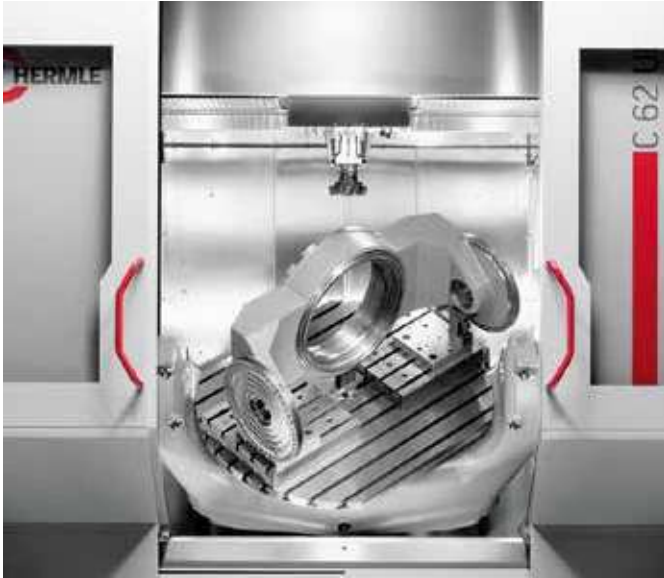


C 62  
[www.hermle.de](http://www.hermle.de)



Milling at its best: Hermle machines are often at the forefront when it comes to optimized results. The proverbial Hermle precision in conjunction with process consultation and project management has made us an important machine manufacturer in nearly all key sectors: from large complex components to the smallest components in the high-tech area. Versatile applications, uncompromising results – Hermle “The Original”.

# Contents.

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02 The machine	6
03 Technical data	29
04 Automation	35
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# 01 Industry sectors

Hermle is at home in all sectors. For us, ensuring the highest precision and reliable machining is always paramount. Our machining centres are made for daily operation, whether as linked linear segments in production or as stand-alone workshop machinery.

*Aerospace industry*



*Machine construction*



*Motor sports and racing*



*Subcontractor industry*



*Tool and mould construction*





# 02 The machine

The C 62: a highly dynamic machining centre designed consistently for 5-axis/5-side machining.  
Features galore to ensure high-precision, economical parts production. Numerous automation solutions extend the application range many times over.



## TECHNICAL DATA

Traverse X-Y-Z:	1200 - 1300 - 900 mm
Speed:	9000 / 14000 / 16000 rpm
Rapid linear traverses X-Y-Z:	50 m/min
Linear acceleration X-Y-Z:	6 m/s <sup>2</sup>
Control unit:	TNC 640 / 5840 D sl
Swivelling rotary tables:	
Table with torque:	0 900 mm
Swivelling range:	+/- 130°
A-axis speed:	15 rpm
C-axis speed:	30 rpm
Max. table load:	2500 kg
Table with torque:	0 1350 x 1100 mm
Swivelling range:	+/- 130°
A-axis speed:	15 rpm
C-axis speed:	30 rpm
Max. table load:	2500 kg



# 02.1 The machine . MT

Combines highly dynamic milling/turning simultaneously in up to 5 axes; thanks to the revolutionary MT design, all turning operations can be performed even with the table swivelled. The C 62 U MT machining centre can also process workpieces up to 2500 kg in weight.

