

# **SMEC**

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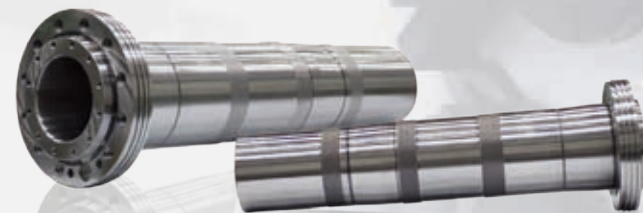
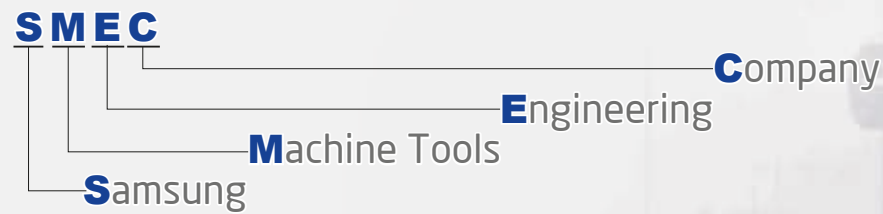
## **SL 6500 series**

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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 6500/6500X/6500L/6500XL SL 6500M/6500XM/6500LM/6500XLM

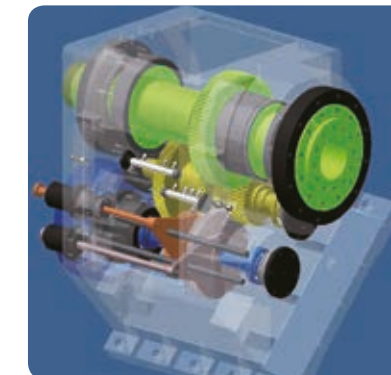
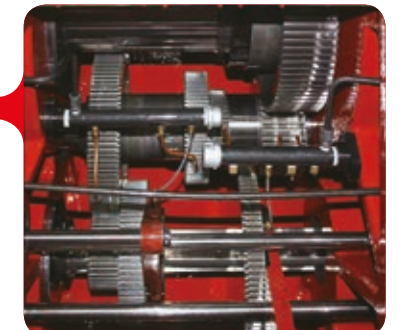
**Strongest in class with superb structural design**  
**Simultaneous heavy duty and precision turning**

- 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

### Main Spindle Motor and Geared Headstock

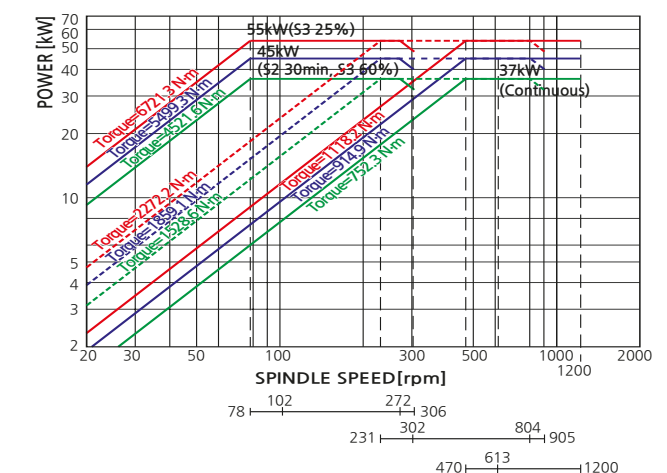
Power cutting of maximum torque 6721 N.m can be performed through three-speed geared headstock.



### One Body Spindle and Headstock Construction for Minimal Thermal Expansion

By developing the main spindle and the mission simultaneously, the cooling efficiency of the main spindle and the gear was improved. The belt structure was simplified by unifying the mission with the main spindle, and the vibration and noise caused by the belt connection were reduced.

### Spindle Power & Torque Diagram SL 6500 24" Chuck



## An innovative high precision, heavy duty CNC Lathe, integrated with all of SMEC's advanced technology - SL 6500 series

Spindle speed  
**1,500 rpm** (A Type 21")  
**1,200 rpm** (B Type 24")

Spindle motor(cont./Max)  
**37/55 kW**

Rapid traverse(X/Z)  
**12/18 m/min** (SL 6500[M])  
**12/15 m/min** (SL 6500X[M])  
**12/10 m/min** (SL 6500L/XL[M])

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

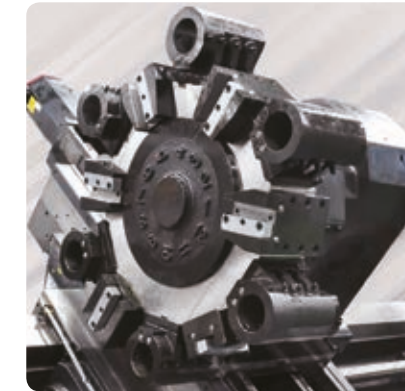
Max. machining length  
**1,000 mm** (SL 6500[M])  
**2,000 mm** (SL 6500X[M])  
**3,200 mm** (SL 6500L[M])  
**5,050 mm** (SL 6500XL[M])

Max. machining diameter  
**900 mm**

### 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 6500 (High Speed Servo Index Hydraulic Turret)



Indexing Time  
**0.25 sec(60 Hz)**  
Number of tool positions  
**12 stations**

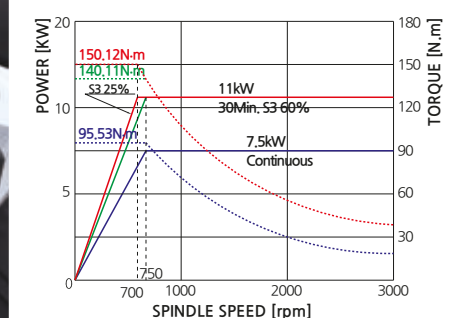
### High Speed, Heavy Duty Servo Turret

Driven by a high torque servo motor, the 12-station heavy -duty turret can accept tools on both left and right side of each station. Turret indexing (repeatability  $\pm 0.01$ ) is non-stop, bi-directional with a fast 0.25 second next station index time. Large diameter ( $\varnothing 287$ ) precision Curvic coupling with 18,225kgf clamping force enables precision as well as heavy-duty cutting.

### SL 6500M (BMT High Speed Turret)



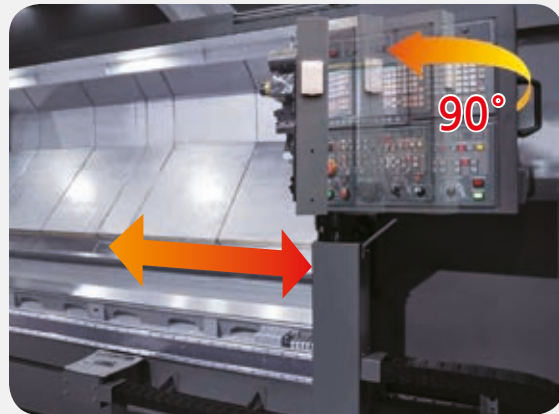
### Turret Torque Diagram



Indexing Time  
**0.25 sec(60 Hz)** Number of tool positions  
**12 stations** Milling Spindle Speed  
**3,000 rpm** Tool Holder  
**BMT 85**

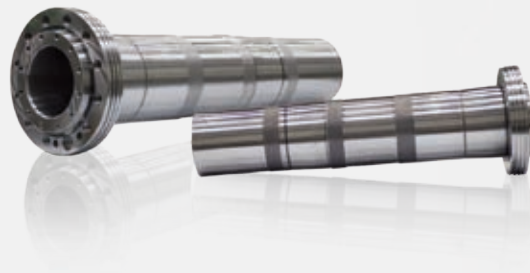
### BMT Milling Turret (M Type)

SL 6500M 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 0.25 second next station index time.



