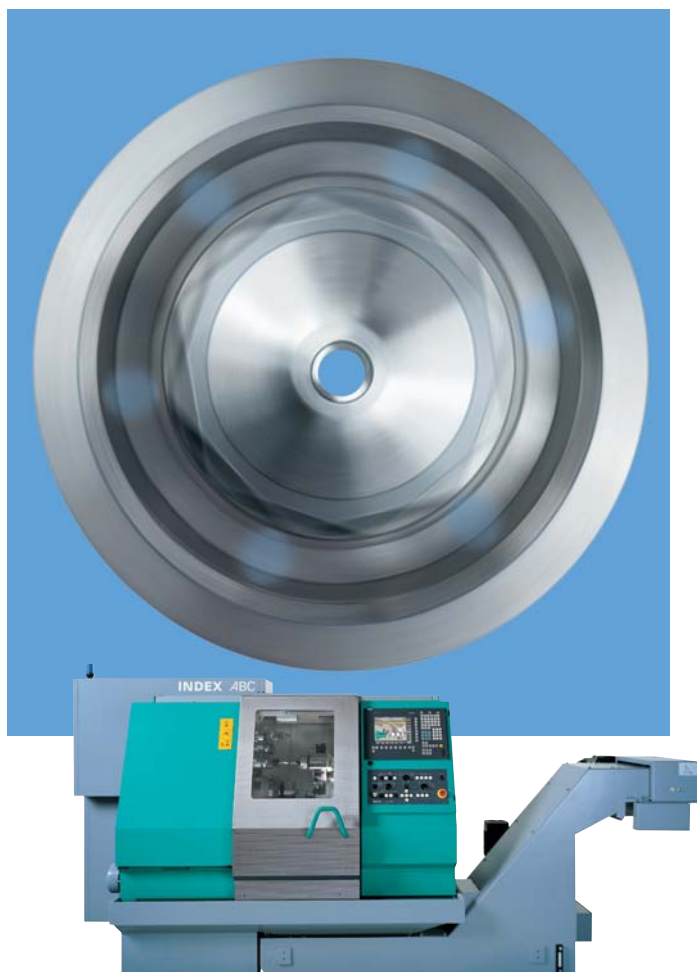


## SpeedLine ABC

Production turning machine



## Exact fit for your needs

INDEX sets the standard for economic high-precision solutions tailored to the customer's needs.

For the machining of simple to highly complex parts, in small to large lot sizes, INDEX is offering consistently economic and technologically superior solutions.

The production turning machine INDEX ABC produces simple and complicated parts. It is designed for bar and chuck work. At the same time it combines the advantages of a cam controlled automatic with those of a universal CNC lathe. The result shows in your wallet: You are flexible and productive at the same time. You produce first class quality and work economically. Your ABC does both, because it offers a wide range of application possibilities. The tooling accessories will meet your requirements. Up to 19 tools can be employed. This allows you to completely finish a part in one operation.

### A solid construction - added value already in the machine construction

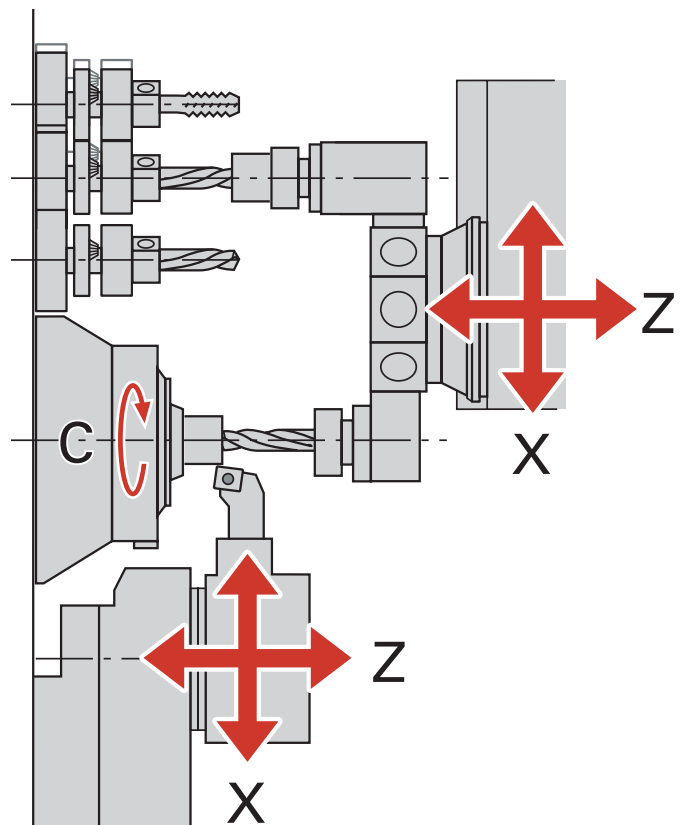
The machine has a welded steel base, on which the cast iron machine bed is mounted with the 2 independent turrets. This concept offers the best guarantee for precision work and it convinces by its maximum bending and torsional stiffness as well as excellent dampening.