## TECHNICAL DATA

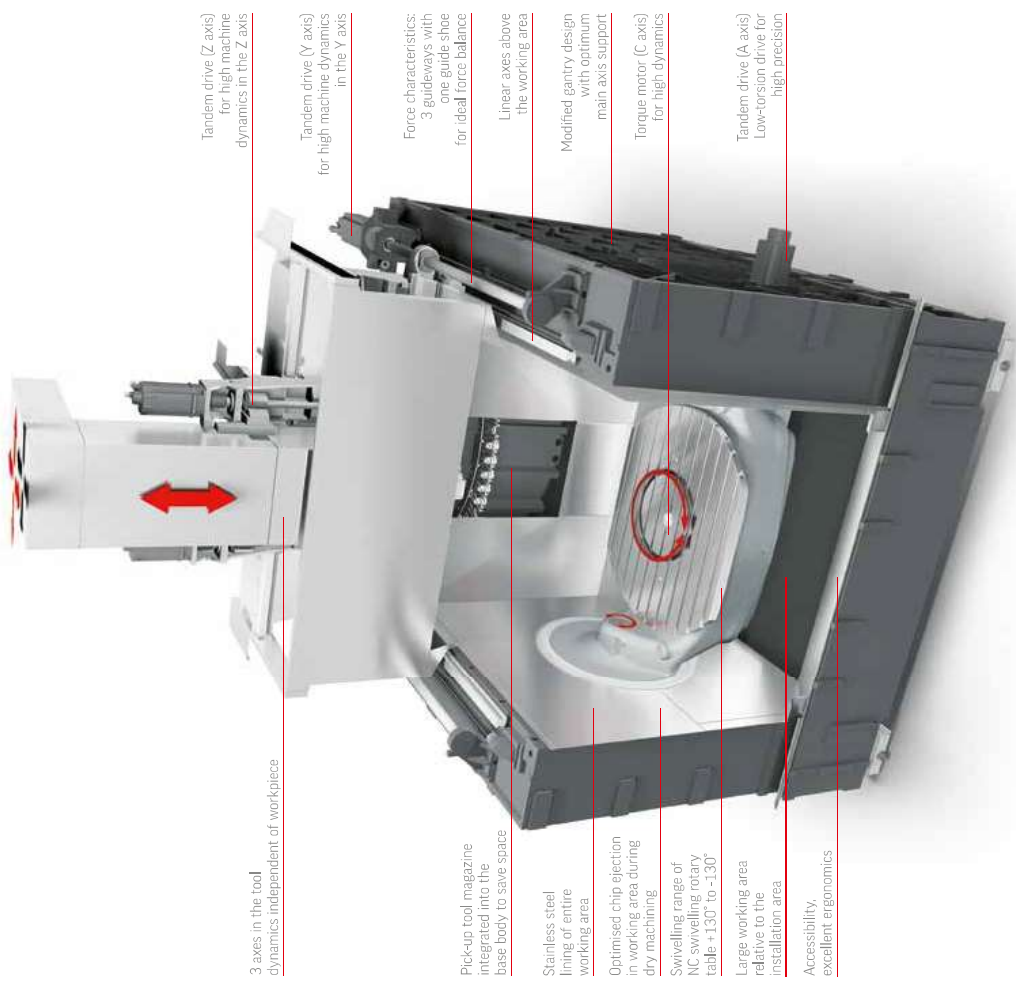
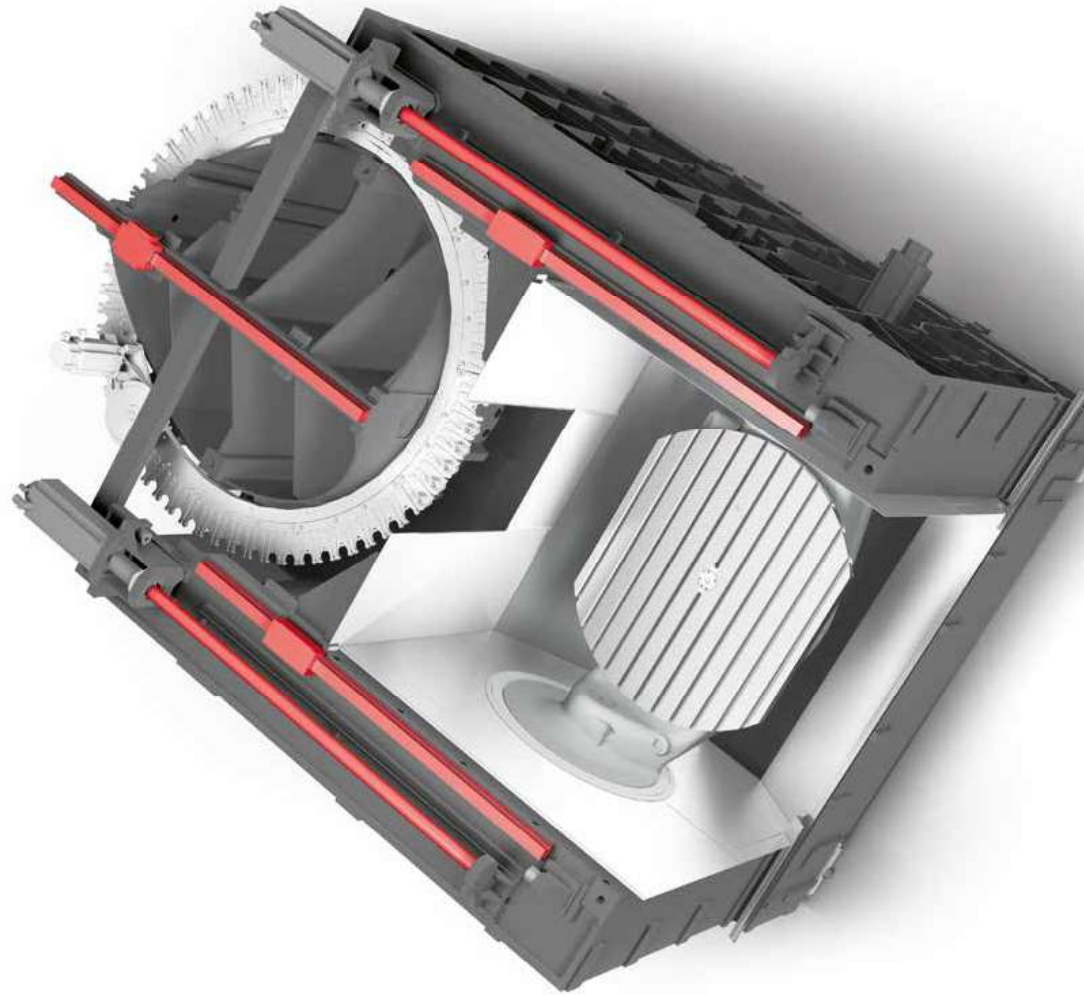
Traverse X-Y-Z:	1200 - 1300 - 900 mm
Speed:	9000 / 14000 / 18000 rpm
Rapid linear traverses X-Y-Z:	50 m/min
Linear acceleration X-Y-Z:	6 m/s <sup>2</sup>
Control unit:	TNC 640 / 5 840 D sl
Swivelling rotary table:	0 1200 mm
Table with torque:	+/- 130°
Swivelling range:	15 rpm
A-axis speed:	400 rpm
C-axis speed:	1500 kg
Max. turning table load:	2500 kg
Max. milling table load:	

- Fully integrated rotary technology
- Integrated balancing system
- Reinforced cabin roof
- Milling operations: 5-side machining / up to 5 axes simultaneous machinings
- Turning operations: Horizontal/vertical turning, up to 5 axes simultaneous machinings



# 02.2

## A new dimension of dynamics



3 axes in the tool dynamics independent of workpiece

Tandem drive (Z axis) for high machine dynamics in the Z axis

Tandem drive (Y axis) for high machine dynamics in the Y axis

Force characteristics: 3 guideways, with one guide shoe for ideal force balance

Pick-up tool magazine integrated into the base body to save space

Stainless steel lining of entire working area

Optimised chip ejection in working area during dry machining

Swivelling range of NC swivelling rotary table +130° to -130°

Large working area relative to the installation area

Accessibility, excellent ergonomics

Linear axes above the working area

Modified gantry design with optimum main axis support

Torque motor (C axis) for high dynamics

Tandem drive (A axis) Low-torsion drive for high precision

## 02.3

# The workpiece

Many important points must be observed in order to guarantee that every workpiece is machined perfectly. For this reason, Hermle has been working on perfecting and optimising the machining process for many years. This is the reason that the C 62 is now equipped with:

