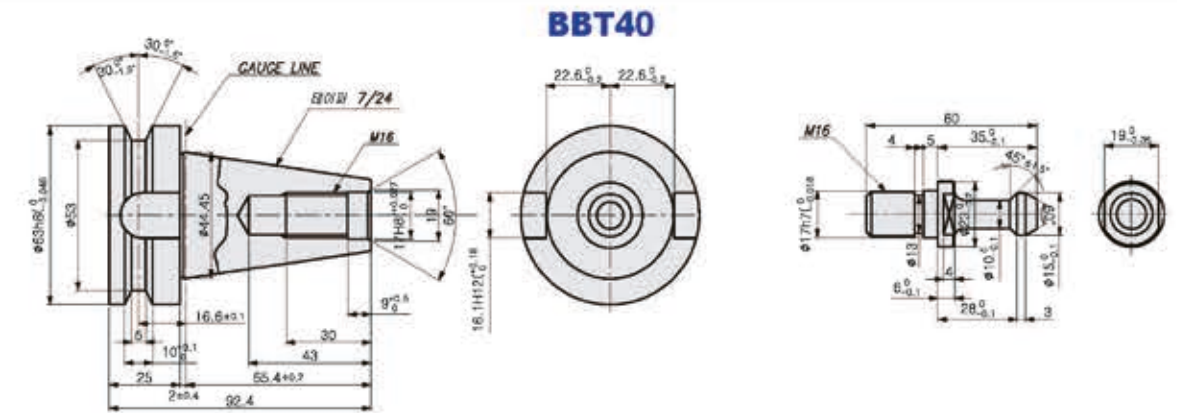
Machine Dimensions

Unit : mm



Tool Shank

Unit : mm



Cable Chain



All wires to the spindle and stranded wires to the OP Panel are protected in the Cable Chain, improving the overall design while protecting the wires from damage caused by repeated movement by the OP Panel.

Machine Specification

Item		MCV 510XL
Max. travel distance (X/Y/Z)	mm	4,000/510/550
Distance from table surface to spindle nose	mm	150 ~ 700
Distance from spindle center to column	mm	675
Table size	mm	4,600×550
Table surface		M16 TAP
Spindle	Spindle speed	min ⁻¹ 12,000
	Spindle taper	NT40
	Spindle bearing I.D.	mm Ø70
	Motor power (Cont./30min)	kW 15/11
Feedrate	Rapid traverse (X/Y/Z)	m/min 24/30/30
	Cutting feedrate	mm/min 1 ~ 10,000
ATC	Tool shank	BT 40 / BBT 40
	Magazine capacity	30
	Tool changing time (T-T)	sec 1.5
	Max. tool length / weight	kg 300 / 8
	Max. tool dia. (adjacent empty)	mm Ø90 (Ø140)
Power supply	kVA	32
Floor space (L×W×H)	mm	2,810×7,925×3,093
Machine weight	kg	21,000
CNC system		Fanuc Series

※ Design and specifications subject to change without notice.

[] : Option

Standard Accessories

- LEVEL BASE PLATES AND BOLTS
- COOLANT TANK
- TOOLS AND TOOL BOX
- SPLASH GUARD
- DATA SERVER
- AICC2
- T-SLOT TYPE TABLE

Optional Accessories

- LIFT UP CHIP CONVEYOR
- SCREW CONVEYOR (FOR REAR TYPE CHIP CONVEYOR)
- 3MPG

NC Specification (Fanuc Series)