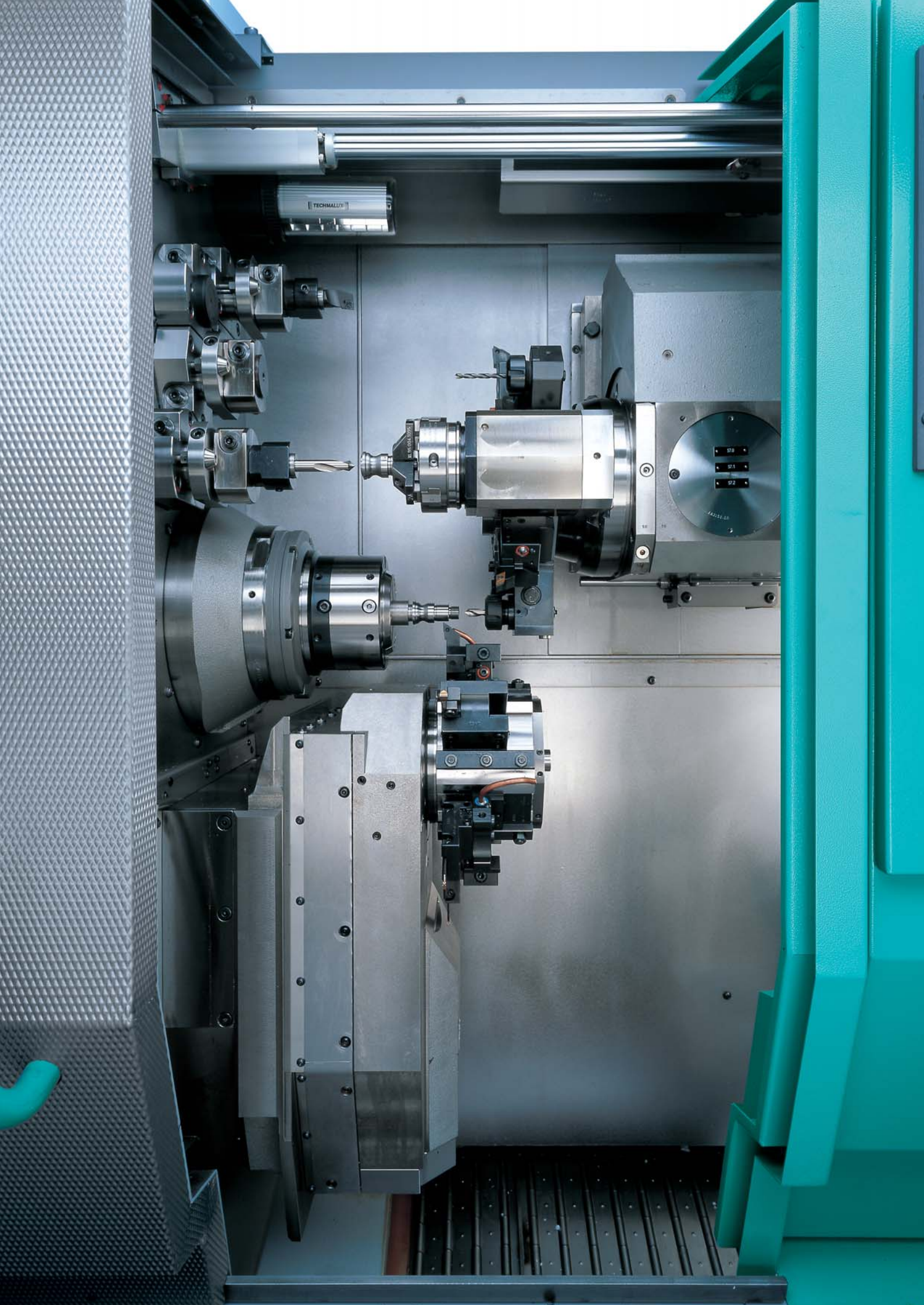
High-quality linear guideways provide precision in combination with a long service life. In case of collision, the machine is protected by friction-locked connections between headstock and machine bed and by overload clutches on all ball screws. INDEX quality for long life.

The thermo-symmetric headstock with its controlled heat transfer perpendicularly to the tool plane impresses by its superior turning precision.