### Centralized Operation Panel

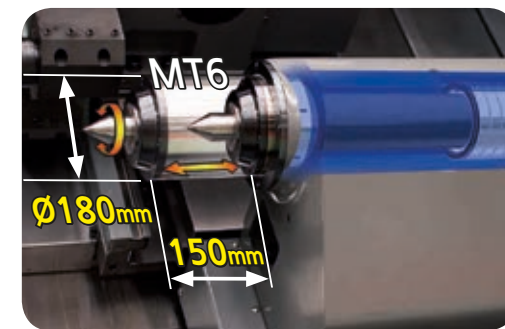
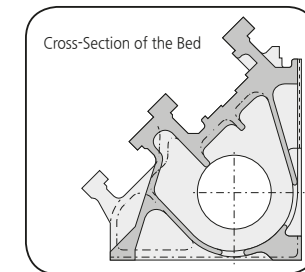
The centralized operation panel with its 10.4 inch color TFT LCD monitor is able to swivel 90 degrees, providing operators with easy access to the control panel while working on the machine.



### 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 for easier access to the workpiece and superb chip discharge.

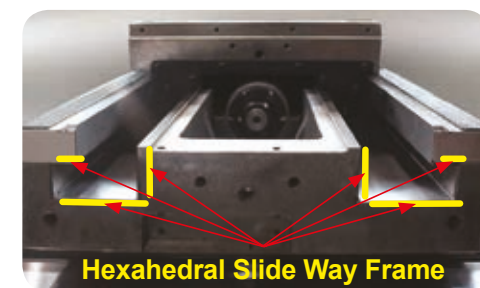


### Programmable Tailstock(Carriage direct-coupled) [Std.]

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.

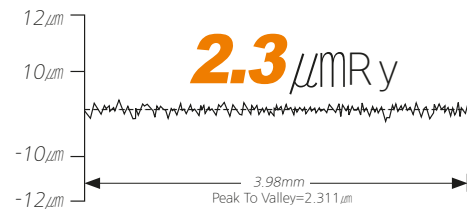


### Hexahedral Slide Way Frame (X-axis)

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 6500L

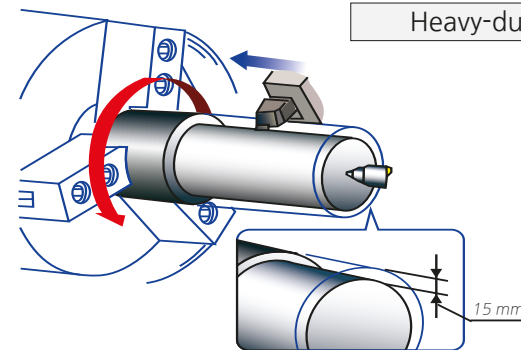
### Roundness



| Cutting condition |                                     |
|-------------------|-------------------------------------|
| Tool              | Diamond tool<br><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 6500L