- The largest working area relative to the installation area
- The largest swivelling range of workpieces in the working area
- Utilisation of the entire traverse range
- A large collision circle between the table flanges

### THE WORKPIECE DIMENSION

- Unhindered crane loading from directly above the table centre
- When loading the crane the spindle moves to the magazine – this means the working area is completely clear and accessible
- Extensive automation solutions for optimum workpiece handling



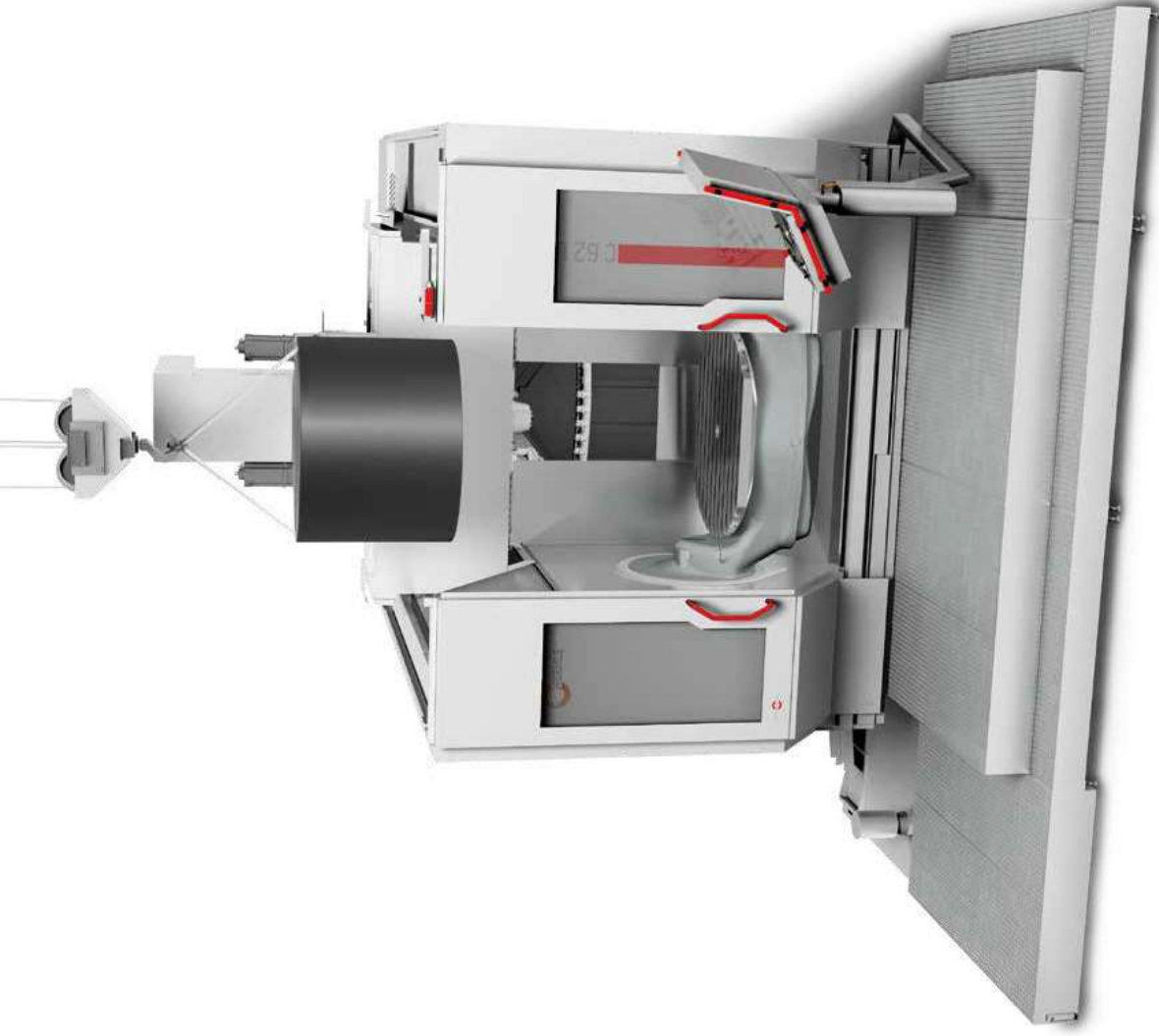
**5-axis/MT**

**Ø 1200 x 900 mm**

**max. 2500 kg**

**MT: max. 1500 / 2500 kg**

**Collision circle: Ø 1400 mm**

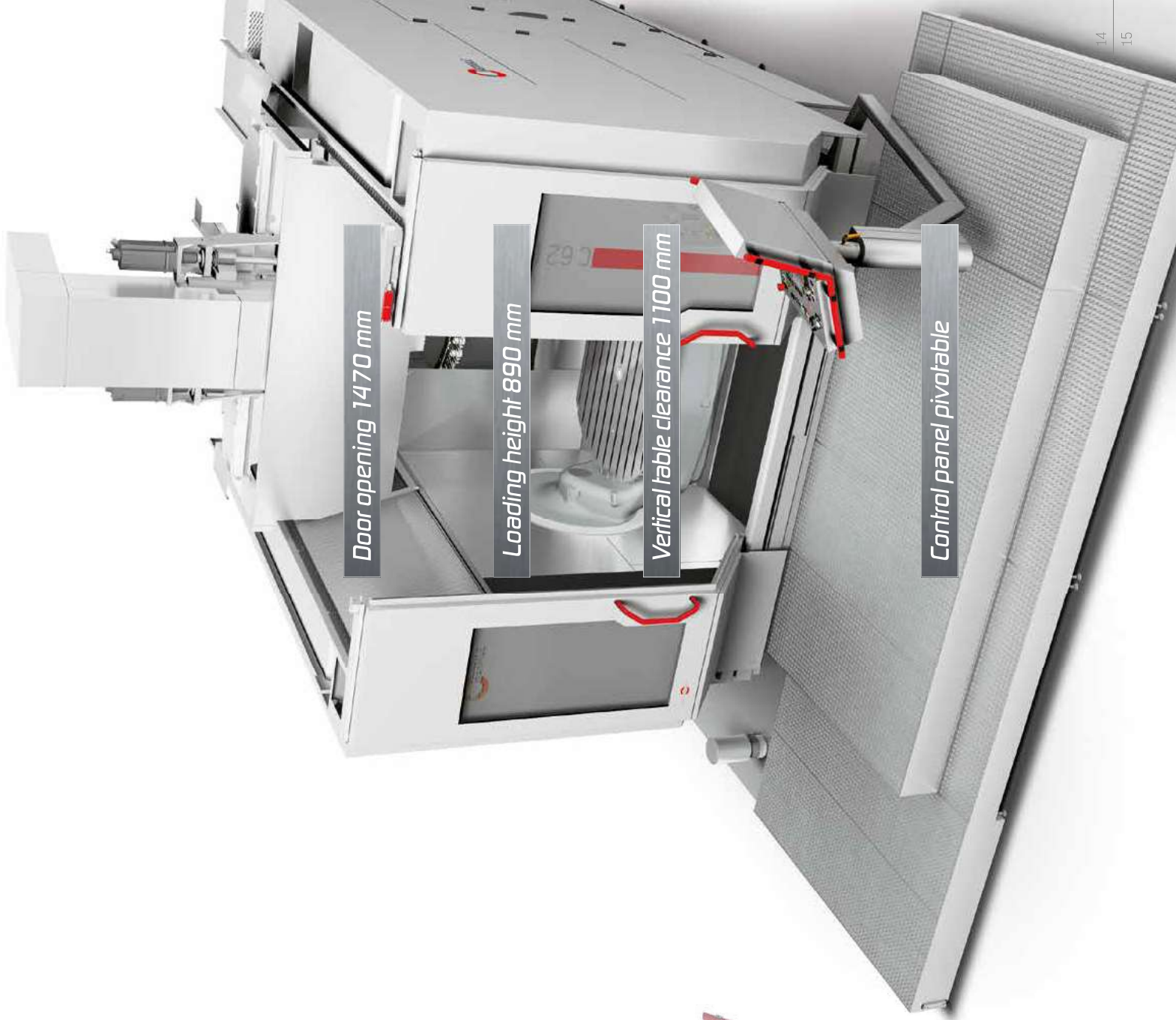


**5-axis machining**



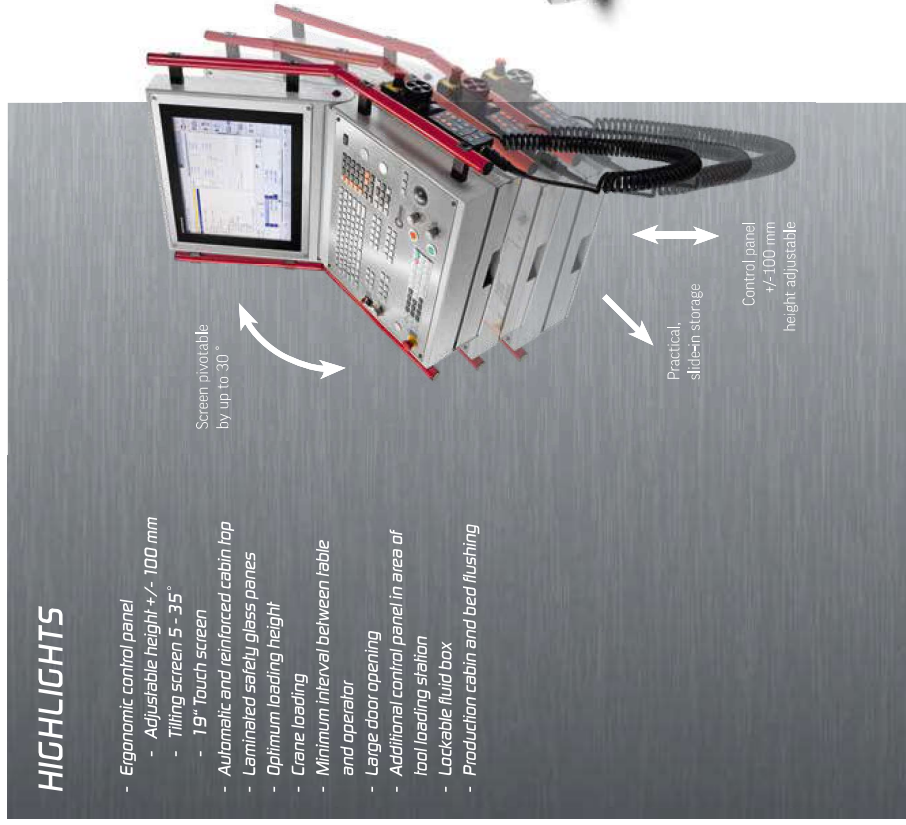
## 02.4 Ergonomics

Built for daily use: the Hermle C 62 can be ergonomically adapted for every machine operator for optimum ease of use, simple operation and uncomplicated maintenance.



### HIGHLIGHTS

- Ergonomic control panel
  - Adjustable height +/- 100 mm
  - Tiling screen 5 - 35°
  - 19" Touch screen
- Automatic and reinforced cabin top
- Laminated safety glass panes
- Optimum loading height
- Crane loading
- Minimum interval between table and operator
- Large door opening
- Additional control panel in area of local loading station
- Lockable fluid box
- Production cabin and bed flushing



# 02.5

## Table variants

Hermle's NC swivelling rotary table has revolutionised the concept of 5-axis machining. Also with the C 62, five axis operation is a key attribute, this capability is enhanced through the use of a torque drive. All tables are manufactured exclusively and entirely at our plant in Gosheim.