### Your advantages:

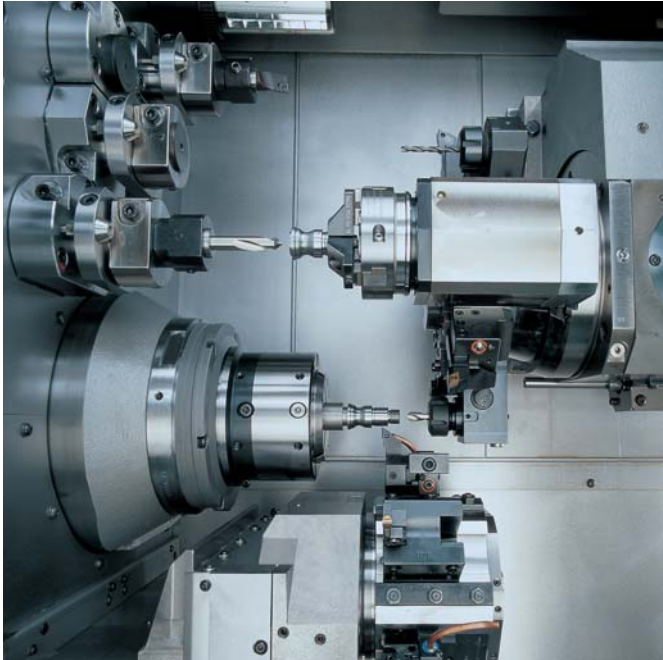
- Compact design, high performance values requiring little space
- Bar capacity according to choice 42, 60 or 65 mm
- Up to 10% increase in productivity through the ABC dynamics package - control C200-4D powerline
- Cycle time reduction due to three tools simultaneously in cut
- Driven tools on every tool carrier possible
- up to 6 backworking stations
- easy to set-up and very good accessible
- Polygon turning also possible in steel



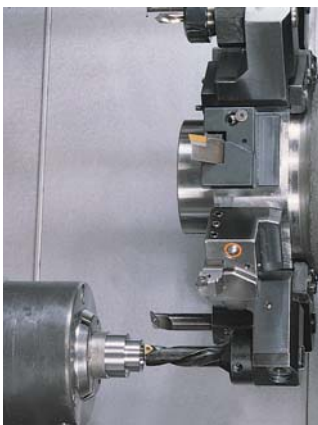




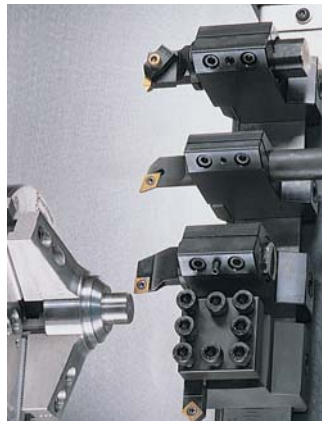
## Choose the combination you need



**Variation 1** has two turrets for quick change toolholders. Turret 1 with 7 tool stations, plus 1 fixed position for the synchronized pick-up spindle, and a second turret which can hold up to 6 tools. In addition 5 (6) backworking stations can be added, two of which can have live tool capability to complete the part on the cutoff side.



**Variation 2** is equipped with an eight station turret designed for quick change toolholder system DIN 69880 - DIA 25 (VDI25) for I.D. and O.D. work. With the optional tool driving attachment driven (live) toolholders can be used on all stations, except for the synchronized spindle position.