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

Spindle speed

**367 rpm**

Cutting speed

**150 m/min**

Depth of cut

**15 mm <Spindle Load 65%>**

Feedrate

**0.4 mm/rev**

## Standard Accessories

## Optional Accessories



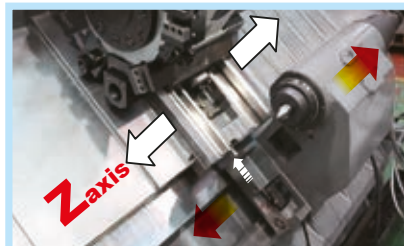
Automatic Lubricator



Auto Door



Tool Presetter



Programmable Tailstock



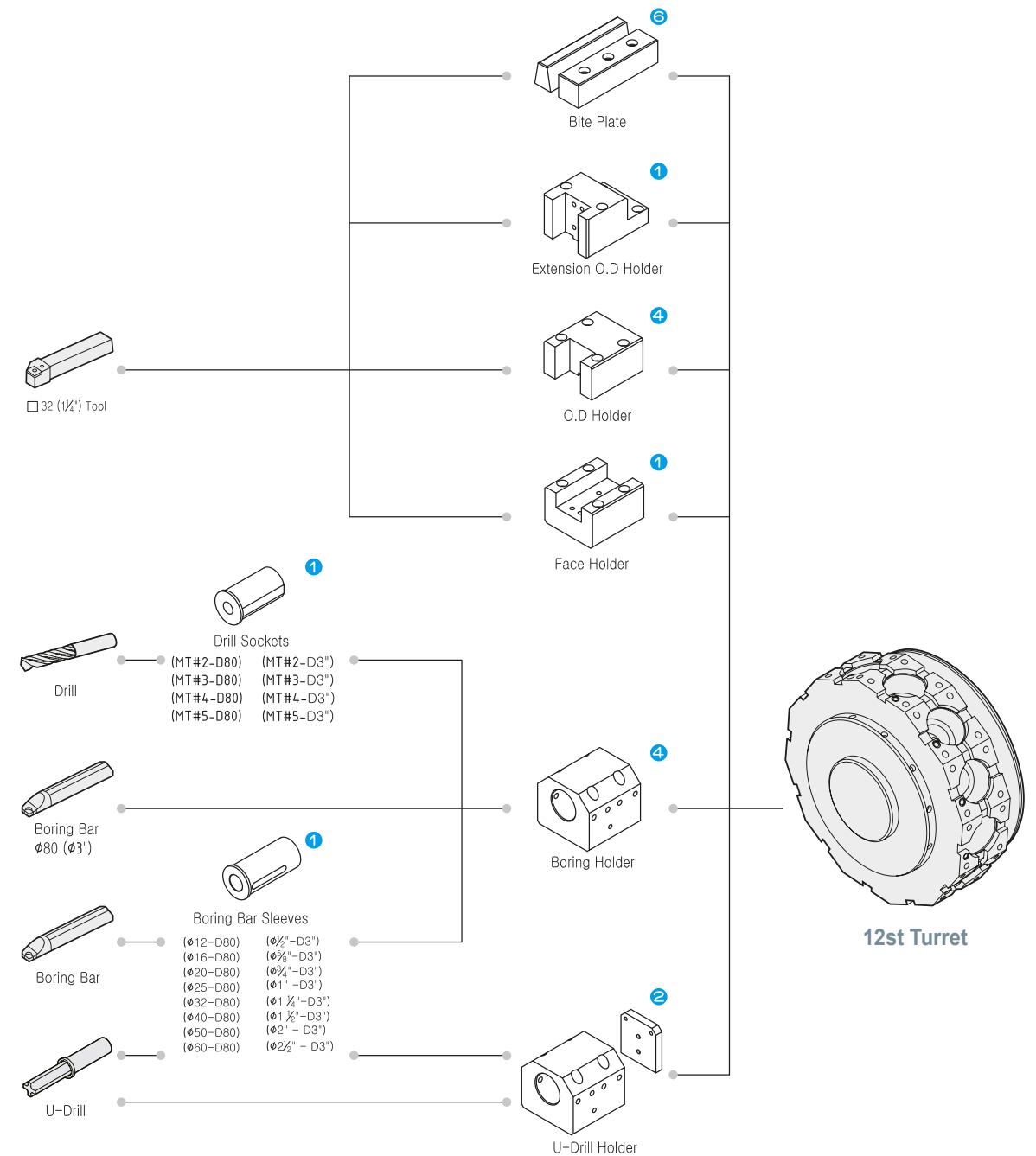
Chip Conveyor



Steady Rest & Preparation

## Tooling System

### SL 6500/6500X/6500L/6500XL



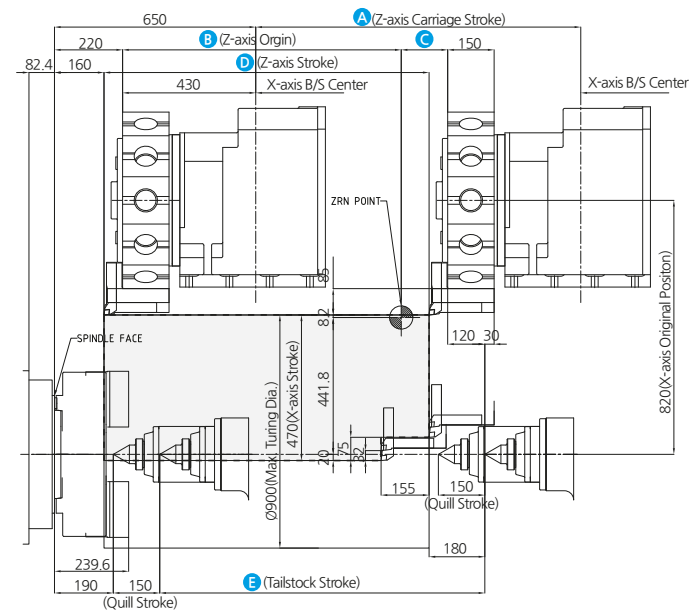
● : Standard Set Numbers



## Work Range

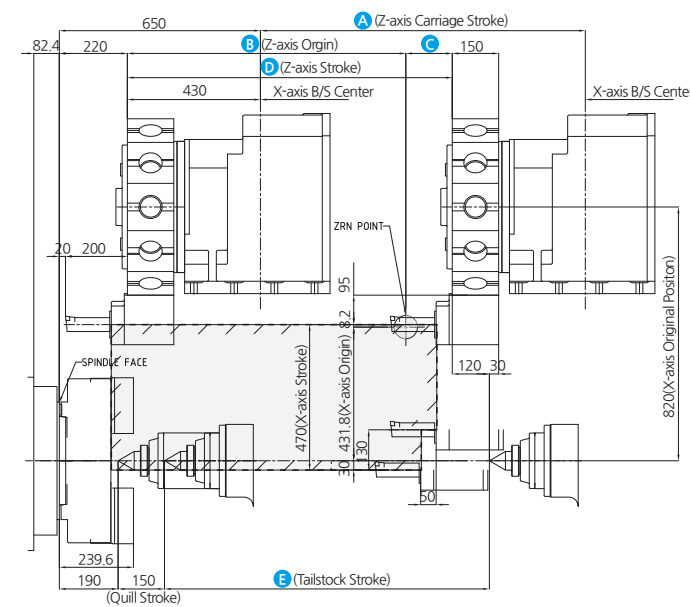
Unit : mm

### FACE CUT



|   | SL 6500 | SL 6500X | SL 6500L | SL 6500XL |
|---|---------|----------|----------|-----------|
| A | 1,050mm | 2,050mm  | 3,270mm  | 5,100mm   |
| B | 900mm   | 1,900mm  | 3,070mm  | 4,900mm   |
| C | 150mm   | 150mm    | 200mm    | 200mm     |
| D | 1,050mm | 2,050mm  | 3,270mm  | 5,100mm   |
| E | 1,050mm | 2,050mm  | 3,270mm  | 5,100mm   |

### BORING CUT

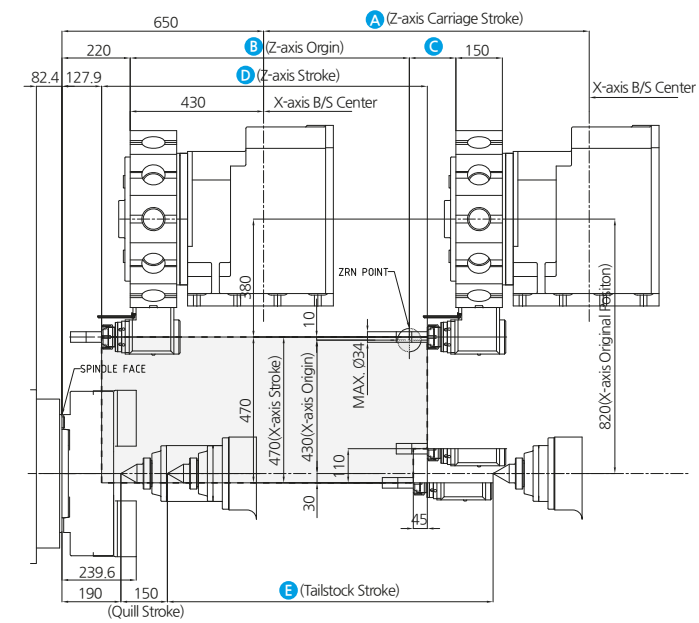


|   | SL 6500 | SL 6500X | SL 6500L | SL 6500XL |
|---|---------|----------|----------|-----------|
| A | 1,050mm | 2,050mm  | 3,270mm  | 5,100mm   |
| B | 900mm   | 1,900mm  | 3,070mm  | 4,900mm   |
| C | 150mm   | 150mm    | 200mm    | 200mm     |
| D | 1,050mm | 2,050mm  | 3,270mm  | 5,100mm   |
| E | 1,050mm | 2,050mm  | 3,270mm  | 5,100mm   |

## Work Range

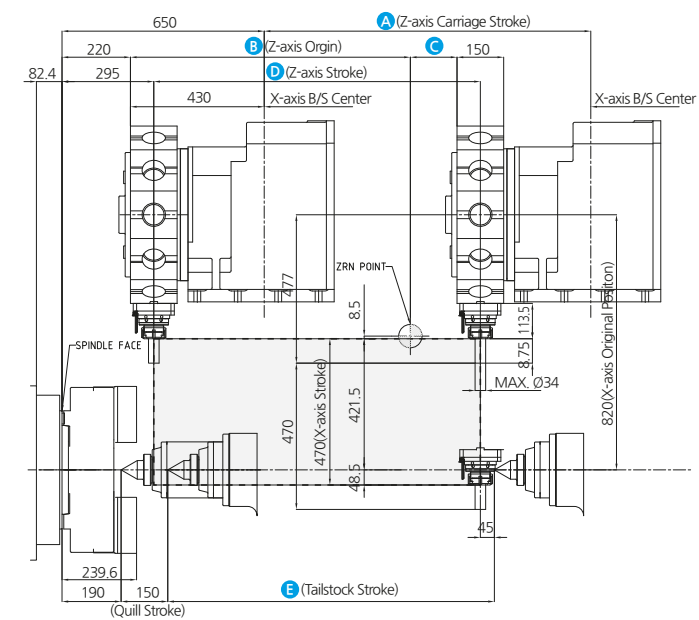
Unit : mm

### BORING & RADIAL DRIVEN



|   | SL 6500M | SL 6500XM | SL 6500LM | SL 6500XLM |
|---|----------|-----------|-----------|------------|
| A | 1,050mm  | 2,050mm   | 3,270mm   | 5,100mm    |
| B | 900mm    | 1,900mm   | 3,070mm   | 4,900mm    |
| C | 150mm    | 150mm     | 200mm     | 200mm      |
| D | 1,050mm  | 2,050mm   | 3,270mm   | 5,100mm    |
| E | 1,050mm  | 2,050mm   | 3,270mm   | 5,100mm    |

