

Variomatic RTC Rotary Transfer Machines

have been designed to efficiently handle a wide range of manufacturing jobs in the automotive and automotive components industries, in apparatus and instrument engineering, in the field of locks, mountings and fittings for the building industry and in many other branches.

In view of the trend towards smaller production batches and part families, large-size rotary transfer machines also need to be engineered to guarantee highest flexibility and the ability to cope with workpieces of increasingly complex shapes. Customers are increasingly demanding machines which combine short cycle times and a high number of machining operations with maximum accuracy.

The Variomatic RTC satisfies all these requirements, offering such advantages as:

- | quick resetting thanks to the use of CNC controlled units
- | indexing accuracy of 5 angular seconds for an indexing time of 1 second maximum
- | high machining and repetitive accuracy
- | clear, compact, modular design
- | long service life under severe production conditions
- | cycle times of up to 20 cycles/min

Variomatic RTC



Variomatic RTC – key specifications

Feed control	CNC controlled
Controllable axes	up to 80
Resetting	quickly resettable, within families of parts via machining program
Swivel chuck	CNC control allows continuous swivelling from 0 - 360°
Swivel axes	mechanical and CNC controlled
Parts/year	0.5 - 4 million
Workholding fixtures	6 - 16
Productivity (see also parts/year)	high production rates achievable for appropriate components and machining parameters, short resetting times also make it suitable for the flexible manufacture of small batch sizes
Workpiece size	preferably components up to 80 mm in diameter and 100 mm in width/height/length, of brass, aluminium and steel, small components can also be efficiently machined, depending on machining parameters (power and speed)



RTC – an ingenious technology!

With their clear modular design, high-precision rotary indexing tables, the consistent use of CNC controlled machining units in all axis combinations, our RTC machines provide customised flexibility.

The freely selectable number of stations (between 6 and 16) and the availability of several sizes of modular machining units ensure that the RTC can perform versatile machining operations.



The Variomatic RTC is leading-edge technology in terms of the operations which can be performed on the machine:

- | *Drilling*
- | *Counterboring and -sinking*
- | *Reaming*
- | *Tumbling*
- | *Deep-hole drilling*
- | *Thread cutting*
- | *Longitudinal and transverse turning*
- | *Milling*
- | *Cutting*
- | *Broaching*
- | *Gauging*
- | *Assembling etc.*

Almost everything is possible: Variomatic RTC!

Back drilling attachments take the problem out of machining components from the rear.

Tunnel brackets allow simultaneous vertical and horizontal machining operations.

Variable chucking methods and special workholding fixtures enable the RTC to machine a wide range of components and material cross-sections from almost any angle.

Double-spindle units allow simultaneous machining of two and more components.

Basic design

The circular shape of the basic machine, baseframe and guard greatly facilitates resetting: When the sliding doors are open, the machining units and clamping chucks are easily accessible. The round enclosure is hermetically sealed by the integral transparent guard, designed to assure full compliance with CE requirements, so that noise emissions remain far below permissible limits when the sliding doors are closed.

An indexing plate is mounted on the CNC rotary indexing table. This plate, in turn, is fitted with clamping chucks or special workholding fixtures in accordance with the number of stations used. The pitch circles on which the clamping chucks are located range from 630 mm to 1250 mm.

The rotary indexing table runs in highly preloaded radial and axial anti-friction bearings. A patented indexing unit achieves highest indexing accuracies.

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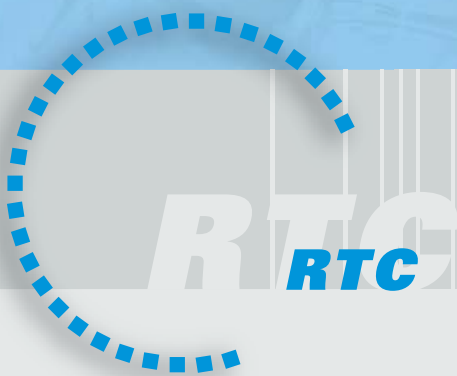
Machining units

All machining units have been designed to work in vertical, horizontal and inclined positions. Units can be easily adjusted in 3 axes thanks to simple adjusting elements and excellent accessibility.

CNC units can be used in all required axis combinations to provide maximum flexibility.

Tool clamping systems

The machine uses quick-change systems (preferably HSK). Tools are preset outside the machine. Thus, the machine needs to be stopped only for a very short time for tool changing.



Workpiece chucking

Workpieces are held in clamping chucks or workholding fixtures which may be rigidly fixed on the indexing plate or mounted in a swivelling manner. Where swivelling fixtures (mechanical or CNC controlled) are used, they can be swivelled to any required angle by the machining application.

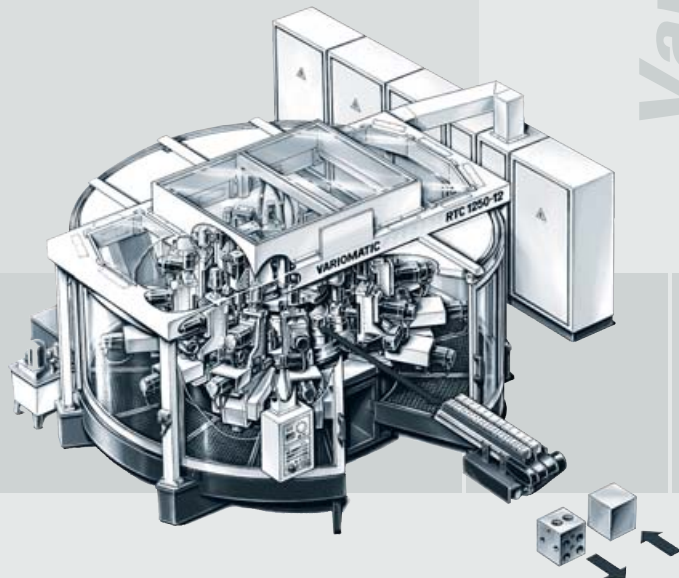
Machine control

The entire machine is CNC controlled, the controls coming preferably from renowned manufacturers such as Siemens, Indramat and Mitsubishi. Standard features of our machine controls include connection to a network (LAN), tool and process monitoring as well as remote diagnosis.

Peripheral equipment

The wide range of additional attachments available for the Variomatic RTC make it a machining system in the true sense of the word. The list below gives just a selection of the options available.

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Variomatic is continuously designing and building new customised **attachments** to meet specific requirements. Consequently, this list will also be continuously extended and updated.

Supports	Stock feed devices
Collecting tanks and drop collectors	Sorting guides
Ejectors	Chip conveyors
Add-on machines (complete)	Bar loaders
Fume exhaust systems	Transfer devices
Gauging and testing equipment	Equipment for linking up- and downstream machines
Coolant units	Shifting attachments
Coilers	Vibrators with special feed attachments
Straightening devices	Feed attachments



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