Uncompromised perfection: this drive design accesses the gear on the table housing directly and so only minimal shaft torsion occurs on the table. This is the only way to achieve the highest precision.

Made in Germany – made in Gosheim: the C 62 table variants stand for the highest quality and optimum material usage from the cast housing to the installed torque motors. At our main plant in Gosheim, these tables are laying the foundations for the precision, accuracy and quality of the machined surfaces.



Hermle tables are equipped with cutting edge drive technology for high dynamic performance during 5 axis machining, as it is the slowest axis that determines the speed when milling in 5 axes. High-torque motors and the adapted gear can position loads of up to 2500 kg rapidly and, most importantly, with exceptional precision.

### TECHNICAL DATA

- High degree of freedom in working area
- Very high table load (up to 2500 kg with the highest accuracy)
- No accumulation of chip on the table (swivel table)
- Swivelling axis A and rotary axis C are located within the workpiece (U-shape)
- Minimum torsion due to tandem drive
- Wide spacing between the A axis flanges results in very large collision circle
- High swivelling range for undercuts

#### Torque table

- High dynamics
- Direct, absolute measuring system

### DRIVE TECHNOLOGY

- Central table load
- Drive directly on table housing = low torsion A axis
- Direct, absolute measuring system
- Good maintenance accessibility
- A axis integrated in machine bed

#### Tandem drive

- Mechanical tandem drive to left and right of table housing



# Swivelling rotary table

C-axis drive type: torque



The "Torque" Swivelling rotary table provides the ideal conditions for highly dynamic 5-axis and simultaneous 5-axis machining.



Clamping surface:	Ø 900
T grooves:	parallel 7 / 18 H7
Swivelling range:	+/- 130°
C-axis drive type:	Torque
Speed - rotary axis C:	30 rpm
Speed - swivelling axis A (tandem drive):	15 rpm
Max. table load:	2500 kg



Zero-point clamping systems / pallet clamping systems



Clamping surface:	Ø 1350 x 1100
T grooves:	parallel 11 / 22 H7
Swivelling range:	+/- 130°
C-axis drive type:	Torque
Speed - rotary axis C:	30 rpm
Speed - swivelling axis A (tandem drive):	15 rpm
Max. table load:	2500 kg

# Swivelling rotary table . MT

C-axis drive type: torque



Clamping surface:	Ø 1200
T grooves:	star 16 / 22 H7
Swivelling range:	+/- 130°
C-axis drive type:	Torque
Speed - rotary axis C:	400 rpm
Speed - swivelling axis A (tandem drive):	15 rpm
Max. turning table load:	1500 kg
Max. milling table load:	2500 kg



Zero-point clamping systems / pallet clamping systems



# 02.6 Spindles

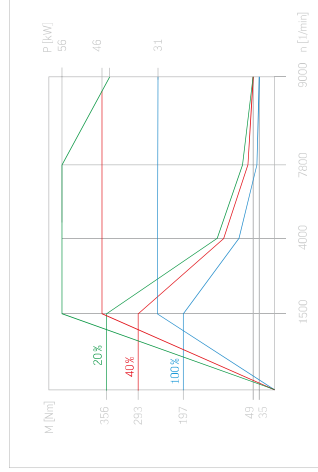
The C 62 features compact spindles. All the spindles can be replaced easily and quickly during servicing. With the different speed ranges and tool holding fixtures the spindles are suitable for a wide range of machining tasks.



## TECHNICAL DATA

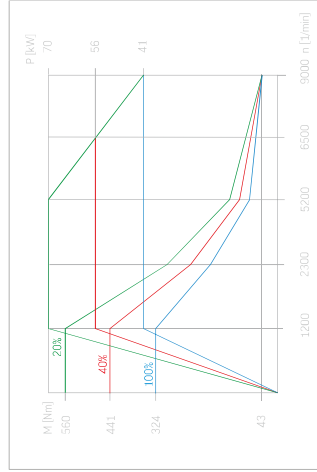
- High-tech spindles for demanding milling processes
- Slim-end spindle for machining deep cavities
- Few projecting edges (prevention of collision)

### Spindle 9000 rpm . MT



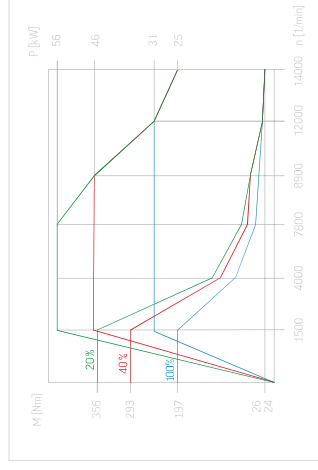
Maximum spindle speed: **9000 rpm**  
 Main Power 20% c.d.f.: **56 kW**  
 Torque 20% c.d.f.: **356 Nm**  
 Tool holding fixture: **SK 50**  
 Spindle: **compact**

### Spindle 9000 rpm . MT



Maximum spindle speed: **9000 rpm**  
 Main Power 20% c.d.f.: **70 kW**  
 Torque 20% c.d.f.: **560 Nm**  
 Tool holding fixture: **HSK T 100**  
 Spindle: **compact**

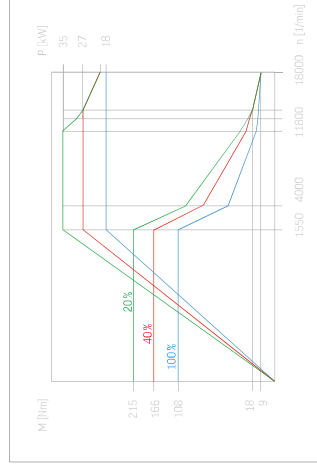
### Spindle 14000 rpm . MT



Maximum spindle speed: **14000 rpm**  
 Main Power 20% c.d.f.: **56 kW**  
 Torque 20% c.d.f.: **298 Nm**  
 Tool holding fixture: **HSK A 63**  
 Spindle: **compact**