### FACE & AXIAL DRIVEN

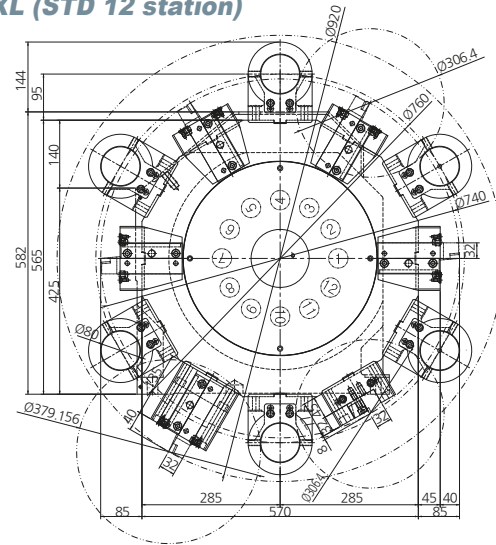


|   | SL 6500M | SL 6500XM | SL 6500LM | SL 6500XLM |
|---|----------|-----------|-----------|------------|
| A | 1,050mm  | 2,050mm   | 3,270mm   | 5,100mm    |
| B | 900mm    | 1,900mm   | 3,070mm   | 4,900mm    |
| C | 150mm    | 150mm     | 200mm     | 200mm      |
| D | 1,050mm  | 2,050mm   | 3,270mm   | 5,100mm    |
| E | 1,050mm  | 2,050mm   | 3,270mm   | 5,100mm    |

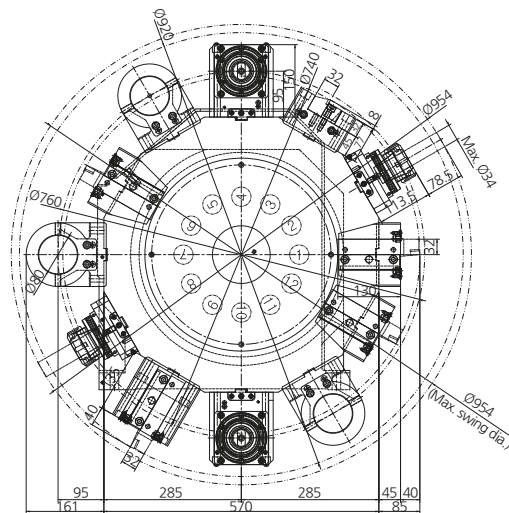
## Turret Head Interference

Unit : mm

### SL 6500/6500X/6500L/6500XL (STD 12 station)



### SL 6500M/6500XM/6500LM/6500XLM (BMT 85)



## Standard Accessories

- 21" hollow 3 jaws chuck (A Type)
- 24" hollow 3 jaws chuck (B Type)
- Chuck clamp confirmation
- Chuck clamp foot switch
- Chuck pressure switch
- Coolant system
- Door interlock
- Full splash guard with coolant tank
- Jaw (soft 3set, hard 1set)
- Leveling unit
- Manual/Part list (1set)
- Patrol lamp (3 colors)
- Safety precaution name plate
- Spindle orientation
- Tailstock (programmable)
- Tool box
- Tool holders
- Work light (LED lamp)

## Optional Accessories

- Air blower
- Air conditioners (electric cabinet)
- Air gun
- Auto door
- Bar Feeder Interface
- Chip bucket
- Chip conveyor
- Coolant blower
- Coolant chiller
- Coolant gun
- Coolant level switch
- Counter (total, multi, tool, work)
- Dual pressure chucking
- Oil mist collector
- Oil skimmer
- Robot interface
- Special chuck
- Steady rest (single, dual)
- Tool presetter (manual/auto)
- Transformer

## Major Specifications

| DESCRIPTION           |                                             |       | SL 6500                      |                | SL 6500M                     |                |
|-----------------------|---------------------------------------------|-------|------------------------------|----------------|------------------------------|----------------|
|                       |                                             |       | A type                       | B type         | A type                       | B type         |
| Chuck                 | Chuck size                                  | inch  | 21"                          | 24"            | 21"                          | 24"            |
| Capacity              | Swing over bed                              | mm    | 1,030                        | 1,030          | 1,030                        | 1,030          |
|                       | Swing over cross slide                      | mm    | 800                          | 800            | 800                          | 800            |
|                       | Max. turning diameter                       | mm    | 900                          | 900            | 900                          | 900            |
|                       | Max. milling diameter                       | mm    | -                            | -              | 843                          | 843            |
|                       | Max. machining length                       | mm    | 1,000                        | 1,000          | 1,000                        | 1,000          |
| Spindle               | Spindle speed                               | rpm   | 1,500                        | 1,200          | 1,500                        | 1,200          |
|                       | Spindle nose                                | ASA   | A2-15                        | A2-15          | A2-15                        | A2-15          |
|                       | Draw tube ID                                | mm    | 140                          | 140            | 140                          | 140            |
|                       | Spindle bore diameter                       | mm    | 152                          | 152            | 152                          | 152            |
|                       | Spindle motor (Cont./Max)                   | kW    | 37/55                        | 37/55          | 37/55                        | 37/55          |
| Travels               | X-axis travel                               | mm    | 470                          | 470            | 470                          | 470            |
|                       | Z-axis travel                               | mm    | 1,050                        | 1,050          | 1,050                        | 1,050          |
|                       | X-axis Rapid traverse rate                  | m/min | 12                           | 12             | 12                           | 12             |
|                       | Z-axis Rapid traverse rate                  | m/min | 18                           | 18             | 18                           | 18             |
| Turret                | Number of tool stations                     | ea    | 12                           | 12             | 12 (BMT85)                   | 12 (BMT85)     |
|                       | Turning tool shank size                     | mm    | 32                           | 32             | 32                           | 32             |
|                       | Boring bar diameter                         | mm    | 80                           | 80             | 80                           | 80             |
|                       | Turret index time(next station swivel time) | sec   | 0.25                         | 0.25           | 0.25                         | 0.25           |
|                       | Rotary tool speed                           | rpm   | -                            | -              | 3,000                        | 3,000          |
|                       | Rotary tool motor (Cont./Max)               | kW    | -                            | -              | 7.5/11                       | 7.5/11         |
| Tailstock             | Quill diameter                              | mm    | 180                          | 180            | 180                          | 180            |
|                       | Quill stroke                                | mm    | 150                          | 150            | 150                          | 150            |
|                       | Spindle taper                               | MT    | MT6 (Built-in)               | MT6 (Built-in) | MT6 (Built-in)               | MT6 (Built-in) |
| Machine               | Size (with Side Chip conveyor) LxWxH        | mm    | 5,158(6,171) × 2,714 × 2,597 |                | 5,158(6,171) × 2,714 × 2,597 |                |
|                       | Size (with Rear Chip conveyor) LxWxH        | mm    | -                            |                | -                            |                |
|                       | weight                                      | kg    | 16,500                       | 16,500         | 16,500                       | 16,500         |
|                       | Coolant tank capacity                       | Liter | 400                          | 400            | 400                          | 400            |
| ELECTRIC POWER SUPPLY |                                             |       | kVA/V                        | 68/220         | 68/220                       | 69/220         |
| CONTROLLER            |                                             |       | FANUC, SIEMENS               |                |                              |                |

※Figures in inches are converted from metric measurements.

