

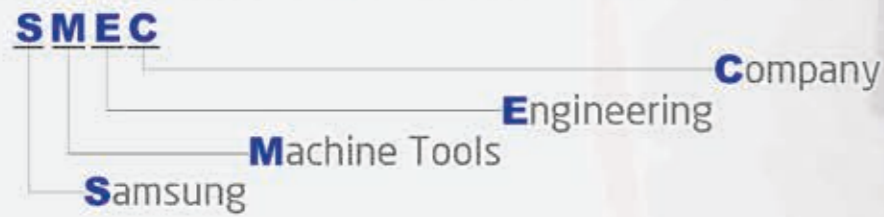
# SMEC

## SL 4500 series

HORIZONTAL TURNING CENTER



- 1988 - Started as Samsung Heavy Industries Machine Tools Business
- 1989 - Horizontal and vertical machining center technology partnership with OKK Japan
- 1991 - Turning center and vertical machining center technology partnership with Mori Seiki
- 1996 - 5-sided processing center technology partnership with Toshiba
- 1999 - Spun out from Samsung Aerospace Industries and established SMEC Co., Ltd



## SL 4500/4500X/4500L/4500XL

- A Type : 18(15)"
- B Type : 21"
- C Type : 24"



Strongest in its class with superb structural design  
 Simultaneous heavy duty and precision turning

- 45 degree torque tube type bed to support heavy duty turning
- Significantly reduced non-cutting time and efficient turning
- Low-center of gravity reducing vibration, thermal deformation and improving rigidity

### High Accuracy, High Rigidity Spindle

#### Pin Tube Rib Design for Minimal Axis Heat Transfer

Radiator fan-like pin tube rib design dissipates heat generated by axis movements, maintaining minimal thermal expansion.



#### Output Converting Transmission

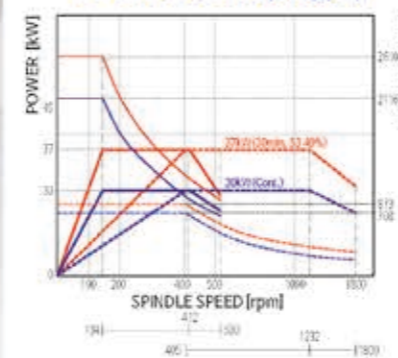


Equipped as standard feature, high Output Converting Transmission provides heavy-duty machining.

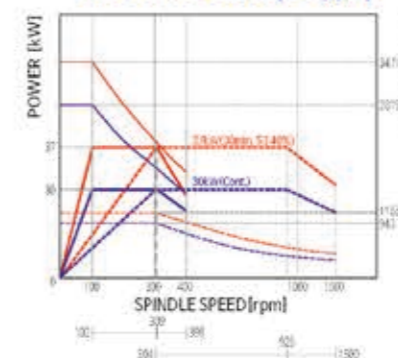


#### Spindle Power & Torque Diagram

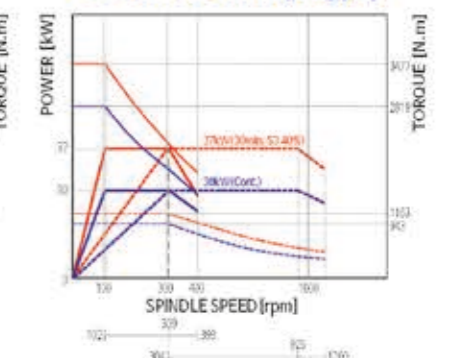
SL 4500/4500M (A Type)



SL 4500/4500M (B Type)



SL 4500/4500M (C Type)



An innovative high precision, heavy duty CNC Lathe,  
integrated with all of SMEC's advanced technology  
**- SL 4500 series**

Spindle speed  
**2,000 rpm** (A type 15")  
**1,800 rpm** (A type 18")  
**1,500 rpm** (B type 21")  
**1,200 rpm** (C type 24")

Max. machining length  
**1,250 mm** (SL 4500)    **1,213 mm** (SL 4500M)  
**2,255 mm** (SL 4500X)    **2,255 mm** (SL 4500XM)  
**3,055 mm** (SL 4500L)    **3,055 mm** (SL 4500LM)



Spindle motor (cont./max.)  
**30/45 kW**

Feed motor (X/Z)  
**7/6 kW**

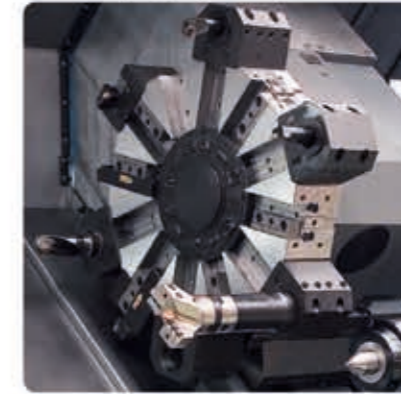
Rapid traverse (X/Z)  
**20/20 m/min** (SL4500M)  
**20/18 m/min** (SL4500XM)  
**20/10 m/min** (SL4500LM)

Max. machining diameter  
**Ø690 mm** (STD Turret)  
**Ø620 mm** (MSTurret)

**Highly Reliable and Rigid Structural Design**

- One piece Meehanite casting with heavily ribbed torque tube design
- Rigid bed supports for powerful cutting
- Excellent vibration dampening and thermal displacement design

**SL 4500 (High Speed Hydraulic Turret)**



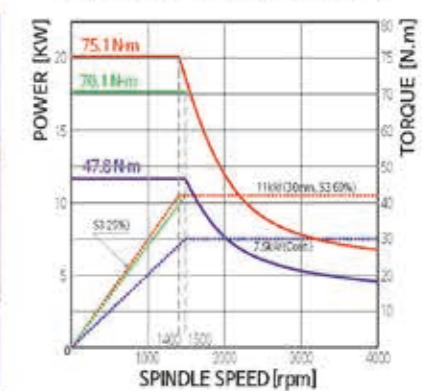
Indexing Time      Number of tool positions  
**0.2 sec (60 Hz)**      **Std: 12 / Opt: 10 stations**

**High Speed, Heavy Duty Hyd. Index Turret**

Driven by a high torque hydraulic index motor, the 10-station heavy-duty turret can accept tools on both left and right side of each station. Turret indexing (repeatability ± 0.005) is non-stop, bi-directional with a fast 0.25 second next station index time. A large diameter (Ø250) Curvic coupling with 6,377kgf clamping force enables precision as well as heavy-duty cutting.