### Spindle 18000 rpm . MT

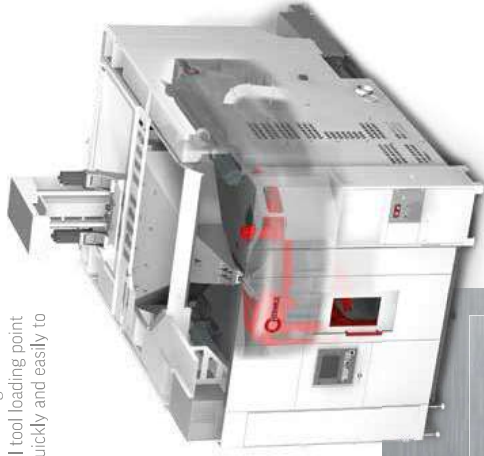


Maximum spindle speed: **18000 rpm**  
 Main Power 20% c.d.f.: **56 kW**  
 Torque 20% c.d.f.: **356 Nm**  
 Tool holding fixture: **HSK A 100 / HSK T 100**  
 Spindle: **compact**



# 02.7 The magazine

The C 62's tool magazine holds up to 70 tools in the standard version and is integrated into the machine bed to save space. On the rear of the machine is the ground-level tool loading point with operator control panel. The integrated tool lift transports the tools quickly and easily to the elevated ring magazine.



## TECHNICAL DATA

Pick-up tool magazine

Integration into the machine bed

Excellent accessibility

Additional control panel next to tool loading point

Covers for tool holding fixture

Ground-level tool loading point with integrated tool lift to standard magazine

Tool changer (pick-up)

Interface:	HSK A 63	HSK A 50 / HSK A 100
Interface MT:	HSK T 63	HSK T 100
Magazine pockets:	70	50
Max. tool weight:	15 kg	30 kg
Max. tool diameter:	Ø 160 mm	Ø 250 mm
	with corresponding adjacent pocket allocation	
Max. tool length:	500 mm	500 mm
Max. magazine load:	560 kg	550 kg
Chip-to-chip time:	approx. 9.5 s	approx. 9.5 s

## Additional magazine

The Hermle additional magazine, for space-optimised expansion of the tool storage capacity. Adjustable feet with integrated transport rollers facilitate attachment to the Hermle machining centre C 62. The additional magazine is available as a single or double version.

## Additional magazine single



## Additional magazine double



## HIGHLIGHTS

Only 3 m<sup>2</sup> footprint

Up to 325 tool pockets (depending on the interface)

Loading and unloading position with 2 x 2 or 2 x 3 tool pockets (depending on the interface)

With an additional control panel

Adjustable feet with integrated transport rollers

Two magazines that can be combined



# 02.8 Control unit

The C 62 is offered with two control types. Both controls offer various program functions. Hermle simplifies programming and operation still further with comprehensive extra features.

**Included already in the control standard version:**

Hermle Navigator – the graphical user interface for intuitive control

Hermle Home – the user-specific individually configurable user interface

Hermle machining setups – heavy-duty machining cycle, production cycle, 3D contour tolerance and 3D contour smoothing cycle

Hermle controller parameters – specially for the TNC 640 – AFC, ACC, trochoidal milling, CTC, AVD, LAC

## Heidenhain

### Heidenhain TNC 640

- Dynamic efficiency – Active Chatter Control (ACC), Adaptive Feed Control (AFC), trochoidal milling
- Dynamic precision – Cross Talk Compensation (CTC), Active Vibration Damping (AVD), Load Adaptive Control (LAC)
- TFT colour touchscreen 19"
- Keyboard unit with full keyboard, integrated trackball, USB and Ethernet interface
- Fully digital with HSCI interface and EnDat interface
- Programming in Heidenhain plain text or per DIN/ISO
- Standard drilling and milling cycles
- Touch probe system cycles
- Free contour programming
- Special functions for fast 3D machining
- Automatic calculation of cutting data
- Software option Kinematic Opt (measurement cycle for improving accuracy of rotational and swivelling operations)
- Further special turning cycles are integrated such as roughing, finishing, grooving and threading
- Easy to switch from milling to turning mode



## Siemens

### Siemens S 840 D sl

- TFT colour flat screen 19"
- Keyboard unit with full keyboard, additional panel with integrated trackball, key-operated switch and buttons
- USB and Ethernet interface
- Complete and flexible diagnostics and service concept
- Incl. shell transformation, 5-axis transformation, process-oriented measuring, 3D tool radius correction and spline interpolation
- Incl. software option Kinematic Opt (measurement cycle for improving accuracy of rotational and swivelling operations)
- Tool management for all machines: HOTS
- The S 840 D sl is also equipped for turning mode and can handle all integrated milling and turning processes
- User interface OPERATE with ShopMill



For further advantages and technical data, please see the Siemens brochures.

For further advantages and technical data, please see the Heidenhain brochures.



Siemens S 840 D control panel comfort with the Home screen

TNC 640 control panel comfort with the „Navigator“ operating concept



# 02.8 Control unit

## Industry 4.0 and the Smart Factory.

The digital transformation is now becoming the focus of many different production operations. Hermle is there to provide support while you chart your individual course towards Industry 4.0 and the smart factory. We offer a wide range of software solutions for improving your efficiency, precision and productivity. Our digital components represent links in the chain of smart production. We can work together in order to find out what your operation needs.

### Hermle "Automation Control System"

Convenient automation and order management software developed in-house by Hermle.

### Hermle "Information-Monitoring-Software"

The "Information-Monitoring-Software" is used to display the live status of machines and send events via e-mail.

### Hermle "Tool-Management-Control"

Simple Hermle tool management for Heidenhain controls.

### Hermle "Wear Diagnosis System"

Machine status is continually monitored by the Hermle wear diagnosis system. It facilitates rapid machine diagnostics and status-oriented detection of maintenance tasks.