Major Specifications

| DESCRIPTION           |                                             |       | SL 6500X                     |                | SL 6500XM                    |                |
|-----------------------|---------------------------------------------|-------|------------------------------|----------------|------------------------------|----------------|
|                       |                                             |       | A type                       | B type         | A type                       | B type         |
| Chuck                 | Chuck size                                  | inch  | 21"                          | 24"            | 21"                          | 24"            |
| Capacity              | Swing over bed                              | mm    | 1,030                        | 1,030          | 1,030                        | 1,030          |
|                       | Swing over cross slide                      | mm    | 800                          | 800            | 800                          | 800            |
|                       | Max. turning diameter                       | mm    | 900                          | 900            | 900                          | 900            |
|                       | Max. milling diameter                       | mm    | -                            | -              | 843                          | 843            |
|                       | Max. machining length                       | mm    | 2,000                        | 2,000          | 2,000                        | 2,000          |
| Spindle               | Spindle speed                               | rpm   | 1,500                        | 1,200          | 1,500                        | 1,200          |
|                       | Spindle nose                                | ASA   | A2-15                        | A2-15          | A2-15                        | A2-15          |
|                       | Draw tube ID                                | mm    | 140                          | 140            | 140                          | 140            |
|                       | Spindle bore diameter                       | mm    | 152                          | 152            | 152                          | 152            |
|                       | Spindle motor (Cont./Max)                   | kW    | 37/55                        | 37/55          | 37/55                        | 37/55          |
| Travels               | X-axis travel                               | mm    | 470                          | 470            | 470                          | 470            |
|                       | Z-axis travel                               | mm    | 2,050                        | 2,050          | 2,050                        | 2,050          |
|                       | X-axis Rapid traverse rate                  | m/min | 12                           | 12             | 12                           | 12             |
|                       | Z-axis Rapid traverse rate                  | m/min | 15                           | 15             | 15                           | 15             |
| Turret                | Number of tool stations                     | ea    | 12                           | 12             | 12 (BMT85)                   | 12 (BMT85)     |
|                       | Turning tool shank size                     | mm    | 32                           | 32             | 32                           | 32             |
|                       | Boring bar diameter                         | mm    | 80                           | 80             | 80                           | 80             |
|                       | Turret index time(next station swivel time) | sec   | 0.25                         | 0.25           | 0.25                         | 0.25           |
|                       | Rotary tool speed                           | rpm   | -                            | -              | 3,000                        | 3,000          |
|                       | Rotary tool motor (Cont./Max)               | kW    | -                            | -              | 7.5/11                       | 7.5/11         |
| Tailstock             | Quill diameter                              | mm    | 180                          | 180            | 180                          | 180            |
|                       | Quill stroke                                | mm    | 150                          | 150            | 150                          | 150            |
|                       | Spindle taper                               | MT    | MT6 (Built-in)               | MT6 (Built-in) | MT6 (Built-in)               | MT6 (Built-in) |
| Machine               | Size (with Side Chip conveyor) LxWxH        | mm    | 6,203(7,216) × 2,910 × 2,520 |                | 6,203(7,216) × 2,910 × 2,520 |                |
|                       | Size (with Rear Chip conveyor) LxWxH        | mm    | -                            |                | -                            |                |
|                       | weight                                      | kg    | 19,000                       | 19,000         | 19,000                       | 19,000         |
|                       | Coolant tank capacity                       | Liter | 500                          | 500            | 500                          | 500            |
| ELECTRIC POWER SUPPLY |                                             |       | 68/220                       | 68/220         | 69/220                       | 69/220         |
| CONTROLLER            |                                             |       | FANUC, SIEMENS               |                |                              |                |

※Figures in inches are converted from metric measurements.

Major Specifications

| DESCRIPTION           |                                             |       | SL 6500L                     |                | SL 6500LM                    |                |
|-----------------------|---------------------------------------------|-------|------------------------------|----------------|------------------------------|----------------|
|                       |                                             |       | A type                       | B type         | A type                       | B type         |
| Chuck                 | Chuck size                                  | inch  | 21"                          | 24"            | 21"                          | 24"            |
| Capacity              | Swing over bed                              | mm    | 1,030                        | 1,030          | 1,030                        | 1,030          |
|                       | Swing over cross slide                      | mm    | 800                          | 800            | 800                          | 800            |
|                       | Max. turning diameter                       | mm    | 900                          | 900            | 900                          | 900            |
|                       | Max. milling diameter                       | mm    | -                            | -              | 843                          | 843            |
|                       | Max. machining length                       | mm    | 3,200                        | 3,200          | 3,200                        | 3,200          |
| Spindle               | Spindle speed                               | rpm   | 1,500                        | 1,200          | 1,500                        | 1,200          |
|                       | Spindle nose                                | ASA   | A2-15                        | A2-15          | A2-15                        | A2-15          |
|                       | Draw tube ID                                | mm    | 140                          | 140            | 140                          | 140            |
|                       | Spindle bore diameter                       | mm    | 152                          | 152            | 152                          | 152            |
|                       | Spindle motor (Cont./Max)                   | kW    | 37/55                        | 37/55          | 37/55                        | 37/55          |
| Travels               | X-axis travel                               | mm    | 470                          | 470            | 470                          | 470            |
|                       | Z-axis travel                               | mm    | 3,270                        | 3,270          | 3,270                        | 3,270          |
|                       | X-axis Rapid traverse rate                  | m/min | 12                           | 12             | 12                           | 12             |
|                       | Z-axis Rapid traverse rate                  | m/min | 10                           | 10             | 10                           | 10             |
| Turret                | Number of tool stations                     | ea    | 12                           | 12             | 12 (BMT85)                   | 12 (BMT85)     |
|                       | Turning tool shank size                     | mm    | 32                           | 32             | 32                           | 32             |
|                       | Boring bar diameter                         | mm    | 80                           | 80             | 80                           | 80             |
|                       | Turret index time(next station swivel time) | sec   | 0.25                         | 0.25           | 0.25                         | 0.25           |
|                       | Rotary tool speed                           | rpm   | -                            | -              | 3,000                        | 3,000          |
|                       | Rotary tool motor (Cont./Max)               | kW    | -                            | -              | 7.5/11                       | 7.5/11         |
| Tailstock             | Quill diameter                              | mm    | 180                          | 180            | 180                          | 180            |
|                       | Quill stroke                                | mm    | 150                          | 150            | 150                          | 150            |
|                       | Spindle taper                               | MT    | MT6 (Built-in)               | MT6 (Built-in) | MT6 (Built-in)               | MT6 (Built-in) |
| Machine               | Size (with Side Chip conveyor) LxWxH        | mm    | 7,400(8,413) × 2,910 × 2,595 |                | 7,400(8,413) × 2,910 × 2,595 |                |
|                       | Size (with Rear Chip conveyor) LxWxH        | mm    | -                            |                | -                            |                |
|                       | weight                                      | kg    | 22,000                       | 22,000         | 22,000                       | 22,000         |
|                       | Coolant tank capacity                       | Liter | 600                          | 600            | 600                          | 600            |
| ELECTRIC POWER SUPPLY |                                             |       | 68/220                       | 68/220         | 69/220                       | 69/220         |
| CONTROLLER            |                                             |       | FANUC, SIEMENS               |                |                              |                |

※Figures in inches are converted from metric measurements.