**SL 4500M (BMT High Speed Turret)**

**Turret Torque Diagram (BMT75)**



Indexing Time      Number of tool positions      Milling Spindle Speed      Tool Holder  
**0.2 sec (60 Hz)**      **12 stations**      **4,000 rpm**      **BMT 75**

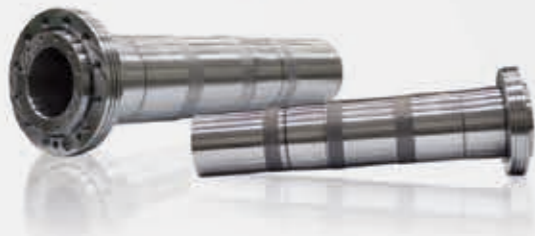
**BMT Milling Turret (M Type)**

SL4500 Milling type is equipped with standard 12-station BMT turret capable of accepting rotary tools at any station, providing flexible machining thru various machining operations in just one set-up. Each BMT holder is securely tightened by 4 screws, allowing the turret to perform heavy-duty cutting, milling and drilling operations. Turret indexing is non-stop, bi-directional with a fast 0.25second next station index time.



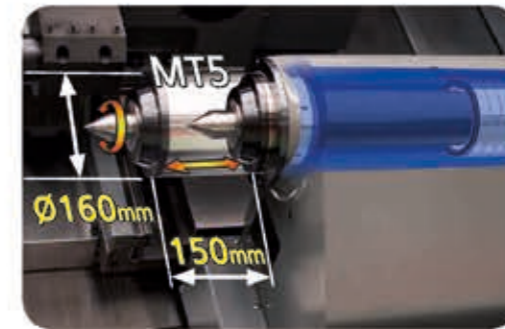
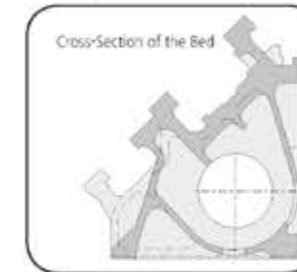
### Centralized Operation Panel

The centralized operation panel with its 10.4 inch color TFT LCD monitor is able to swivel 90 degrees, providing operators with easy access to the control panel while working on the machine.



### Rigid 45 degree Slant Bed

45 degree slant torque tube design bed and wide guide slide way ensure long term rigidity and machining accuracy. Also, the Slant Type structure allows easier access to the workpiece and superb chip discharge.

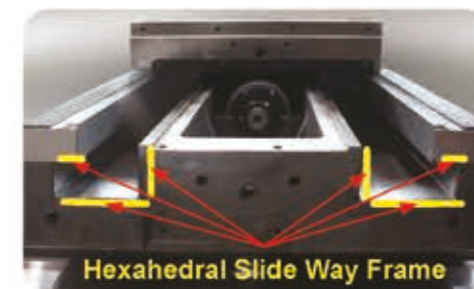


### Programmable Tailstock(Carriage direct-coupled) [Std.]

The programmable tailstock body mounted is on wide guide ways to ensure rigid work piece support.

### Pre-tensioned and Double Anchored Ballscrews

All axes ballscrews are pre-tensioned, heat treated and fixed by double anchors on both ends, providing ultimate rigidity and minimal thermal growth.

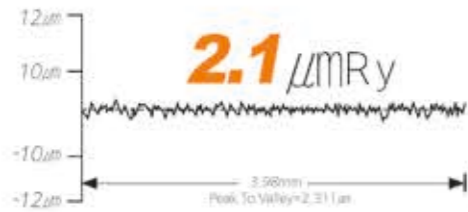


### Hexahedral Slide Way Frame (X-axis)

Wide integral way is machined from the casting, induction hardened and precision ground to ensure long-term rigidity, machining accuracy and heavy-duty machining.

### High Precision

#### Surface Roughness



Model : SL 4500

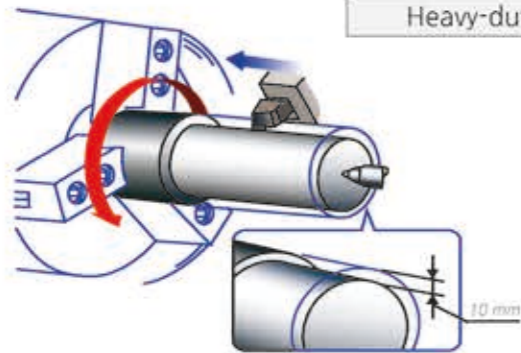
#### Roundness



Cutting condition	
Tool	Diamond tool (nose radius 0.5mm)
Material	AL150<Aluminum>
Cutting speed	230 m/min
Feedrate	0.05 mm/rev
Depth of cut	0.1 mm
Outer diameter	200 mm
Filter	1-50