Item		Specification	Fanuc Series
Controlled axis	Controlled axes		XYZ(AB)
	Max. controlled axes		4(6) AXIS
	Max. simultaneously controlled axes		4
	Least input increment	0.001mm / 0.0001"	○
Operation functions	Manual handle feed	X1, X10, X100	○
	Feed per minute	G94	○
	Feed per revolution	G95	○
	Linear Interpolation	G01	○
Interpolation functions	Circular Interpolation	G02, G03	○
	Dwell	G04	○
	Cylindrical Interpolation	G70.1	○
	Reference Position Return	G28	○
	Reference Position Return Check	G27	○
Feed function	Rapid traverse feedrate override	F0, 25%, 50%, 100%	○
	Feedrate override		0~200%
Spindle function	Spindle override		○
	Rigid tapping		○
Tool functions	Tool function	T4-Digt / T2-Digt	○
	Tool nose radius compensation	G40 ~ G42	○
	Tool offset pairs		400
	Tool geometry / wear offset	GEOMETRY & WEAR DATA	○
	Tool life management		○
	Tool path graphic display		○
Program input	Automatic tool compensation		○
	Absolute / incremental programming		○
	Multiple repetitive cycle	G70 ~ G76	○
	Canned cycle	G90, G92, G94	○
	Inch / metric conversion	G20 / G21	○
	Program restart		○
	Retraction for rigid tapping		○
	Max. programmable dimension	±99999.999mm/±9999.999"	○
	M function	M3 digit	○
	Custom macro		○
	Canned cycle for drilling		○
	Direct drawing dimension programming		○
	Programmable data input	G10	○
	Optional block skip		○
	Workpiece coordinate system	G52 ~ G59	○
	Number of registerable programs		400EA
Setting and display	Help function	ALARM & OPERATION DISPLAY	○
	Run hour / parts count display	RUNNING TIME & PART NO. DISPLAY	○
	Spindle & servo load display	SPINDLE & SERVO LOAD DISPLAY	○
	Self-diagnosis function		○
	Extended part program editing	COPY, MOVE, CHANGE OF NC PROGRAM	○
	Display screen		10.4" color
Data input/output	Memory card input / output		○
	USB memory input / output		○
Editing operation	Part program storage size	512Kbyte(1280m)	1280M
Manual guide I	Manual Guide I		Opt.



Fanuc Manual Guide i

Erstellen Sie Ihre Teileprogramme
in nur wenigen Schritten

Reduzieren Sie den Zeitaufwand bei der Überführung Ihrer Zeichnungen in die Produktion:

Mit dem FANUC MANUAL GUIDE i lassen sich sowohl einfache als auch hoch komplizierte Maschinenzyklen inklusive Dreh-, Fräs-, Bohr- und Messzyklen schnell und einfach umsetzen. Dabei unterstützt die Software Sie durch intuitive interaktive Benutzerführung sowie spezielle Funktionen zur einfachen Teileprogrammierung und Simulation.

Merkmale:

- Bedienerfreundliche Programmierumgebung
- Erweiterte Zyklusbearbeitung (Drehen und Schleifen)
- Leistungsstarke Profilberechnung
- Nahtloser Umgebungswechsel
- Werkzeugverwaltungsfunktion
- Messzyklen
- Restschnitt
- Bearbeitungssimulationen

Die benutzerfreundliche Software MANUAL GUIDE i zur Fertigungsprogrammierung vereinfacht den Betrieb Ihrer Maschine. Die innovative Programmierung ermöglicht die Entwicklung von der Zeichnung zum Werkstück in kürzester Zeit. Dank MANUAL GUIDE i die CNC-Maschinen von FANUC schnell und einfach für Dreh-, Schleif- und Verbundbearbeitungsprozesse programmiert werden.

Selbsterklärende Menüs und grafische Simulationen führen den Benutzer durch die Programmierung, was selbst bei komplexen Bearbeitungsvorgängen zu hocheffizienten Ergebnissen führt.