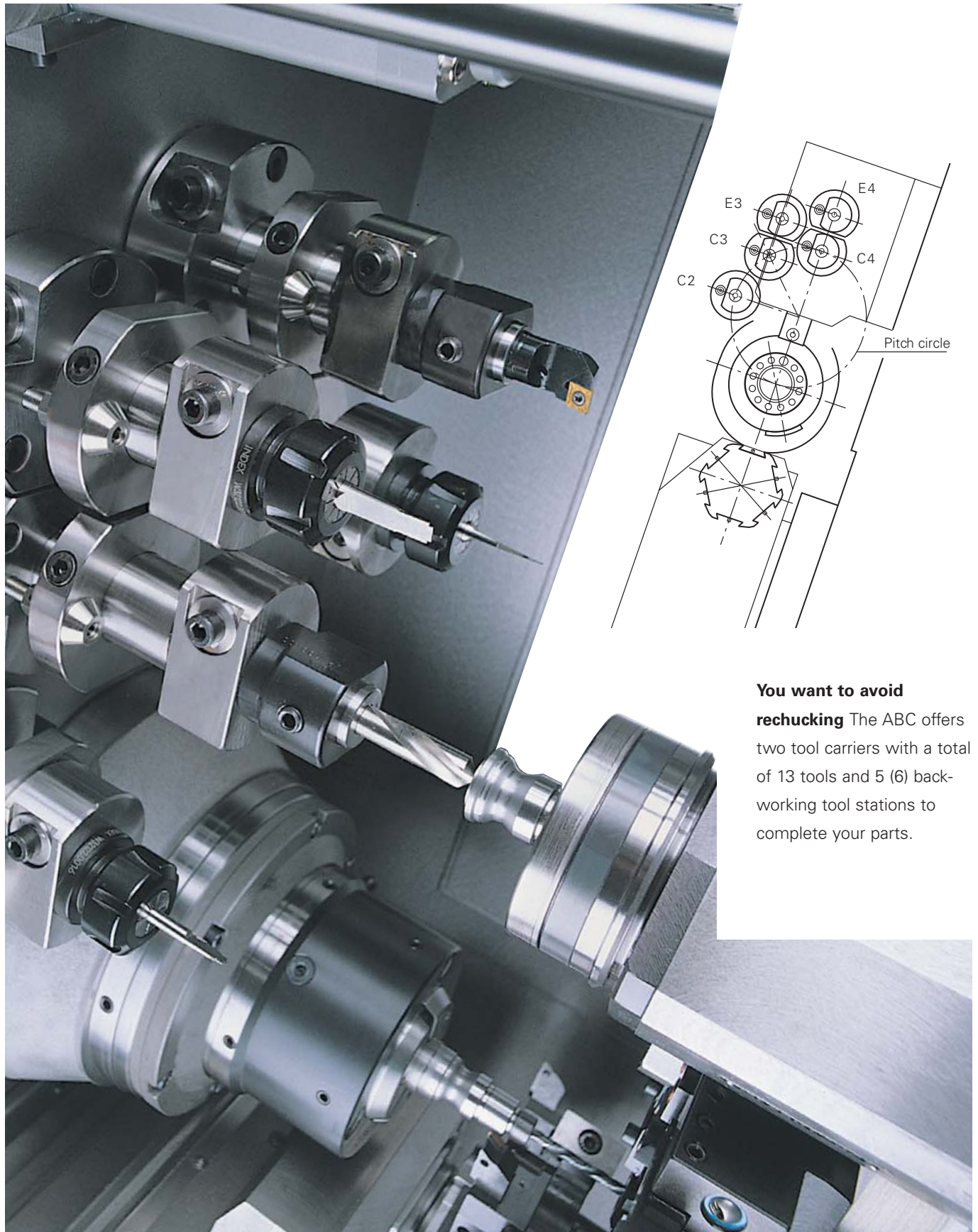


**Variation 3** is equipped with a linear (gang style) tool carrier, which is particularly advantageous for machining of forgings and castings, or even finishing of heat treated parts hand loaded into the main spindle. The linear slide has a length of 400 mm (15.748 in) and can hold up to 7 tools depending on part diameter.



**Variation 4** has a magazine style loading device for automatic loading of blanks or pre-machined parts. Using part dependent guide rails, the blank is loaded into a backworking station. From there the part is transferred by a loading tool into the main spindle chuck or collet. The loading tool could also be mounted on the linear slide or turret.