### Processing Speed

#### Turning Performance (material:SM45C) SL 4500LM



Heavy-duty cutting (O.D) <32mm×32mm qualified tool>

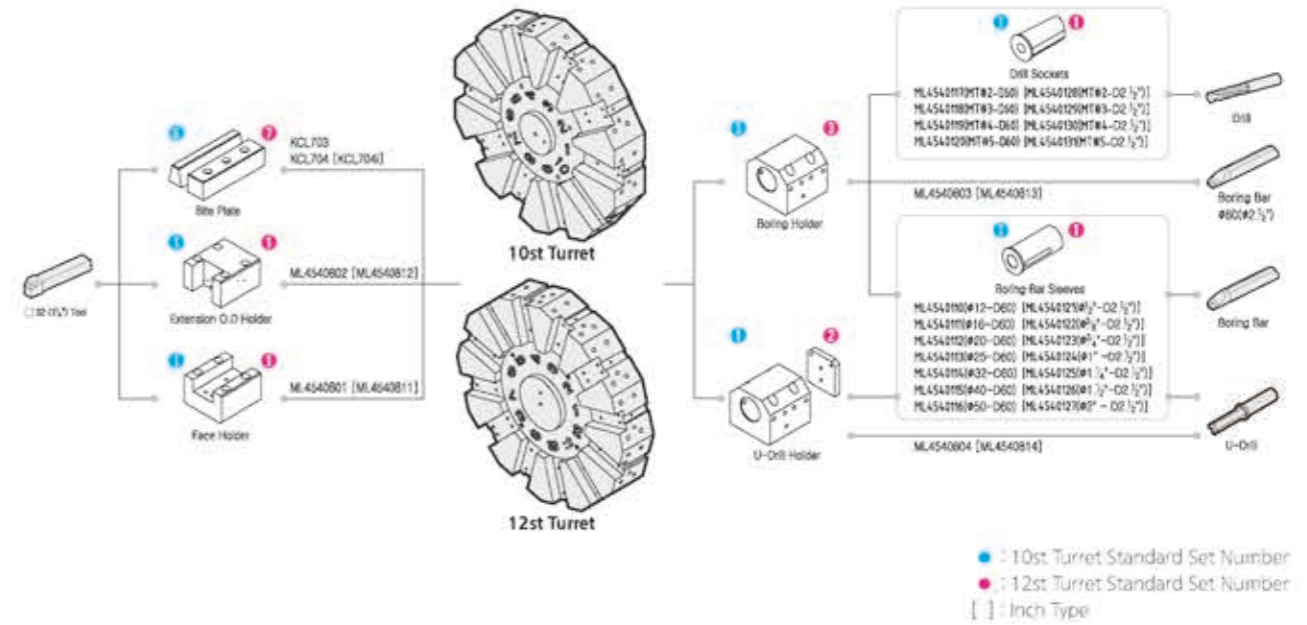
Spindle speed  
**367 rpm**

Cutting speed  
**150 m/min**

Depth of cut  
**10 mm <Spindle Load 65%>**

Feedrate  
**0.4 mm/rev**

### Tooling System



### Standard Accessories

### Optional Accessories



Automatic Lubricator



Auto Door



Tool Presetter



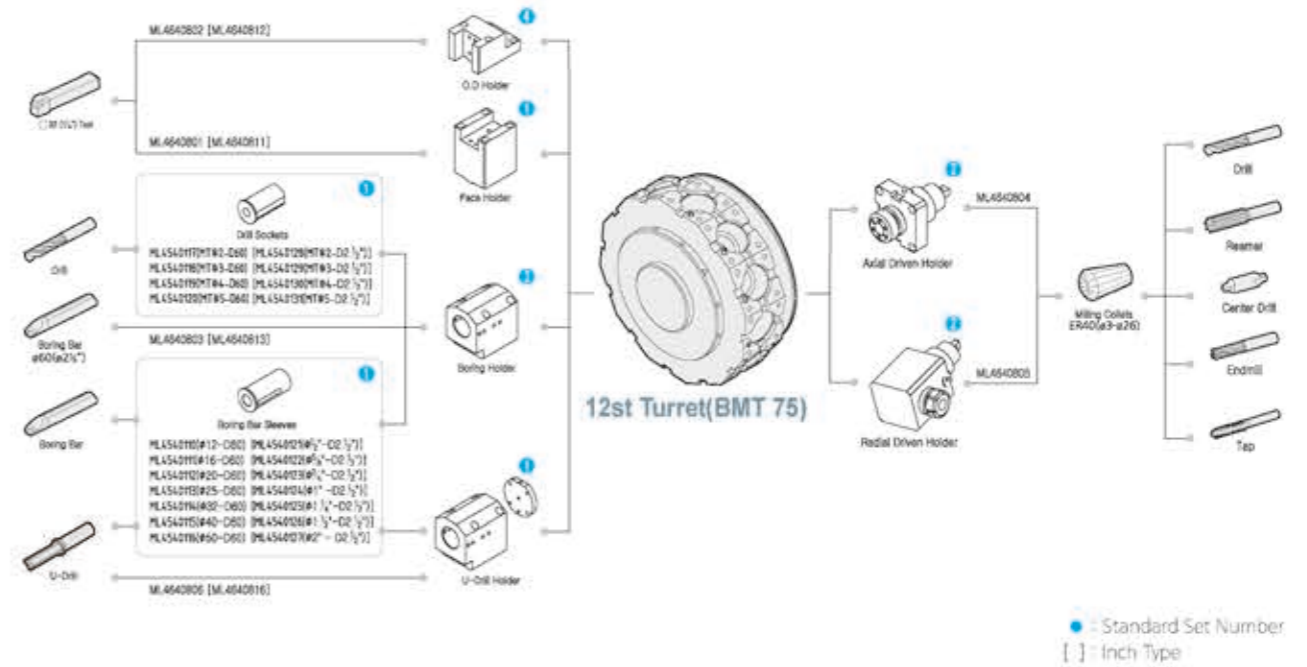
Programmable Tailstock



Chip Conveyor



Steady Rest & Preparation

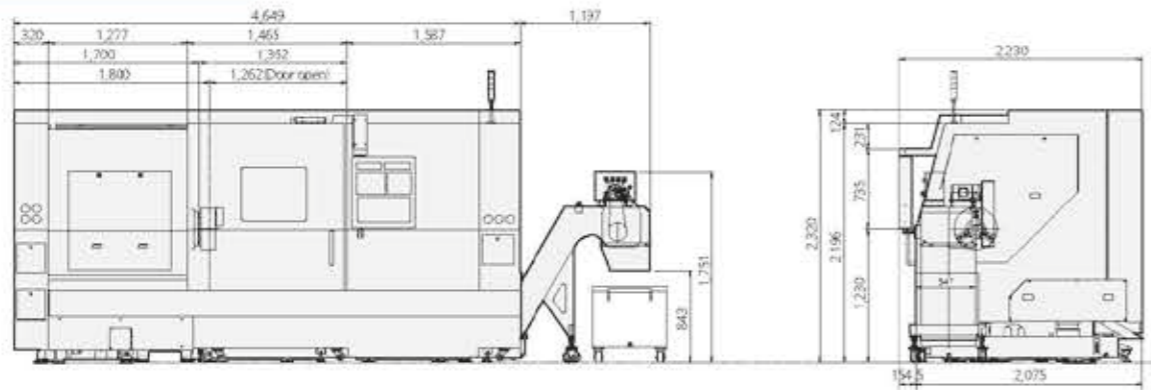




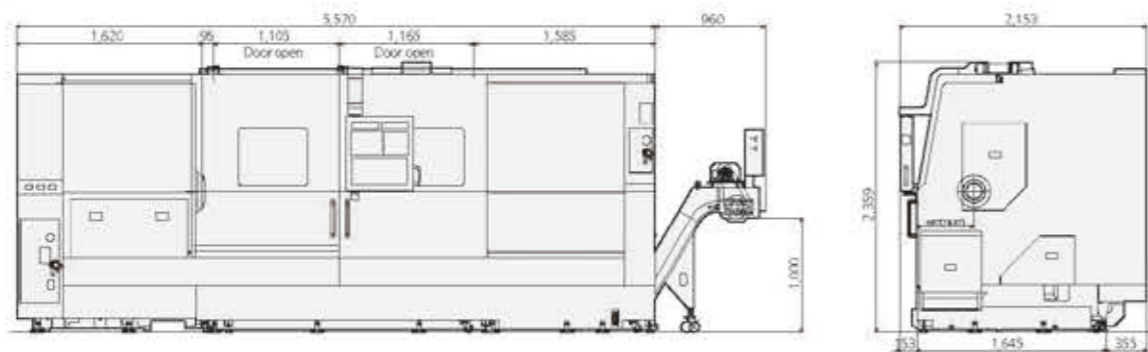
### Machine Dimensions

Unit: mm

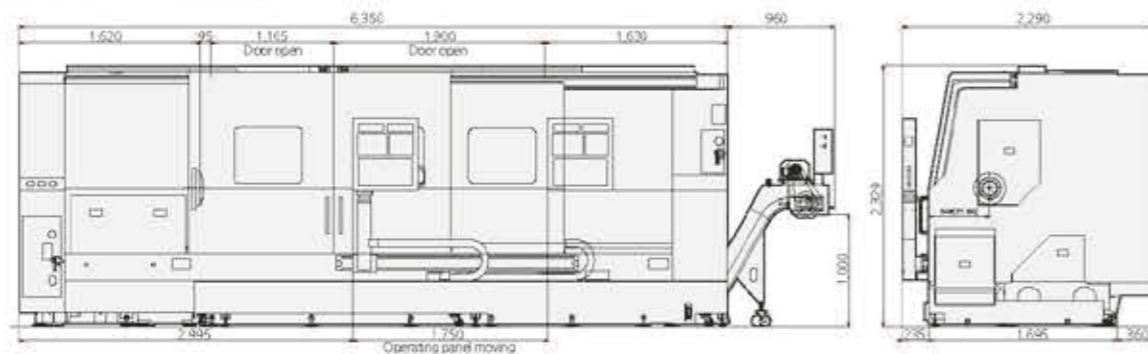
#### SL 4500



#### SL 4500X



#### SL 4500L



### Major Specifications

DESCRIPTION	SL 4500			SL 4500M				
	A type	B type	C type	A type	B type	C type		
Chuck	Chuck size	inch	18[15]"	21"	24"	18[15]"	21"	24"
Capacity	Swing over bed	mm	775	775	775	775	775	775
	Swing over cross slide	mm	630	630	530	630	630	630
	Max. turning diameter	mm	690	690	590	620	620	620
	Max. milling diameter	mm	-	-	-	712	712	712
Max. machining length	mm	1,250	1,250	1,250	1,213	1,213	1,213	1,213
	Spindle speed	rpm	1,800[2,000]	1,500	1,200	1,800[2,000]	1,500	1,200
Spindle	Spindle nose	ASA	A2-11	A2-15	A2-15	A2-11	A2-15	A2-15
	Draw tube ID	mm	117.5	140	166.5	117.5	140	166.5