Siemens Sinumerik 828D

Mehr Produktivität mit SINUMERIK 828D
– Smart Operation

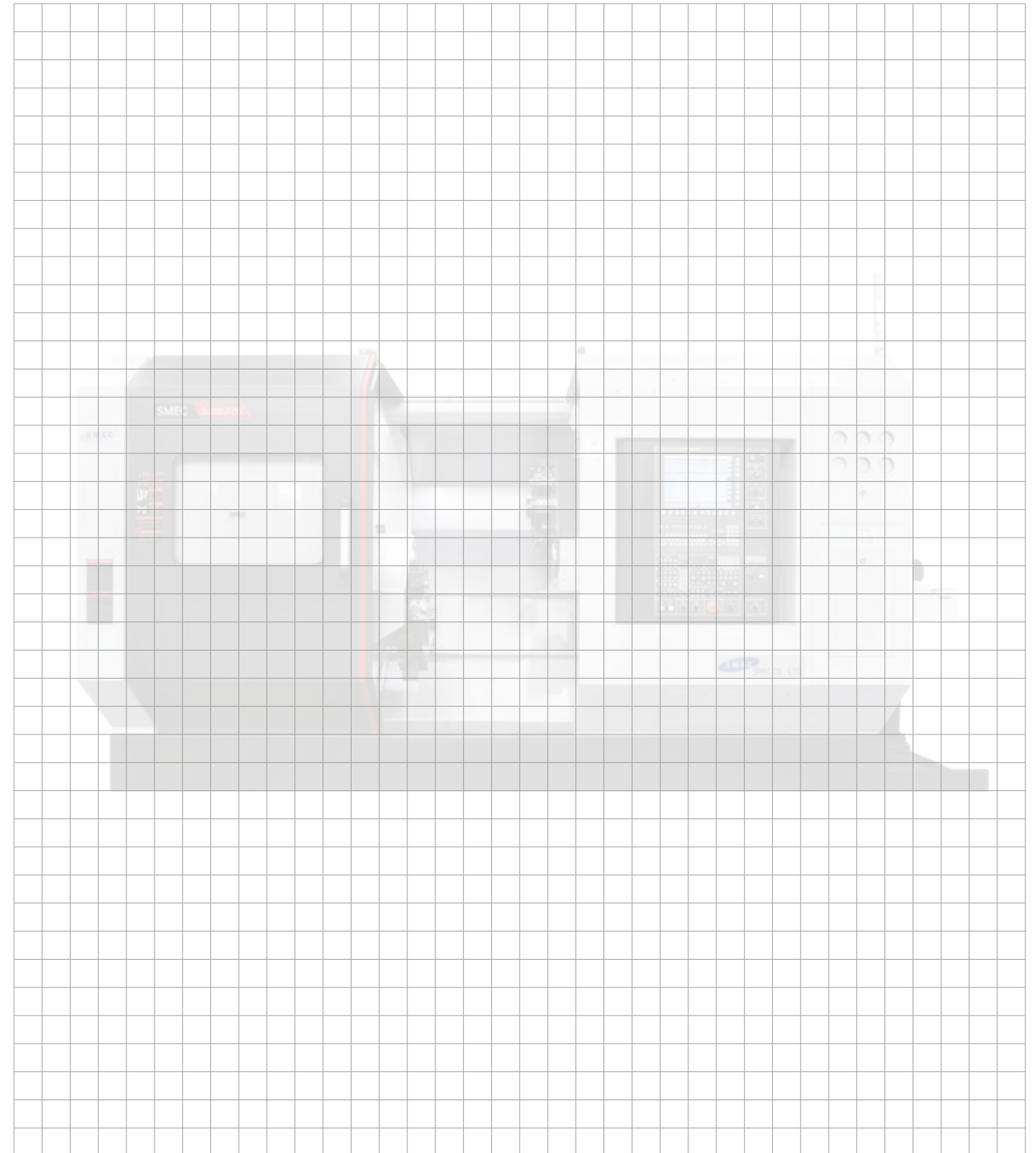