Major Specifications

| DESCRIPTION           |                                             |       | SL 6500XL                     |                | SL 6500XLM                    |                |
|-----------------------|---------------------------------------------|-------|-------------------------------|----------------|-------------------------------|----------------|
|                       |                                             |       | A type                        | B type         | A type                        | B type         |
| Chuck                 | Chuck size                                  | inch  | 21"                           | 24"            | 21"                           | 24"            |
| Capacity              | Swing over bed                              | mm    | 1,030                         | 1,030          | 1,030                         | 1,030          |
|                       | Swing over cross slide                      | mm    | 800                           | 800            | 800                           | 800            |
|                       | Max. turning diameter                       | mm    | 900                           | 900            | 900                           | 900            |
|                       | Max. milling diameter                       | mm    | -                             | -              | 843                           | 843            |
|                       | Max. machining length                       | mm    | 5,050                         | 5,050          | 5,050                         | 5,050          |
| Spindle               | Spindle speed                               | rpm   | 1,500                         | 1,200          | 1,500                         | 1,200          |
|                       | Spindle nose                                | ASA   | A2-15                         | A2-15          | A2-15                         | A2-15          |
|                       | Draw tube ID                                | mm    | 140                           | 140            | 140                           | 140            |
|                       | Spindle bore diameter                       | mm    | 152                           | 152            | 152                           | 152            |
|                       | Spindle motor (Cont./Max)                   | kW    | 37/55                         | 37/55          | 37/55                         | 37/55          |
| Travels               | X-axis travel                               | mm    | 470                           | 470            | 470                           | 470            |
|                       | Z-axis travel                               | mm    | 5,100                         | 5,100          | 5,100                         | 5,100          |
|                       | X-axis Rapid traverse rate                  | m/min | 12                            | 12             | 12                            | 12             |
|                       | Z-axis Rapid traverse rate                  | m/min | 10                            | 10             | 10                            | 10             |
| Turret                | Number of tool stations                     | ea    | 12                            | 12             | 12 (BMT85)                    | 12 (BMT85)     |
|                       | Turning tool shank size                     | mm    | 32                            | 32             | 32                            | 32             |
|                       | Boring bar diameter                         | mm    | 80                            | 80             | 80                            | 80             |
|                       | Turret index time(next station swivel time) | sec   | 0.25                          | 0.25           | 0.25                          | 0.25           |
|                       | Rotary tool speed                           | rpm   | -                             | -              | 3,000                         | 3,000          |
|                       | Rotary tool motor (Cont./Max)               | kW    | -                             | -              | 7.5/11                        | 7.5/11         |
| Tailstock             | Quill diameter                              | mm    | 180                           | 180            | 180                           | 180            |
|                       | Quill stroke                                | mm    | 150                           | 150            | 150                           | 150            |
|                       | Spindle taper                               | MT    | MT6 (Built-in)                | MT6 (Built-in) | MT6 (Built-in)                | MT6 (Built-in) |
| Machine               | Size (with Side Chip conveyor) L×W×H        | mm    | 9,281(10,351) × 2,980 × 2,555 |                | 9,281(10,351) × 2,980 × 2,555 |                |
|                       | Size (with Rear Chip conveyor) L×W×H        | mm    | -                             |                | -                             |                |
|                       | weight                                      | kg    | 26,000                        | 26,000         | 26,000                        | 26,000         |
|                       | Coolant tank capacity                       | Liter | 790                           | 790            | 790                           | 790            |
| ELECTRIC POWER SUPPLY |                                             |       | 68/220                        | 68/220         | 69/220                        | 69/220         |
| CONTROLLER            |                                             |       | FANUC, SIEMENS                |                |                               |                |

※Figures in inches are converted from metric measurements.

NC Specifications / FANUC Series

| Item                    |                                              | Specification                   | FANUC series |
|-------------------------|----------------------------------------------|---------------------------------|--------------|
| Controlled axis         | Max. feed axes                               |                                 | 4 AXIS       |
|                         | Feed axes                                    |                                 | X/Z/(Cs)     |
|                         | Max. simultaneously controlled axis          |                                 | 4            |
|                         | Least command increment                      | 0.001mm / 0.0001"               | ○            |
| Operation functions     | Pulse handle feed                            | X1, X10, X100                   | ○            |
|                         | Feedrate per minute                          | G98                             | ○            |
|                         | Feedrate per revolution                      | G99                             | ○            |
| Interpolation functions | Linear interpolation                         | G01                             | ○            |
|                         | Circular interpolation                       | G02, G03                        | ○            |
|                         | Dwell                                        | G04                             | ○            |
|                         | Polar cordinate interpolation                | G12.1, G13.1                    | ○            |
|                         | Cylindrical interpolation                    | G70.1                           | ○            |
|                         | Variable lead thread cutting                 | G34                             | ○            |
|                         | Continuous threading                         |                                 | ○            |
|                         | Reference position return                    | G28                             | ○            |
| Feed function           | Reference position return check              | G27                             | ○            |
|                         | Rapid traverse rate override                 | F0, 25%, 50%, 100%              | ○            |
| Spindle function        | Feedrate override                            |                                 | 0~150%       |
|                         | Spindle orientation                          |                                 | ○            |
| Tool functions          | Rigid tapping                                |                                 | ○            |
|                         | Tool number command                          | T4-Digt / T2-Digt               | T4-Digt      |
|                         | Tool nose radius compensation                | G40 ~ G42                       | ○            |
|                         | Tool offset pairs                            |                                 | ○            |
|                         | Tool geometry/wear offset                    | GEOMETRY & WEAR DATA            | ○            |
|                         | Tool life management                         |                                 | ○            |
|                         | Tool path graphic display                    |                                 | ○            |
|                         | Automatic tool offset                        | G36, G37                        | ○            |
| Program input           | Direct input of tool offset value measured B |                                 | ○            |
|                         | Absolute/incremental programming             |                                 | ○            |
|                         | Multiple repetitive cycle                    | G70 ~ G76                       | ○            |
|                         | Canned cycles                                | G90, G92, G94                   | ○            |
|                         | Inch/metric conversion                       | G20 / G21                       | ○            |
|                         | Program restart                              |                                 | ○            |
|                         | Retraction for rigid tapping                 |                                 | ○            |
|                         | Max. programmable dimension                  | ±99999.999mm/±9999.9999"        | ○            |
|                         | 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                       | ○            |
| Setting and display     | Number of registerable programs              |                                 | 400EA        |
|                         | Alarm & Operator history display             | ALARM & OPERATION DISPLAY       | ○            |
|                         | Run hour and parts count display             | RUNNING TIME & PART NO. DISPLAY | ○            |
|                         | Display spindle & servo overload             | 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)                 | ○            |
| Manual guide i          | Manual Guide i                               |                                 | ○            |