### Hermle "Machine Tuning"

The intelligent machine tuning – dynamic adaptation of the controller parameters and machining setups.

### Hermle "Remote Desktop"

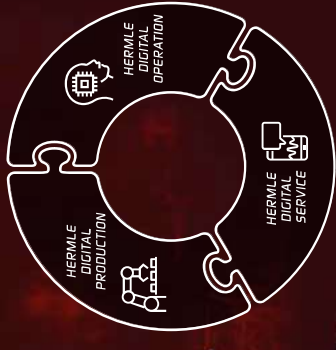
Connecting from the control with each PC in the network and exchange or display data.

### Hermle "Operator-Menu-Extension" – Home screen

Operator-specific individually definable interface. All significant parameters at a glance, such as spindle utilisation, HIMS and HACs.

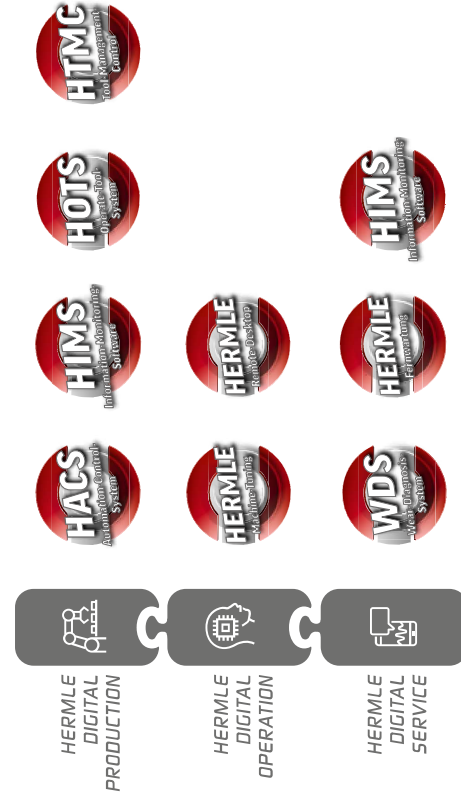
### Hermle "Navigator"

Intuitive operation via a graphical interface. Optimised for touch control. Direct access on a variety of relevant information such as settings and maintenance.



## Digital components

With Digital Production, Digital Operation and Digital Service components, we can put together a comprehensive package that will put your Hermle machining centres on a firm footing for future tasks: intelligent order management and transparent machining processes, smart machine tuning, paperless manufacturing and sophisticated technology cycles, as well as options for remote or preventive maintenance. Our digital components improve productivity, ease of operation and efficiency.



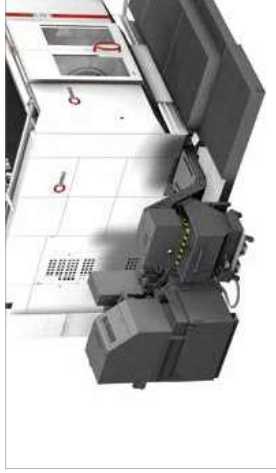
## 02.9

### The details

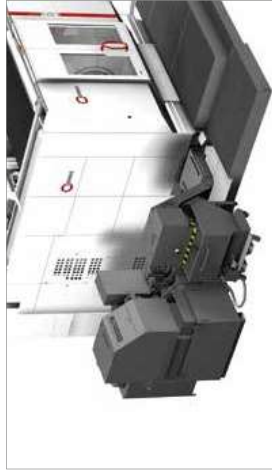
The C 62 is built using an elegant cassette panel construction. This high-tech building block concept is used throughout from the standard machine to the flexible manufacturing system. The machining centre can be transported without any disassembly and set up without a foundation. Furthermore, all units are arranged for easy maintenance and servicing.



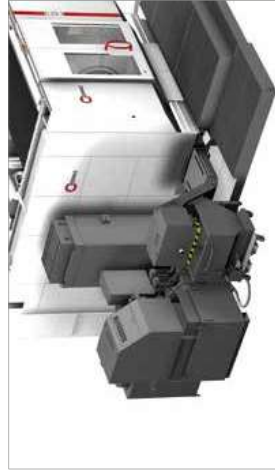
Chip conveyor



Chip conveyor with internal cooling lubricant supply ICS 80



Chip conveyor with internal cooling lubricant supply ICS 80 and temperature controller



Chip conveyor with internal cooling lubricant supply ICS 80, temperature controller and emulsion mist extraction

#### HIGHLIGHTS

*Comprehensive fluid technology*

*Optimised chip management*

*Diverse cooling lubricant units*

*We provide the correct method of chip removal from the working area for all kinds of chip*

## 03

### Technical data . C 62



# 03.1 Technical data . C 62

## Working area

Traverse	X axis	1200 mm
Traverse	Y axis	1300 mm
Traverse	Z axis	900 mm
Rapid linear traverses	X-Y-Z	50 m/min
Linear acceleration	X-Y-Z	6 m/s <sup>2</sup>
Linear feed force	X-Y-Z	16000 N
Max. vertical table clearance		1100 mm
Max. workpiece diameter		Ø 1200 mm
Max. workpiece height		900 mm
Collision circle (A axis) in 0° position		Ø 1400 mm

## Main spindle drive

Speed	9000 rpm	SK 50
Main power/Torque	56 kW / 356 Nm	
Speed	9000 rpm	HSK A 100
Main power/Torque	41 kW / 476 Nm	
Speed	14000 rpm	HSK A 100 / HSK T 100
Main power/Torque	56 kW / 356 Nm	
Speed (MT)	18000 rpm	HSK A 63 / HSK T 63
Main power/Torque	35 kW / 215 Nm	