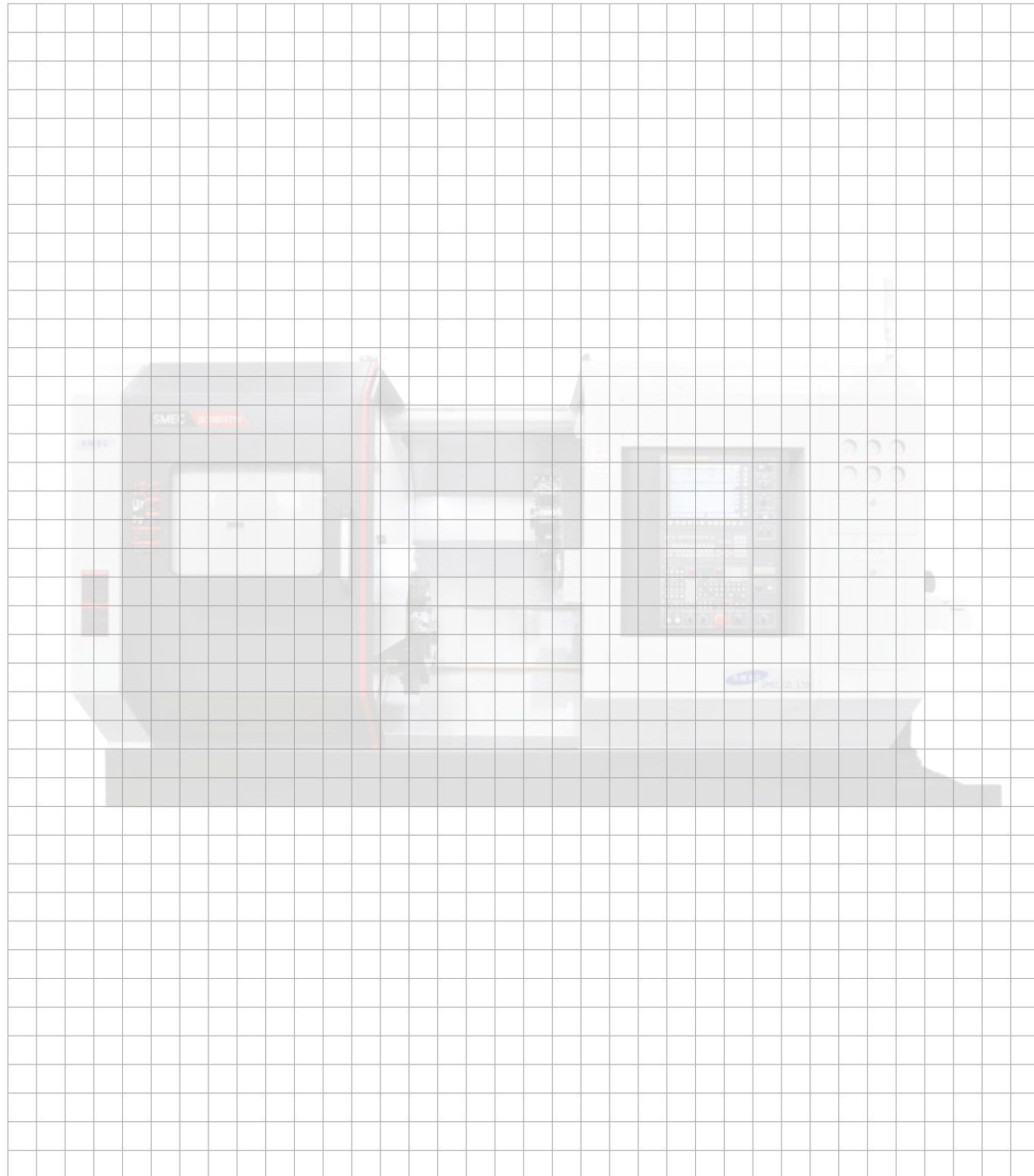
Robuste MultiTouch-Bedienung
kombiniert mit SideScreen