	Spindle bore diameter	mm	132	181	181	132	181	181
	Motor (Cont./Max)	kW	30/37	30/37	30/37	30/37	30/37	30/37
Travels	X-axis travel	mm	350	350	350	350	350	350
	Z-axis travel	mm	1,325	1,325	1,325	1,325	1,325	1,325
	X-axis Rapid travers rate	m/min	20	20	20	20	20	20
	Z-axis Rapid travers rate	m/min	20	20	20	20	20	20
Turret	Number of tool stations	ea	12[10]	12[10]	12[10]	12 (BMT75)	12 (BMT75)	12 (BMT75)
	Turning tool shank size	mm	32	32	32	32	32	32
	Boring bar diameter	mm	60	60	60	60	60	60
	Turret index time(next station swivel time)	sec	0.20	0.20	0.20	0.20	0.20	0.20
	Rotary tool speed	rpm	-	-	-	4,000	4,000	4,000
	Rotary tool motor (Cont./Max)	kW	-	-	-	5.5/7.5	5.5/7.5	5.5/7.5
Tailstock	Quill diameter	mm	160	160	160	160	160	160
	Quill stroke	mm	150	150	150	150	150	150
Machine	Spindle taper	MT	MT5 (Built-in)	MT5 (Built-in)	MT5 (Built-in)	MT5 (Built-in)	MT5 (Built-in)	MT5 (Built-in)
	Size (with Side Chip conveyor) L×W×H	mm	4,649(5,846) × 2,230 × 2,320			4,649(5,846) × 2,230 × 2,320		
	Size (with Rear Chip conveyor) L×W×H	mm	-			-		
	weight	kg	10,000	11,000	11,000	10,500	11,500	11,500
Coolant tank capacity	liter	351	351	351	351	351	351	
ELECTRIC POWER SUPPLY	kVA/V	62/220	52/220	62/220	71/220	71/220	71/220	
CONTROLLER		FANUC, SIEMENS						

※Figures in inches are converted from metric measurements.