## 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

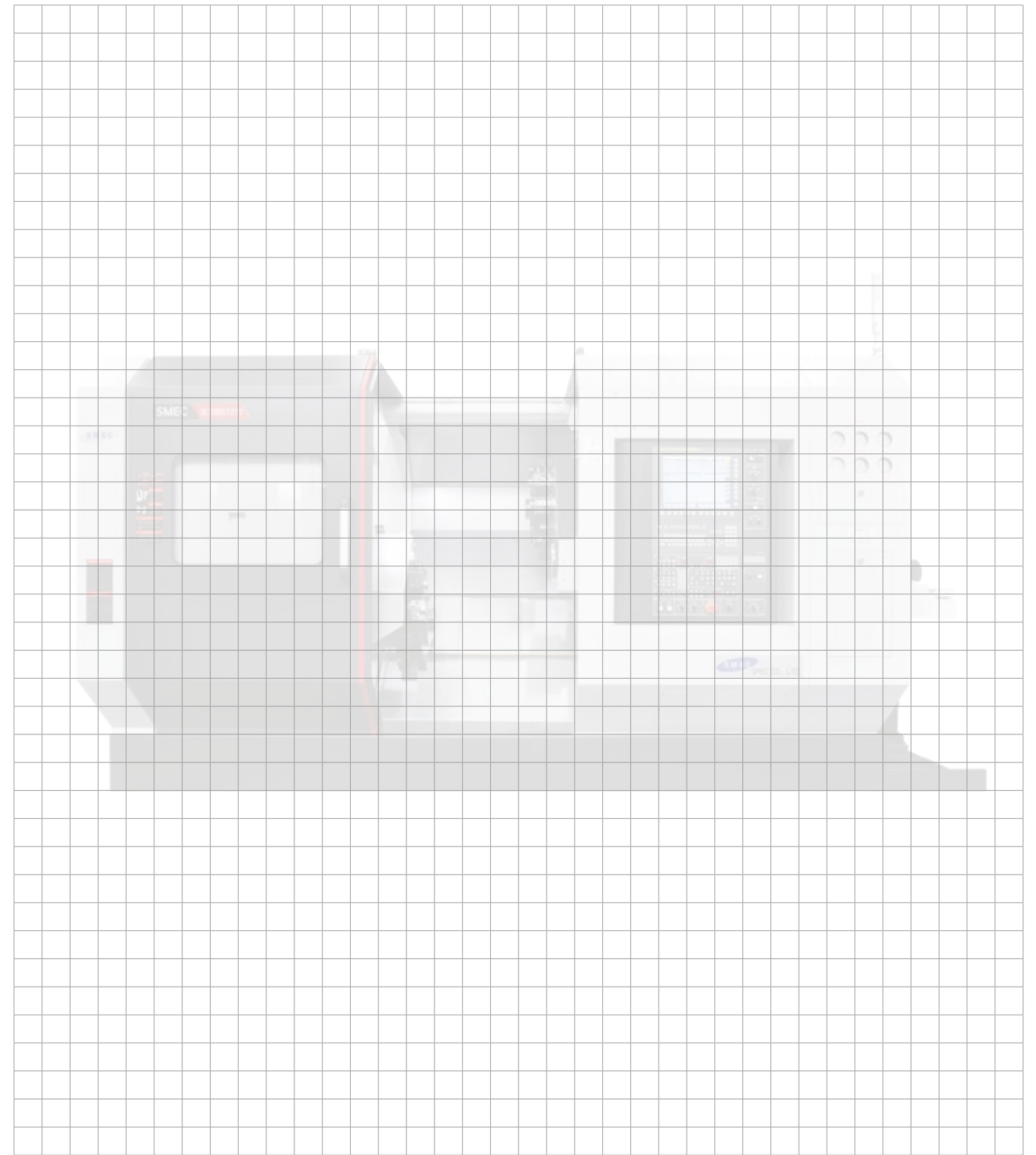
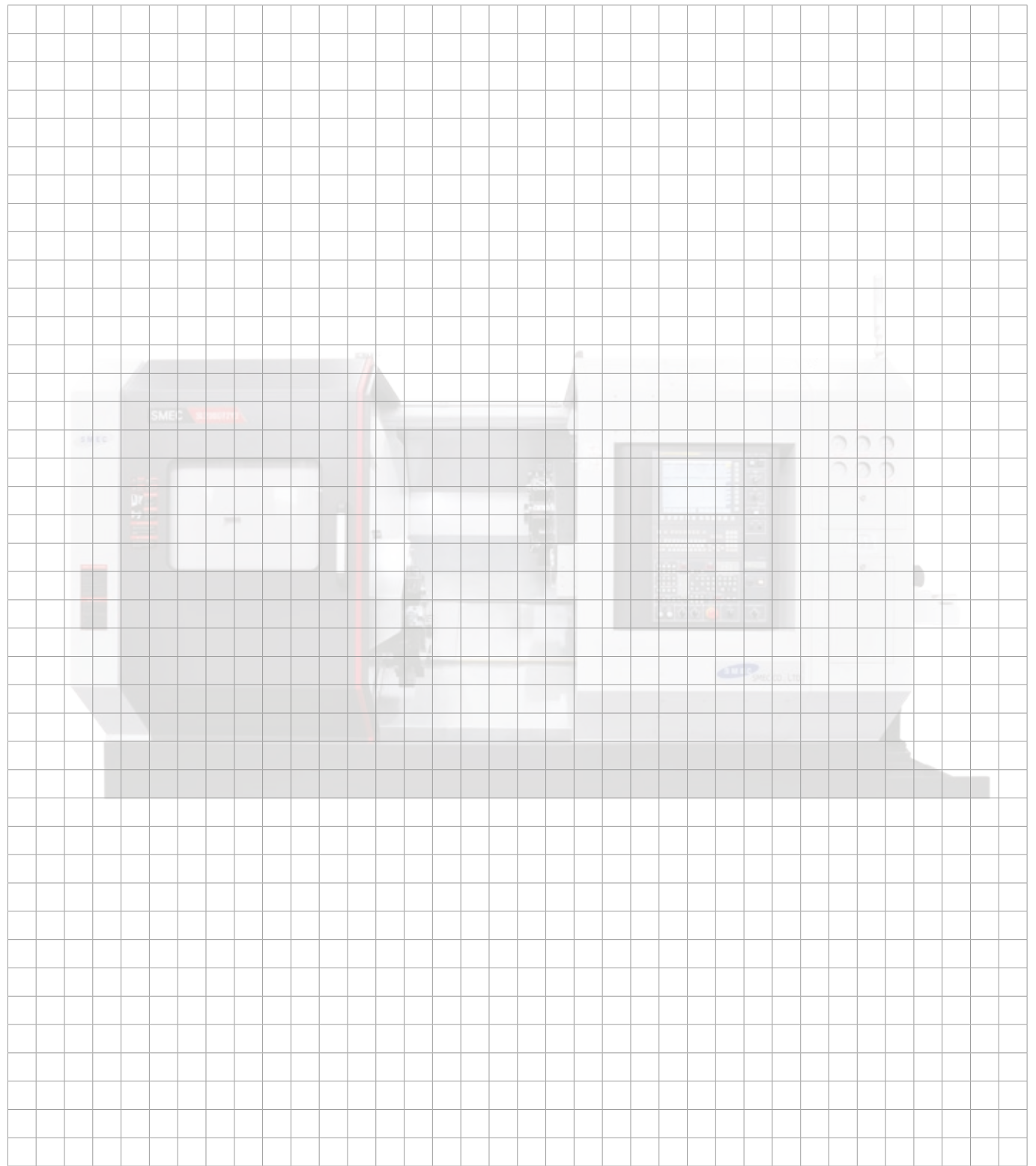
Robuste MultiTouch-Bedienung  
kombiniert mit SideScreen