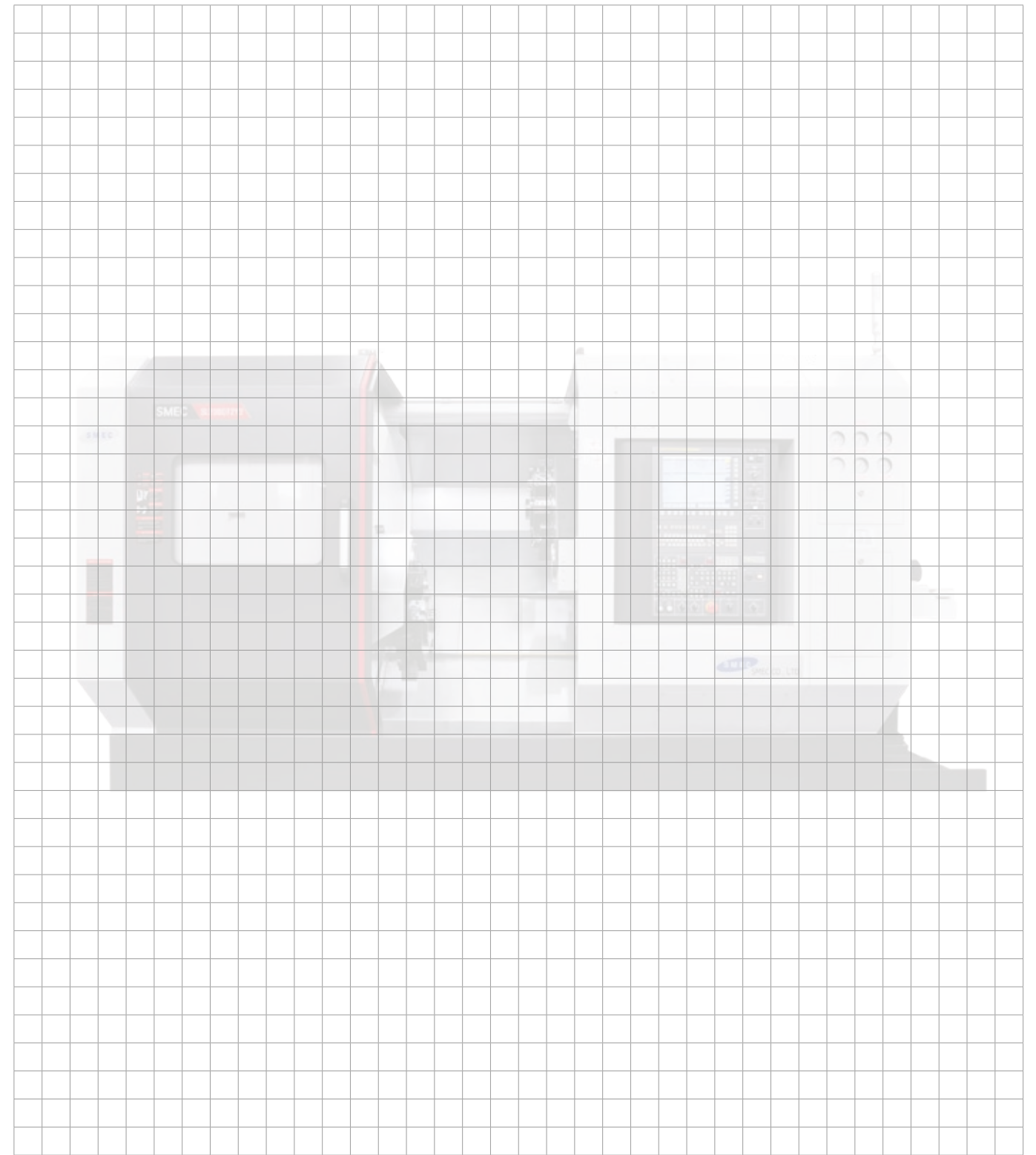
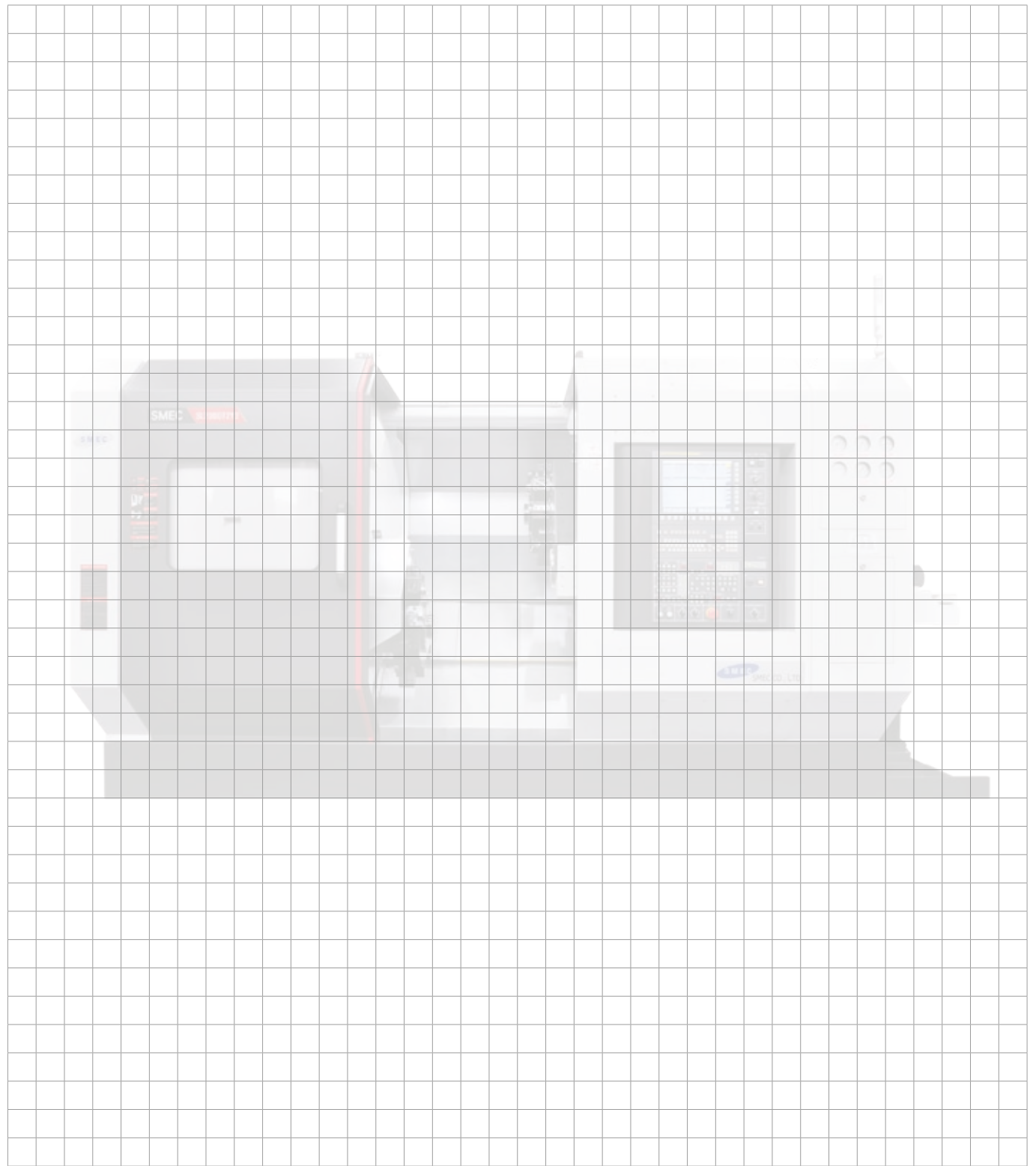
Für Werkstatt, Lohnfertigung und Großserienfertigung sind hochproduktive Automatisierungslösungen gefragt, die den Weg in die Digitalisierung begleiten.

Ob Einzelteil- oder Massenfertigung, einfache oder komplexe Werkstücke – die SINUMERIK CNC-Lösungen bieten Werkzeugmaschinenbetreibern immer die passende Lösung für ihre Anforderungen.

Durch die tägliche Nutzung von mobilen Geräten wie Smartphones, Tablets oder Computern haben wir eine bestimmte Art der Interaktion mit Maschinen entwickelt. Werkzeugmaschinen bilden hier keine Ausnahme mehr.

- Der Trend zu größeren Bildschirmen eröffnet die Möglichkeit, zusätzliche anpassbare Fenster in das HMI einzubinden.
- Änderung des Bildseitenverhältnis von 4:3 in 16:9.
- Zugleich stehen Lösungen bereit, mit denen die Benutzeroberfläche individuell an die Anforderungen der Kunden angepasst werden kann.
- So kann der Maschinenbediener wesentlich mehr Informationen parallel betrachten.





Gleich einspeichern und
ANGEBOT sichern!

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& Österreich**



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