### Major Specifications

DESCRIPTION			SL 4500X			SL 4500XM		
			A type	B type	C type	A type	B type	C type
Chuck	Chuck size	inch	18[15]*	21*	24*	18[15]*	21*	24*
Capacity	Swing over bed	mm	775	775	775	775	775	775
	Swing over cross slide	mm	630	630	630	630	630	630
	Max. turning diameter	mm	690	690	690	620	620	620
	Max. milling diameter	mm	-	-	-	712	712	712
	Max. machining length	mm	2,255	2,255	2,255	2,255	2,255	2,255
Spindle	Spindle speed	rpm	1,800[2,000]	1,500	1,200	1,800[2,000]	1,500	1,200
	Spindle nose	ASA	A2-11	A2-15	A2-15	A2-11	A2-15	A2-15
	Draw tube ID	mm	117.5	140	166.5	117.5	140	166.5
	Spindle bore diameter	mm	132	181	181	132	181	181
	Motor (Cont./Max)	kW	30/37	30/37	30/37	30/37	30/37	30/37
Travels	X-axis travel	mm	350	350	350	350	350	350
	Z-axis travel	mm	2,330	2,330	2,330	2,330	2,330	2,330
	X-axis Rapid travers rate	m/min	20	20	20	20	20	20
	Z-axis Rapid travers rate	m/min	18	18	18	18	18	18
Turret	Number of tool stations	ea	12	12	12	12 (BMT75)	12 (BMT75)	12 (BMT75)
	Turning tool shank size	mm	32	32	32	32	32	32
	Boring bar diameter	mm	60	60	60	60	60	60
	Turret index time(next station swivel time)	sec	0.20	0.20	0.20	0.20	0.20	0.20
	Rotary tool speed	rpm	-	-	-	4,000	4,000	4,000
	Rotary tool motor (Cont./Max)	kW	-	-	-	5.5/7.5	5.5/7.5	5.5/7.5
Tailstock	Quill diameter	mm	160	160	160	160	160	160
	Quill stroke	mm	150	150	150	150	150	150
	Spindle taper	MT	MT5 (Built-in)	MT5 (Built-in)	MT5 (Built-in)	MT5 (Built-in)	MT5 (Built-in)	MT5 (Built-in)
Machine	Size (with Side Chip conveyor) LxWxH	mm	5,570(6,530) × 2,153 × 2,359			5,570(6,530) × 2,153 × 2,359		
	Size (with Rear Chip conveyor) LxWxH	mm	-			-		
	weight	kg	13,000	13,000	13,000	13,000	13,000	13,000
	Coolant tank capacity	Liter	400	400	400	400	400	400
ELECTRIC POWER SUPPLY	kVA/V	59/220	59/220	59/220	60/220	60/220	60/220	
CONTROLLER		FANUC, SIEMENS						

\*Figures in inches are converted from metric measurements.

### Major Specifications

DESCRIPTION			SL 4500L			SL 4500LM		
			A type	B type	C type	A type	B type	C type
Chuck	Chuck size	inch	18[15]*	21*	24*	18[15]*	21*	24*
Capacity	Swing over bed	mm	775	775	775	775	775	775
	Swing over cross slide	mm	630	630	630	630	630	630
	Max. turning diameter	mm	690	690	690	620	620	620
	Max. milling diameter	mm	-	-	-	712	712	712
	Max. machining length	mm	3,055	3,055	3,055	3,055	3,055	3,055
Spindle	Spindle speed	rpm	1,800[2,000]	1,500	1,200	1,800[2,000]	1,500	1,200
	Spindle nose	ASA	A2-11	A2-15	A2-15	A2-11	A2-15	A2-15
	Draw tube ID	mm	117.5	140	166.5	117.5	140	166.5
	Spindle bore diameter	mm	132	181	181	132	181	181
	Motor (Cont./Max)	kW	30/37	30/37	30/37	30/37	30/37	30/37
Travels	X-axis travel	mm	350	350	350	350	350	350
	Z-axis travel	mm	3,130	3,130	3,130	3,130	3,130	3,130
	X-axis Rapid travers rate	m/min	20	20	20	20	20	20
	Z-axis Rapid travers rate	m/min	10	10	10	10	10	10
Turret	Number of tool stations	ea	12	12	12	12 (BMT75)	12 (BMT75)	12 (BMT75)
	Turning tool shank size	mm	32	32	32	32	32	32
	Boring bar diameter	mm	60	60	60	60	60	60
	Turret index time(next station swivel time)	sec	0.20	0.20	0.20	0.20	0.20	0.20
	Rotary tool speed	rpm	-	-	-	4,000	4,000	4,000
	Rotary tool motor (Cont./Max)	kW	-	-	-	5.5/7.5	5.5/7.5	5.5/7.5
Tailstock	Quill diameter	mm	160	160	160	160	160	160
	Quill stroke	mm	150	150	150	150	150	150
	Spindle taper	MT	MT5 (Built-in)	MT5 (Built-in)	MT5 (Built-in)	MT5 (Built-in)	MT5 (Built-in)	MT5 (Built-in)
Machine	Size (with Side Chip conveyor) LxWxH	mm	6,350(7,310) × 2,290 × 2,329			6,350(7,310) × 2,290 × 2,329		
	Size (with Rear Chip conveyor) LxWxH	mm	-			-		
	weight	kg	20,000	20,000	20,000	20,000	20,000	20,000
	Coolant tank capacity	Liter	600	600	600	600	600	600
ELECTRIC POWER SUPPLY	kVA/V	59/220	59/220	59/220	60/220	60/220	60/220	
CONTROLLER		FANUC, SIEMENS						

\*Figures in inches are converted from metric measurements.