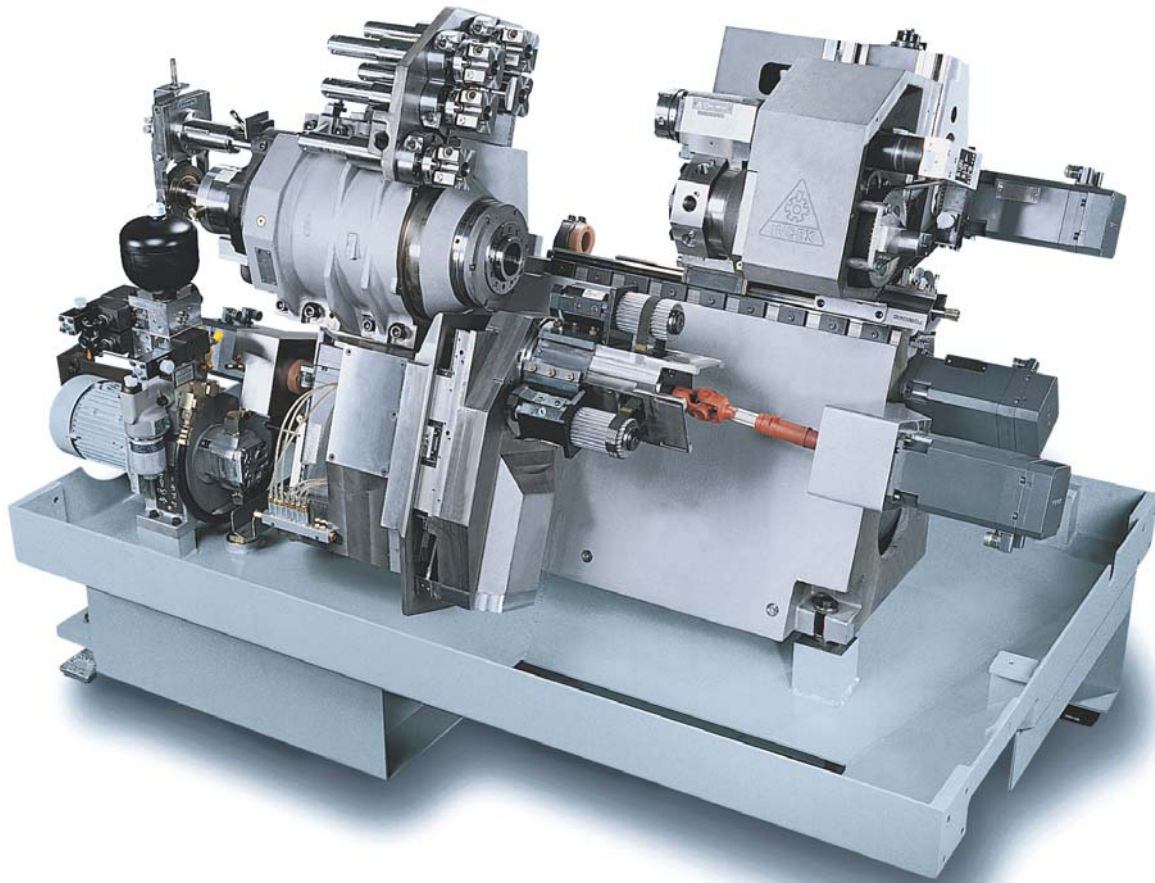
## Increase your productivity



**You want to avoid rechucking** The ABC offers two tool carriers with a total of 13 tools and 5 (6) back-working tool stations to complete your parts.



## Impressive technology



**Turret 1** has 7 (8) stations for I.D. and O.D. work. Using the driving attachments all tool stations can be equipped with driven tools. The synchronized spindle is rigidly mounted on a separate turret position and equipped with a separate helical gear drive.

**Turret 2** has 6 tool positions with rugged, dovetail toolholder mounting, designed for form tools, turning, plunge cut and cutoff tools. Driven tools are possible at every station as well.

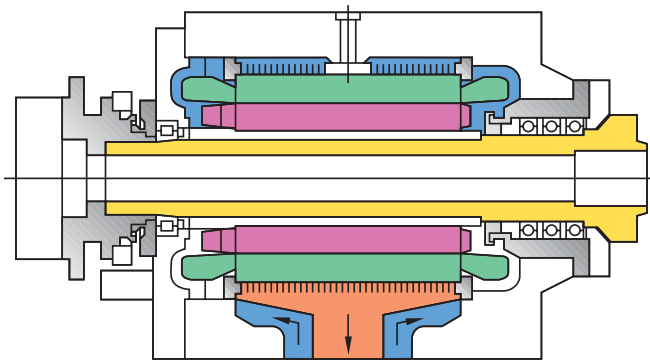
Both turrets work independently and are indexed by a innovative high speed indexing and locking mechanism. Very good acceleration and deceleration performance without jolt.

Up to 6 **backworking stations** complete the tooling array. These stations are mounted above the main spindle on two pitch circles; the I.D. tools on the turret and the main spindle center are on the same circle. These stations service the synchronized spindle in turret 1.

### Motor spindle

The high torque frequency controlled AC spindle motor with the patented INDEX Air-cooling System has a power of 20 kW (27 Hp) at 100 %. The increased air pressure in the spindle motor unit prevents coolant or dirt from entering the spindle bearings. The thru flow air

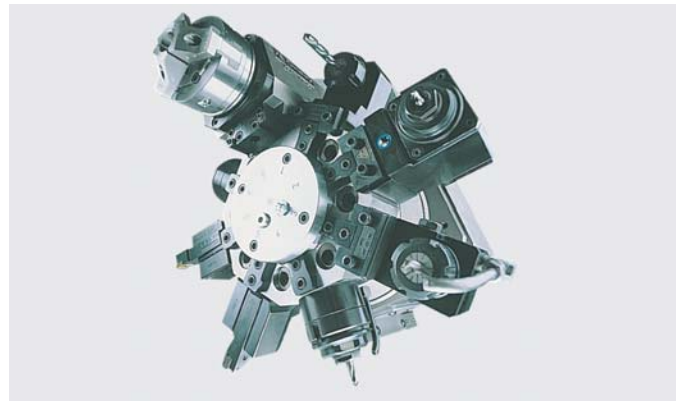
cools both stator and rotor directly. Main characteristics are: Short acceleration and deceleration times; no gears, pulleys, etc.; small rotating masses; high quiet-ness; high torsional stiffness; no external forces from belt or gear drives. The result: better part quality.