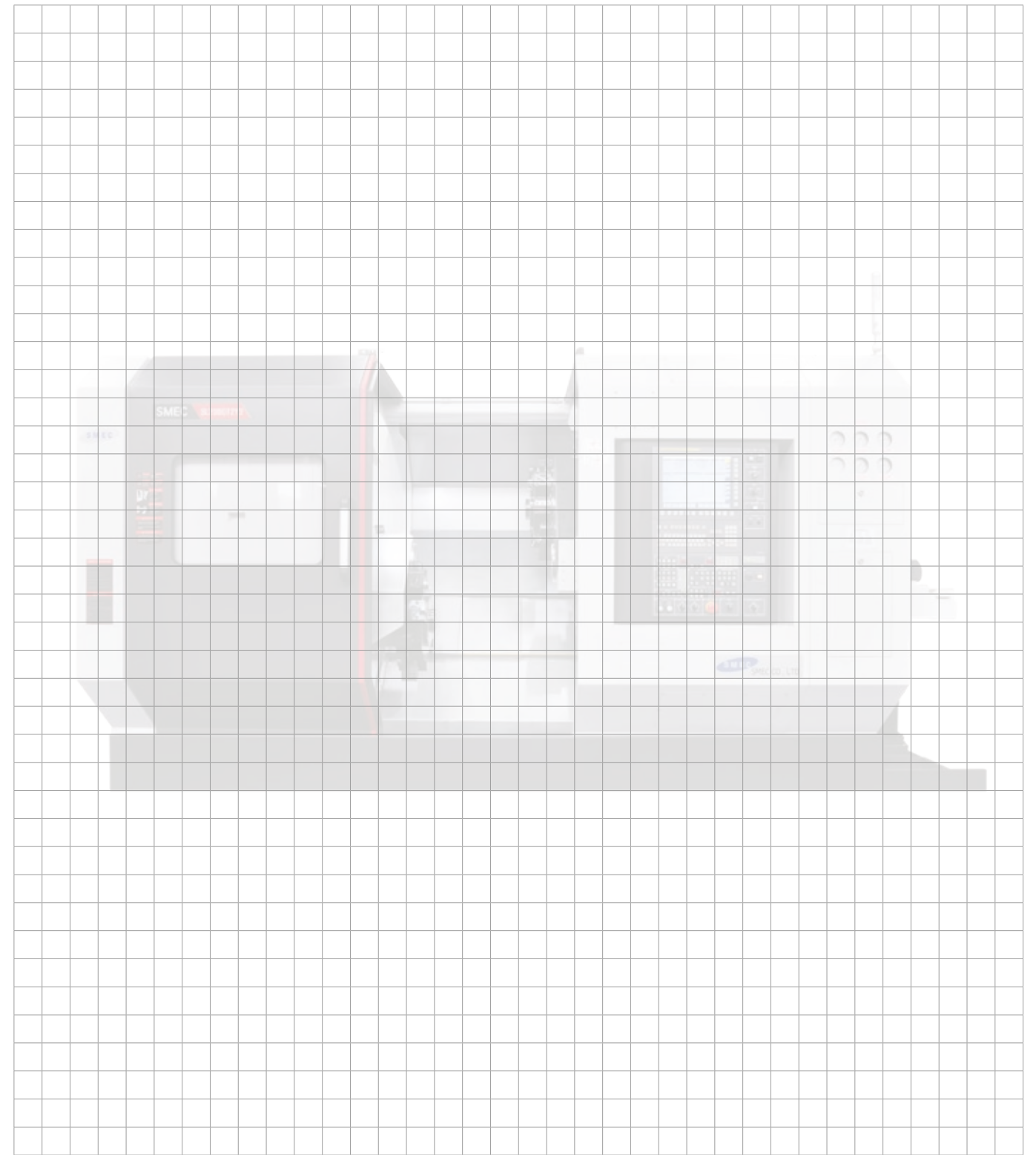
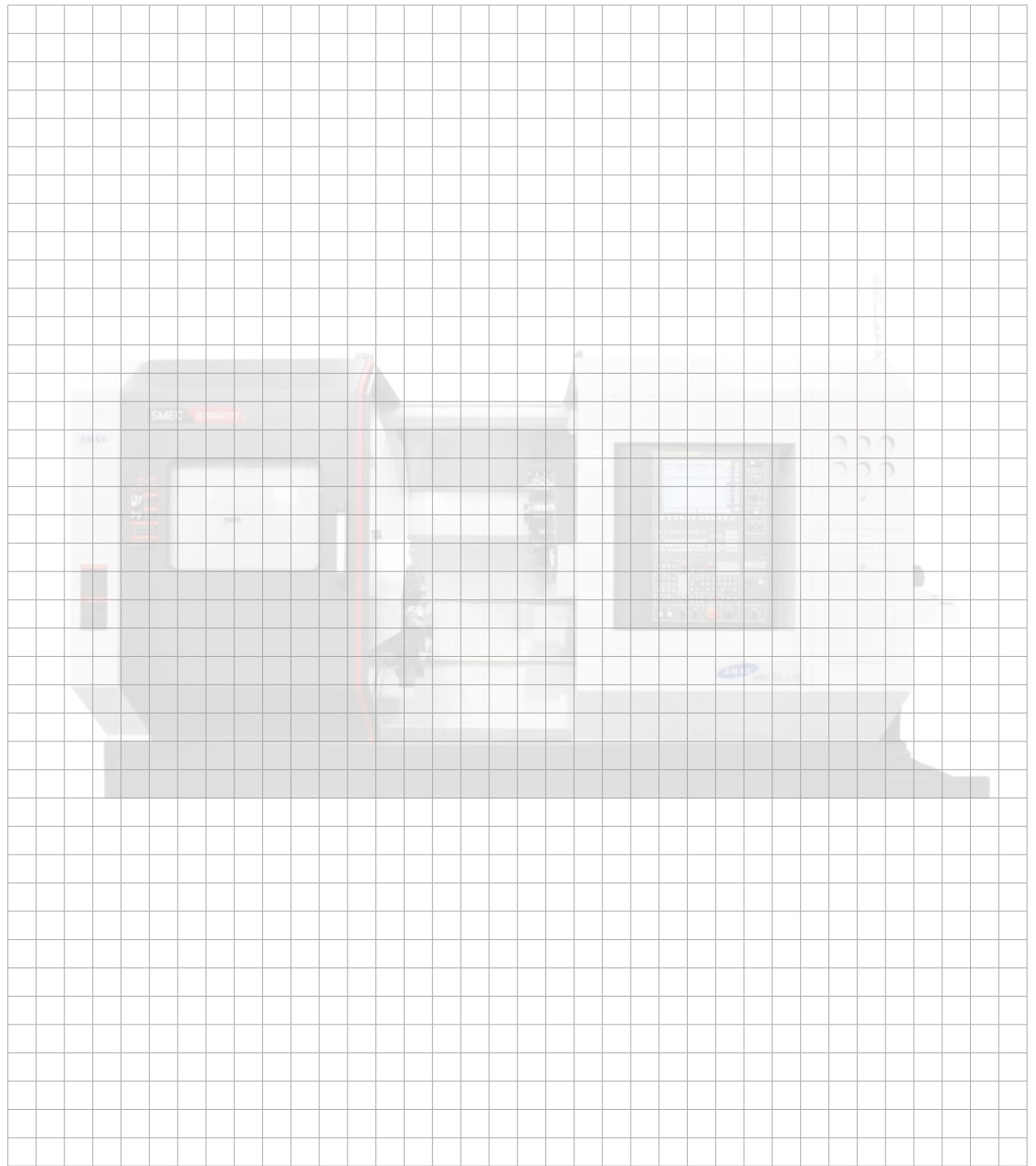
Für Werkstatt, Lohnfertigung und Großserienfertigung sind hochproduktive Automatisierungslösungen gefragt, die den Weg in die Digitalisierung begleiten.

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.





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