## Fanuc Manual Guide i

### Erstellen Sie Ihre Teileprogramme in nur wenigen Schritten

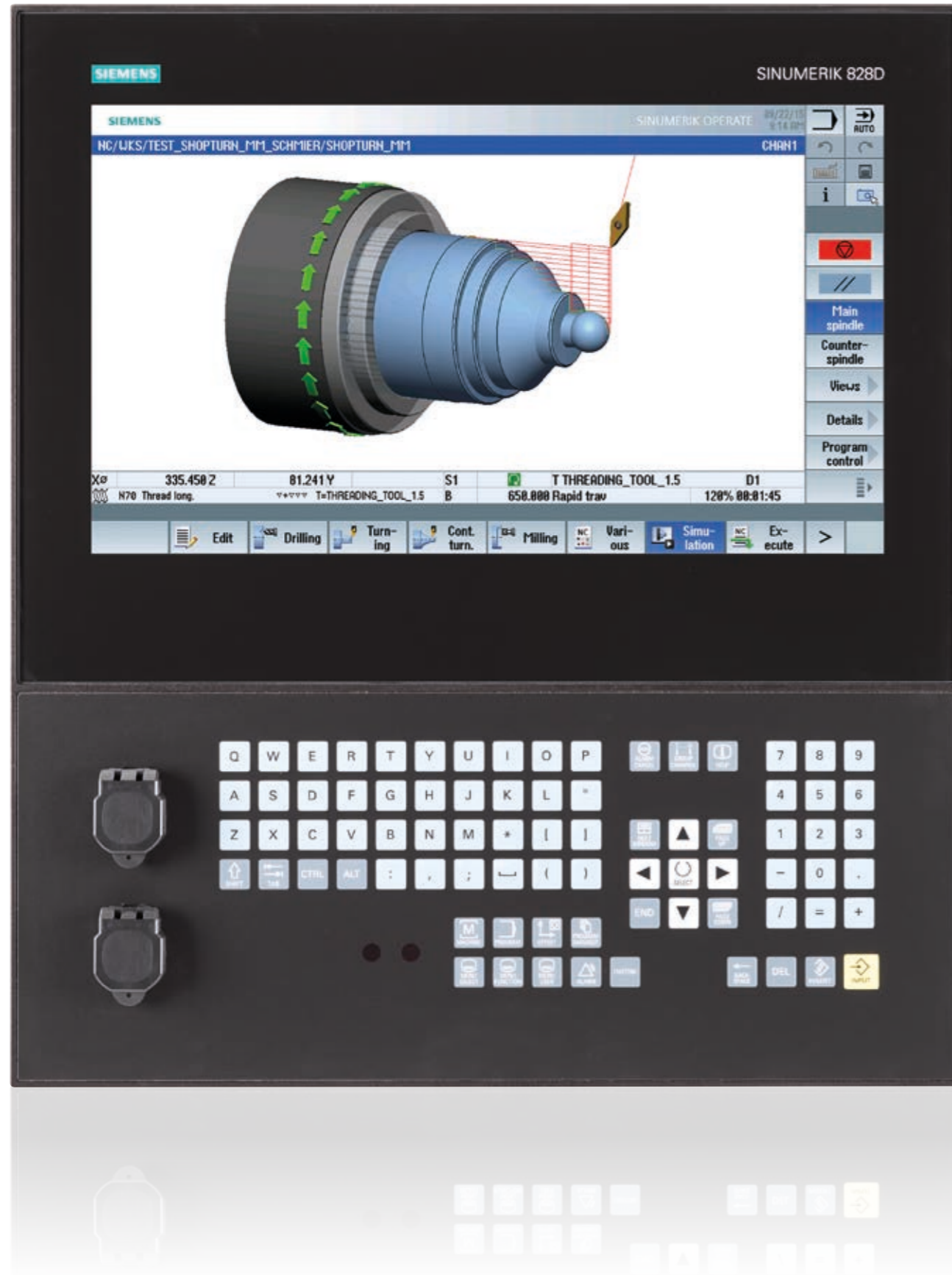
Reduzieren Sie den Zeitaufwand bei der Überführung Ihrer Zeichnungen in die Produktion:  
Mit dem FANUC MANUAL GUIDE i lassen sich sowohl einfache als auch hoch komplizierte Maschinenzyklen inklusive Dreh-, Fräs-, Bohr- und Messzyklen schnell und einfach umsetzen. Dabei unterstützt die Software Sie durch 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