### Synchronized spindle

With collet for chucking DIA up to 42 mm (1.65 in), or with chuck up to 90 mm (3.54 in) chucking DIA, I.D. chucking optional. Max. rpm 4500. The synchronized pick-up spindle is equipped as standard with an indexing and locating attachment. The spindle is mounted on turret

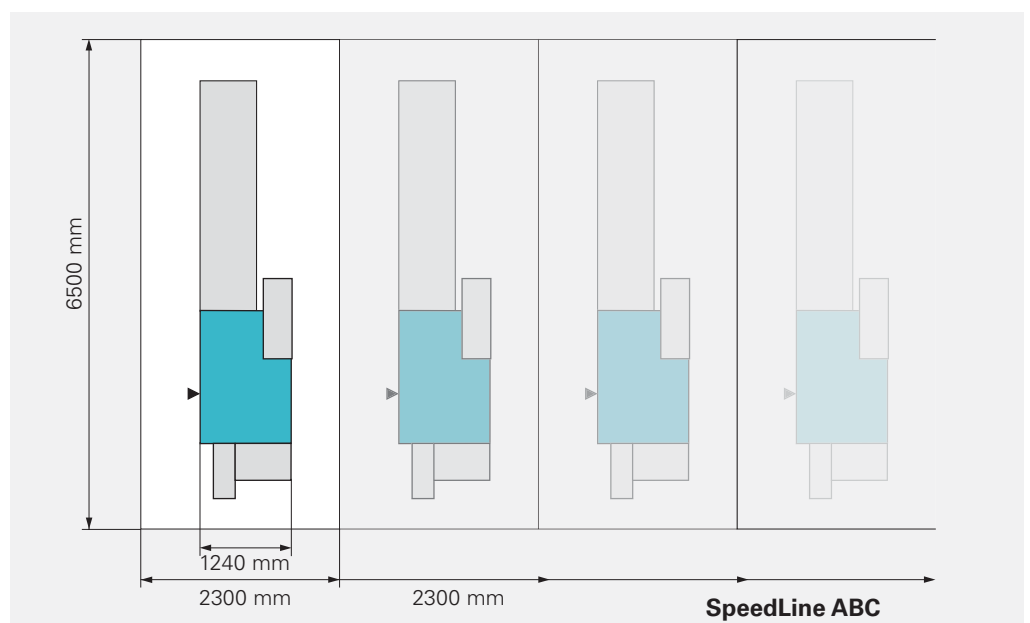
1 on a fixed position and driven by a separate helical gear, independently from the central bevel gear.



## The performance level

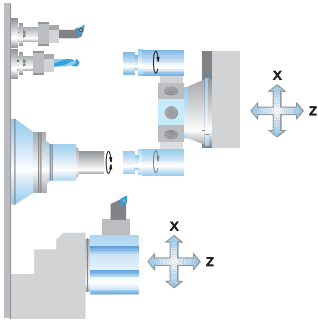
### High performance values requiring little space

Use your valuable production surface to your optimum benefit

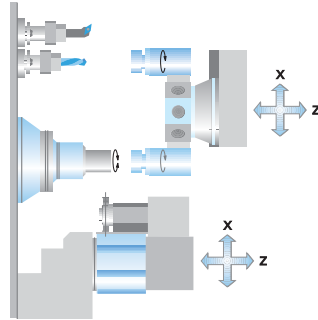


## Precision that pays

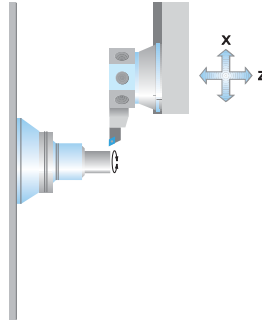
### Universal possibilities



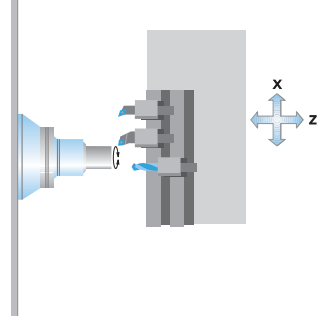
### Planned perfection



### Adaptable in each position



### Know-how in each detail



Free machining steel  
SW 17 x 45 mm  
(.67 Hex x 1.77 in) **48 s**



Tool steel  
Ø 26 x 33 mm  
(DIA 1.02 x 1.30 in) **67 s**



Brass  
Ø 32 x 34 mm  
(DIA 1.26 x 1.34 in) **28 s**



Ball bearing steel  
Ø 36 x 20,3 mm  
(DIA 1.42 x .80 in) **38 s**



Stainless steel  
Ø 25,8 x 64,3 mm  
(DIA 1.02 x 2.53 in) **75 s**



Brass  
SW 19 x 29 mm  
(.75 Hex x 1.14 in) **17 s**



Free machining steel  
Ø 38 x 25,7 mm  
(DIA 1.50 x 1.01 in) **32 s**



Low carbon alloy steel  
Ø 16 x 30 mm  
(DIA .63 x 1.18 in) **10 s**

### An investment you can justify

Whatever you produce, the ABC machine provides the answer to your production problems. From the simplest screw machine part to complex precision turned parts. No matter if it is bar work or

chuck working with I.D. and O.D. contouring; no matter if you do complex machining or simple finishing operations, your plus with the ABC: You will complete simple and complex parts in one

cycle in a very competitive time. You will also save on set up time and achieve faster throughput. You do not need to struggle for parts, but you increase your production reliability. You

also increase your capacity to take on additional work. Even small lot sizes can be produced economically.