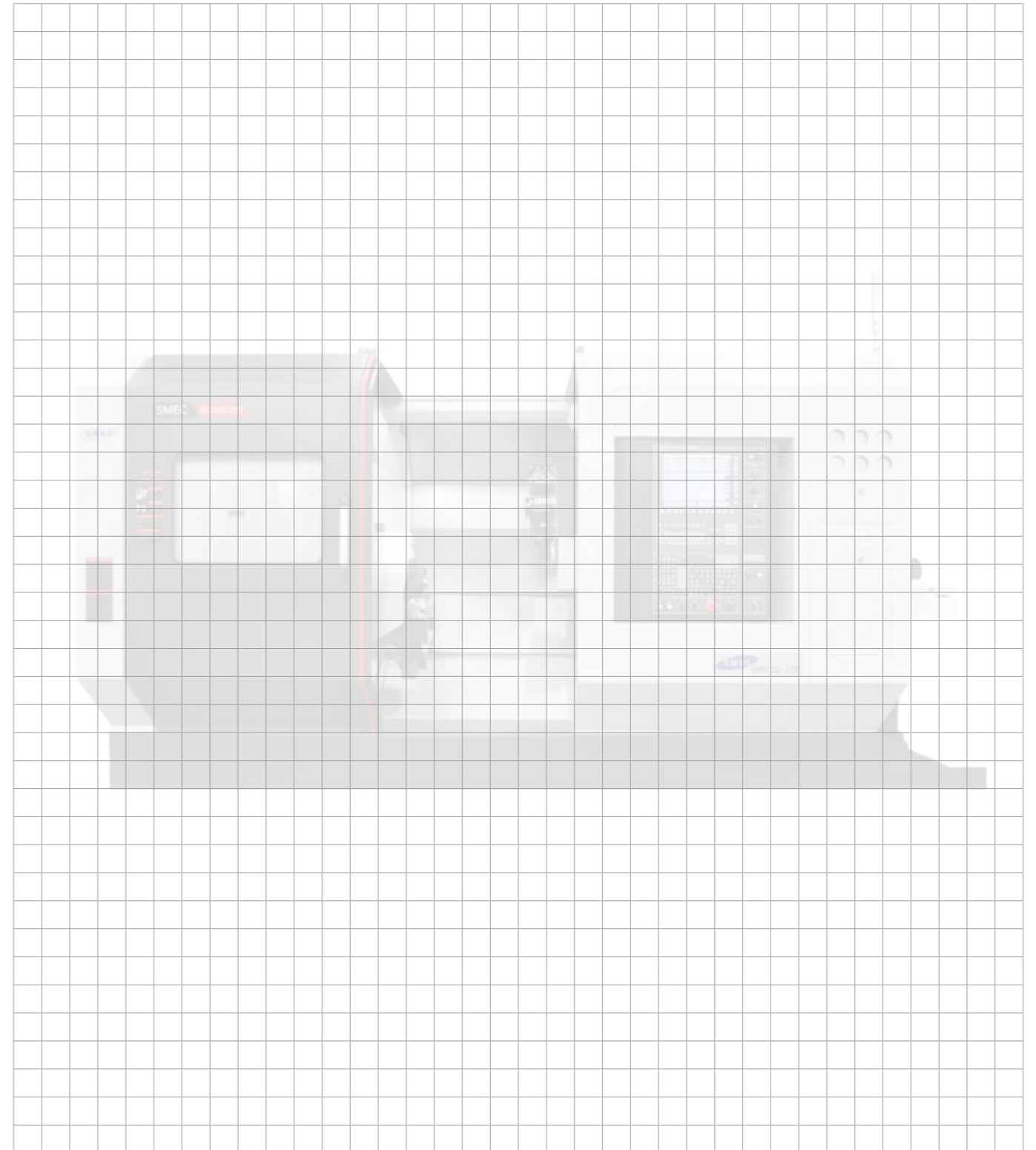
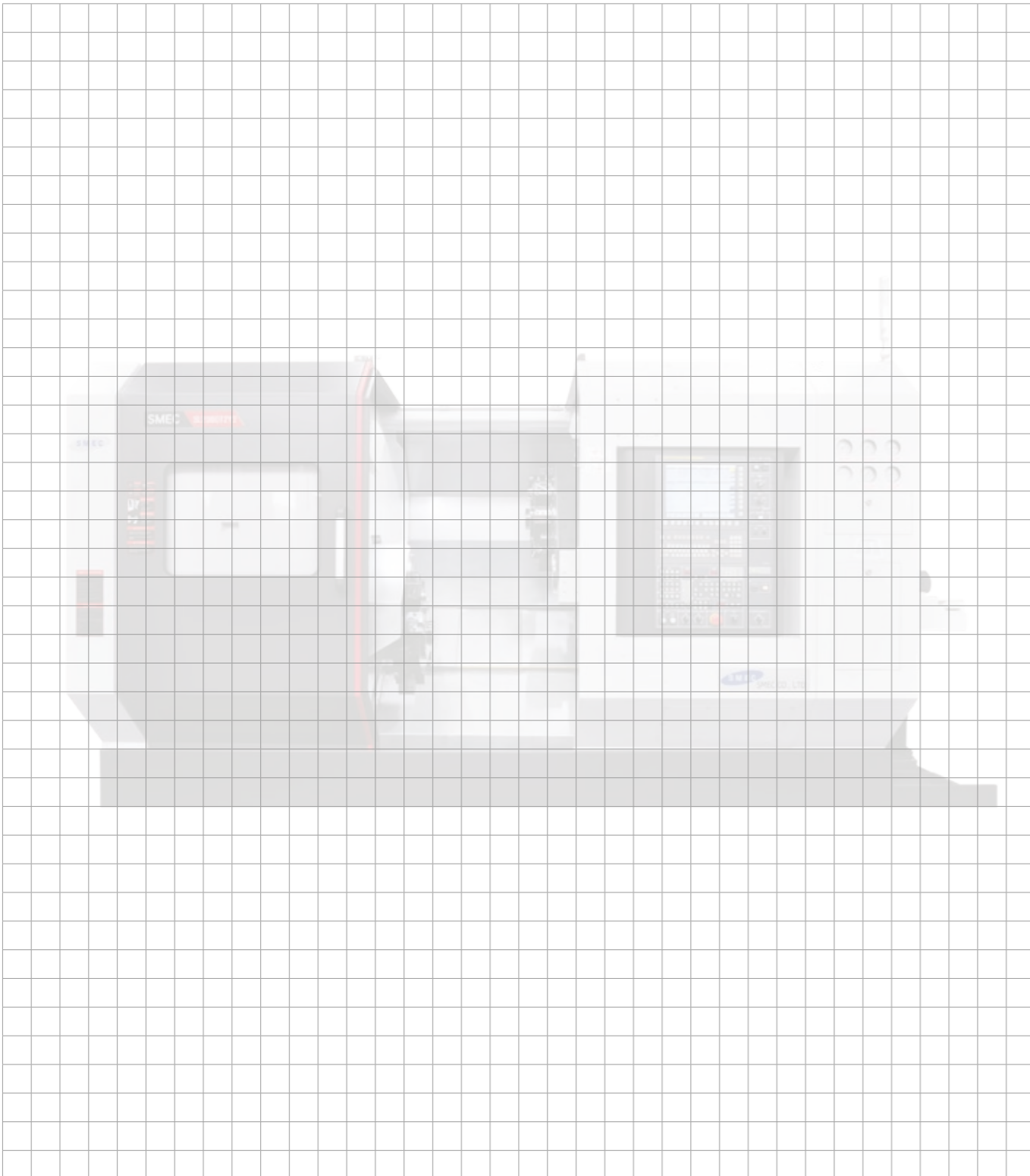
Robuste MultiTouch-Bedienung  
kombiniert mit SideScreen

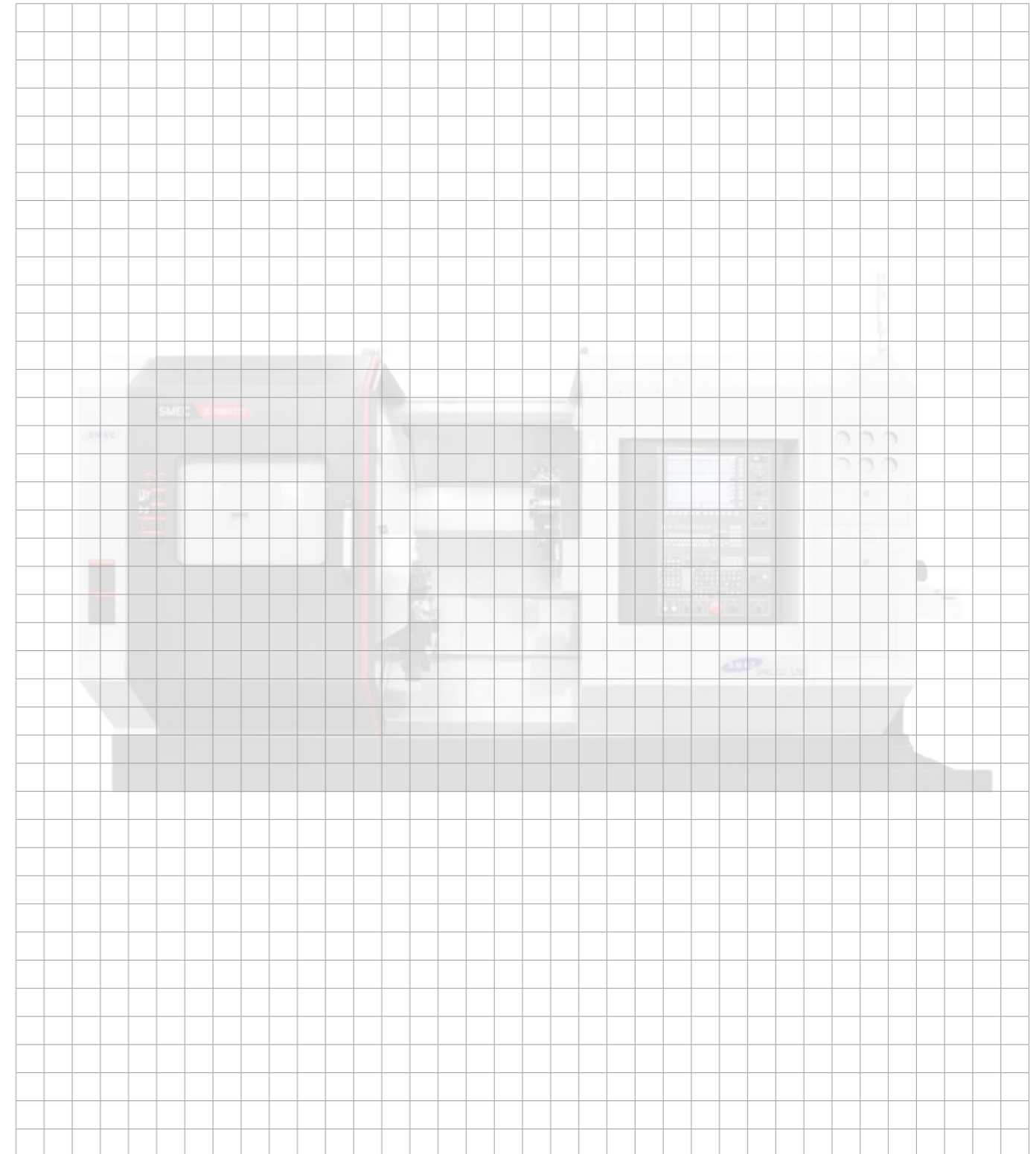
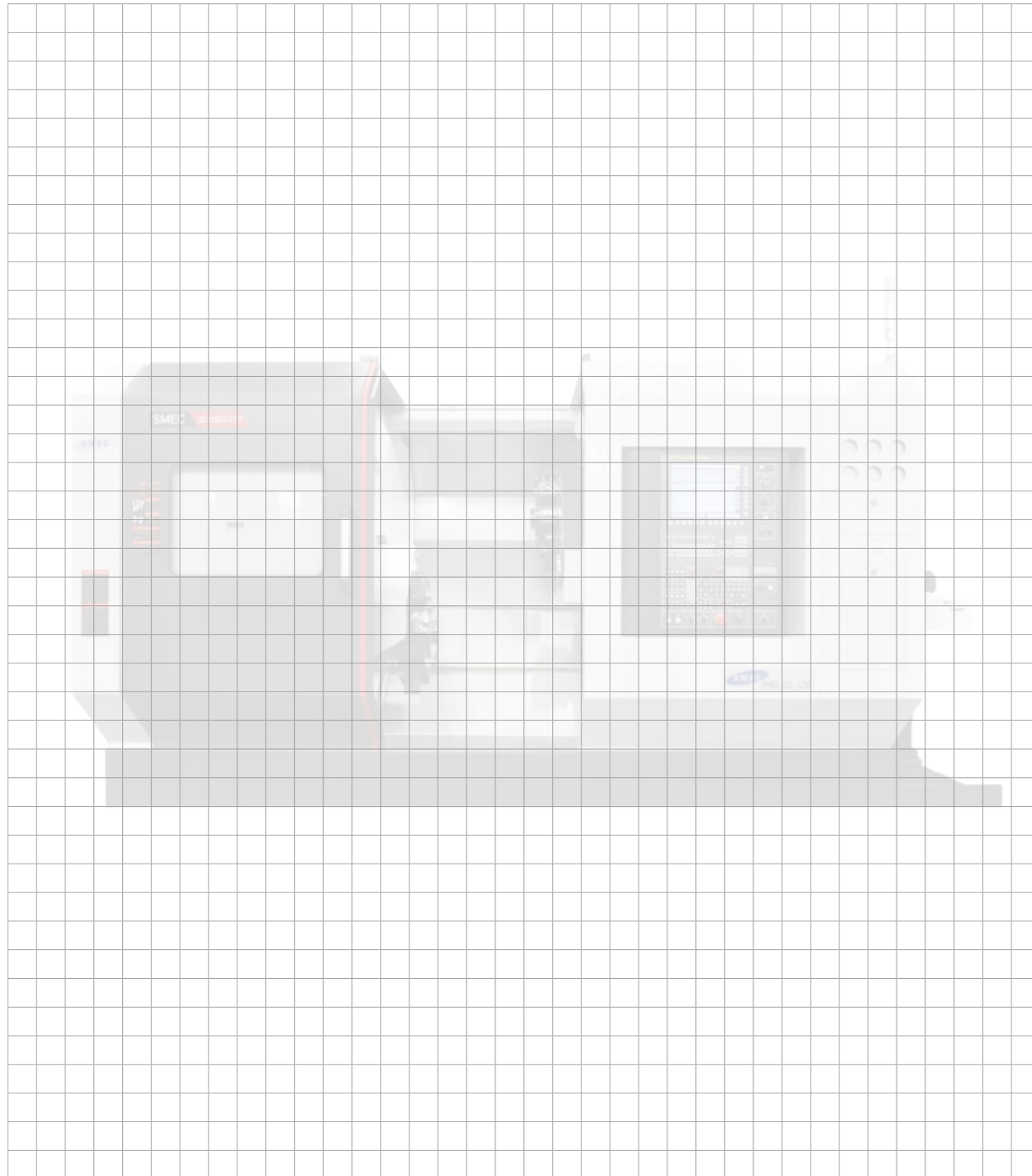
Für Werkstatt, Lohnfertigung und Großserienfertigung sind hochproduktive Automatisierungslösungen gefragt, die den Weg in die Digitalisierung begleiten.

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!

Tel. 49 (0) 9672 92415-730

Ihr Partner in  
**Deutschland  
& Österreich**



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