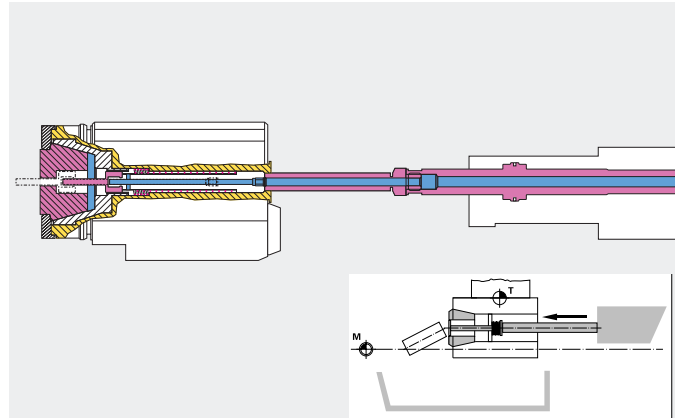
## Automation and additional components



### Save time when feeding bars

You can gain up to 4 seconds using the INDEX LMI automatic barloader. During the automatic barloading cycle you can even save up to 35 sec., compared to other barloaders.

The INDEX LMI is available for round or profile barstock for 3.2/3.7 or 4.2 m (10, 12 or 14 foot) bar length and DIA from 6 to 52 mm (0.236 - 2.047 in). The ABC can also adapt to most barfeeds and barloaders using the UNIMAG interface.



### Workpiece ejection and flushing system

This system is used to eject the finished parts from the synchronized spindle, flushing the spindle with coolant at the same time to clear out chips. This increases process reliability.



### Reduce your piece cost

Do you need an additional station for milling threads or polygon turning? The ABC can be equipped with a separate drive for these attachments. On brass, stainless steel aluminum and free machining steel, threads and polygon profiles can be produced in the shortest possible time.



### Automatic part unloading

While the next piece is machined, the work receiving attachment transports the finished part carefully to the finished part workpiece box or a workpiece conveyor. The bar remnant is removed separately.

# Economical through an intelligent control concept

## You're in control ...

- Cleartext in display and operation
- All spindles and axes at a glance
- Identical interface for all machines
- In case of error: Display of "Place" and "Cause"
- "Online"-error and service documentation

## Expert programming ...

Far more than 70 user cycles

- offer application-specific support down to the smallest detail
- guarantee safe program run with maximum flexibility
- secure optimum machine utilization and machine running

## INDEX C200-4D

Based on Siemens 840D

## Quick setup ...

Including axis lock

- Approach of tool carriers "step by step"
- Check of superimposed machining processes at standstill

Including T word

acknowledgement mode

- User control prior to each turret indexing

All of that is done without any modification in the programs

## Starts immediately ...

Via block search

- key press resumes process at the point of interruption
- channel-synchronous advance to any desired program point
- REPOS-guided safely to the (new) starting point

Via start requirements

- establishes correct machine state simply and without collision

Machine: SCARA 1.MPF TUR1 AUTO normal operation  
Channel reset Program aborted 16:31:27

**Blank block level** 502

program running in

☐ T-word confirm mode  
☐ travel without material  
☐ axis locking  
☐ DRY: dry-run feed  
☐ M01: programmed stop

☒ SBL1: stop after each machine function  
☐ SBL2: Stop after each block

**Blank block level**

☐ /N MEASURING  
☐ /1N ...  
☐ /2N DIAM 15.7  
☐ /3N ...  
☐ /4N TEST  
☐ /5N ...  
☐ /6N ...  
☐ /7N ...

Feed rate reduction - machine Feed 120% rapid travers. 120% current 110%

dry-run feed F5000.0000 mm/min  
variable increment dimension 0 1/10000 [for operating mode INC VAR]

designations of the blanking out level

overstore single process process control display selection program influencing operate units measuring/monitoring wear correction

Machine: SCARA 1.MPF TUR1 AUTO normal operation  
Channel reset Program aborted 16:30:33

**TUR1 : TOOL MONITORING** 704

No.	Axis	Activ	Learn	Utilisation rate [%]		Recognition [%]			Tool from	
				Act.	Learned	Missing	pre-alert	Breakage	Mag	Local
1	XM1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0.00	0.00	0.00	0.00	0.00	0.00	0 0
2	XM1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0.00	0.00	0.00	0.00	0.00	0.00	0 0
3	YM1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0.00	0.00	0.00	0.00	0.00	0.00	0 0
4	XM2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	0.00	0.00	0.00	0.00	0.00	0.00	0 0
5	---									
6	---									
7	---									
8	---									
9	---									
10	---									
11	---									
12	---									

stehe: \scara\index.ini

overstore single process process control display selection program influencing operate units measuring/monitoring wear correction

## Operational safety ...

Absolute encoder systems know position in any situation

## Safety Integrated ...

- maintains axis positions and clamping positions even with the protective hood open
- checks whether safety device function is working correctly with respect to the cycle
- personal protection quick to react

## and flexibility!

- Tool breakage monitoring system upon request
- Tool control system and replacement tools possible
- ETHERNET network connection to DNC possible
- Machine data acquisition (MDA / ODA possible)
- Teleservice possible

# Technical Data

Main spindle		D42	D60	D65
Bar capacity	mm (in)	42 (1.65)	60 (2.36)	65 (2.56)
Feeding length max.	mm (in)	80 (3.15)	80 (3.15)	80 (3.15)
Speed	rpm	7000	6000	6000
Power at 100%	kW (Hp)	20 (27)	20 (27)	20 (27)
Power at 40%	kW (Hp)	29 (39)	29 (39)	29 (39)
Torque at 100%	Nm (ft lbs)	95 (70)	95 (70)	95 (70)
Torque at 40%	Nm (ft lbs)	140 (103)	140 (103)	140 (103)

Option: C-axis / Indexing and locating attachment (2.5° increments)

Turret 1		X-axis	Z-axis
Number of stations		7 (+ synchronized spindle)	
Toolholder system DIN 69880	mm (in)	25 (.98)	
Slide travel	mm (in)	90 (3.54)	280 (11.02)
Feedforces	N (Lbs)	5500 (1100)	5500 (1100)
Rapid traverse	m/min (ft/min)	27 (88)	36 (117)
Resolution	mm (in)	0.0005 (.00002)	0,001 (.00004)
Option: Tool drive (all stations)			
Speed	rpm	6000	
Power at 25%	kW (Hp)	4.2 (5.7)	
Torque at 25%	Nm (ft lbs)	10 (7.4)	

Synchronized spindle		
Speed	rpm	4500
Power at 25%	kW (Hp)	4.2 (5.7)
Torque at 25%	Nm (ft lbs)	10 (7.4)

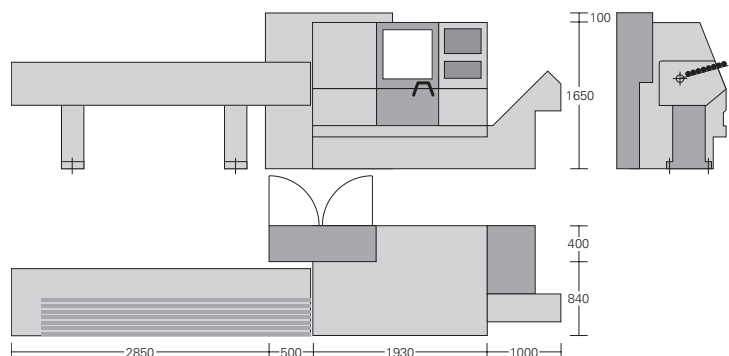
Indexing and locating attachment (7.5° increments) / Hydraulic ejecting and flushing attachment (max stroke 42 mm)

Backworking stations		
Number		5 (6 if part discharge unit to the L.H.side)
Driven tools max		2
Speed	rpm	6000
Power at 25%	kW (Hp)	4.5 (6.1)
Torque at 25%	Nm (ft lbs)	8 (6)

Turret 2		X-axis	Z-axis
Number of stations		6	
Toolholder system: Dovetail mounting			
Slide travel	mm (in)	81 (3.18)	80 (3.15)
Feedforces	N (Lbs)	8300 (1660)	5500 (1100)
Rapid traverse	m/min (ft/min)	27 (88)	36 (117)
Resolution	mm (in)	0.0005 (.00002)	0,001 (.00004)
Tool drive (all stations)			
Speed	rpm	4500	
Power at 25%	kW (Hp)	4.2 (5.7)	
Torque at 25%	Nm (ft lbs)	10 (7.4)	
Option: Thread milling and polygon turning attachment (can be installed on up to 2 stations simultaneously)			
Speed	rpm	6000	

Weights and connecting power (max. configuration)		
Weight	approx. kg	2500
Connecting power		12-34 kW, 15-43 kV, 25-80 A, 400 V, 50 / 60 Hz

Control	
INDEX C200-4D (Based on Siemens 840D powerline)	





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