## Control unit

Heidenhain	TNC 640
Siemens	Simumerik 840 D sl

## Tool changer (pick-up)

Interface	SK 40 / HSK A 63 / HSK T 63	SK 50 / HSK A 100 / HSK T 100
Magazine pockets		70
Chip-to-chip time	approx. 9,5 s	approx. 9,5 s
Max. tool length	500 mm	500 mm
Max. tool diameter	Ø 160 mm	Ø 250 mm
Max. magazine load	560 kg	550 kg

## Extension of tool storage capacity\*

Interface / Interface MT	additional magazine single	additional magazine double	max. magazine load single	max. magazine load double
SK 40	ZM 90 / 115	ZM 220 / 270	90 / 115	220 / 270
SK 50	ZM 72 / 92	ZM 176 / 216	72 / 92	176 / 216
HSK A 63 / HSK T 63	ZM 110 / 135	ZM 265 / 325	110 / 135	265 / 325
HSK A 100 / HSK T 100	ZM 88 / 108 / 128	ZM 212 / 260 / 300	88 / 108 / 128	212 / 260 / 300

\*The tool length depends on the use of the magazine and is at max. 500 mm. More details on request.

## Table variants\*

Swivelling rotary table	Ø 900	Ø 1350	Ø 1200 (MT variant)
Clamping surface	Ø 900 mm	Ø 1350 mm	Ø 1200 mm
Clamping surface flattened on 2 sides	-	1100 mm	-
Swivelling range	+/- 130°	+/- 130°	+/- 130°
C-axis drive mode	torque	torque	torque
Speed - swivelling axis A	15 rpm	15 rpm	15 rpm
Speed - rotary axis C	30 rpm	30 rpm	400 rpm
Max. milling table load	2500 kg	2500 kg	2500 kg
Max. turning table load	-	-	1500 kg
T grooves parallel	7 units / 18 H7	11 units / 22 H7	-
T grooves star			16 units / 22 H7

- Included in standard delivery
- Available upon request

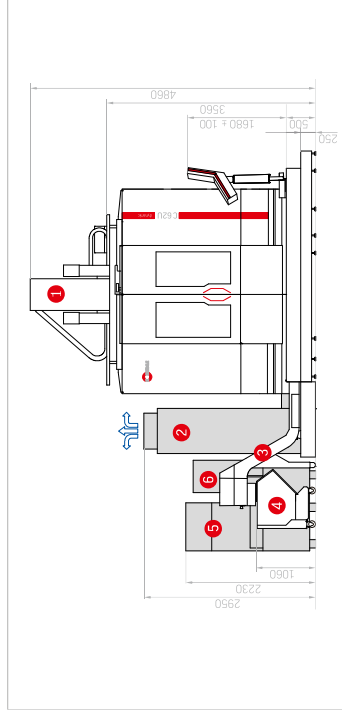
\*All tables available on demand



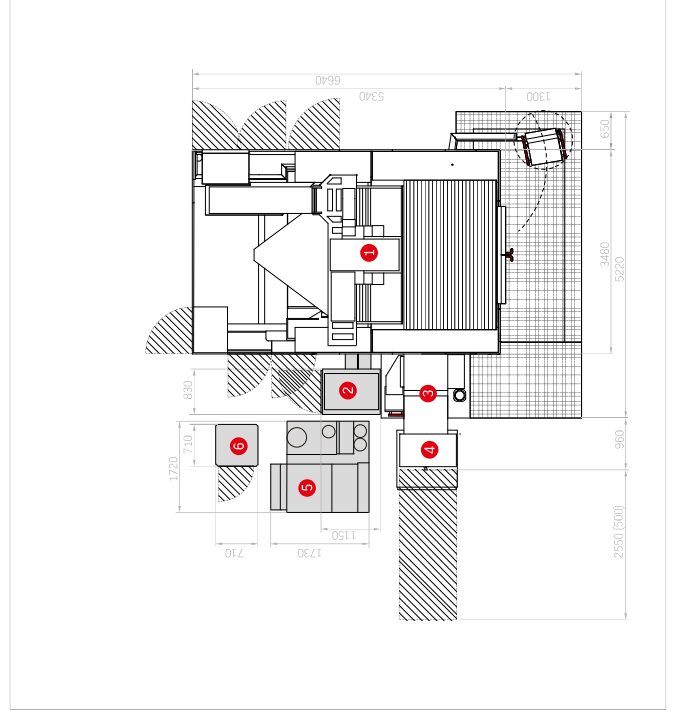
# 03.2 Options

The C 62 is prepared for anything. Numerous optional extras make machining even more efficient and powerful in real applications and enable you to optimise your work with the machining centre still further.

C 62 U dimensions . Additional magazine single / double



- 1 Machining centre
- 2 Emulsion mist extraction
- 3 Chip conveyor
- 4 Chip cart
- 5 Internal cooling lubricant supply
- 6 Temperature controller



## Positional uncertainty

- P in X-Y-Z axes according to VDI/DGQ 3441  
(calculated at a constant ambient temperature of 20 °C +/-1 °C.  
Our products are subject to the German Export Law  
and require authorization since the attainable precision may be  
less/greater than 6 µm.) 0.008 mm

## Chip conveyor

- Scraper belt conveyor
- Slat conveyor
- Chip conveyor ejection height  
at least 940 mm
- Chip cart 450 l ○

## Coolant equipment

- Amount of coolant 600 l
- Pump capacity 5 bar / 140 l/min

## Internal cooling lubricant supply with paper band filter

- Amount of coolant 1650 l
- Pressure max. 80 bar / 39 l/min
- Mains connection (ICS) 400 V / 50 Hz
- Power consumption (ICS) without temperature controller 25 kVA  
with temperature controller 31 kVA

## Hydraulics

- Operating pressure 120 bar

## Central lubrication

- Minimum grease lubrication quantity

## Weight

- (Standard version without optional extras,  
attachments, workpieces and cooling lubricant)

## Connected loads

- Mains connection 400 V / 50 Hz
- Power consumption C 62 U to 114 kVA
- Power consumption C 62 U MT to 114 kVA
- Compressed air 6 bar

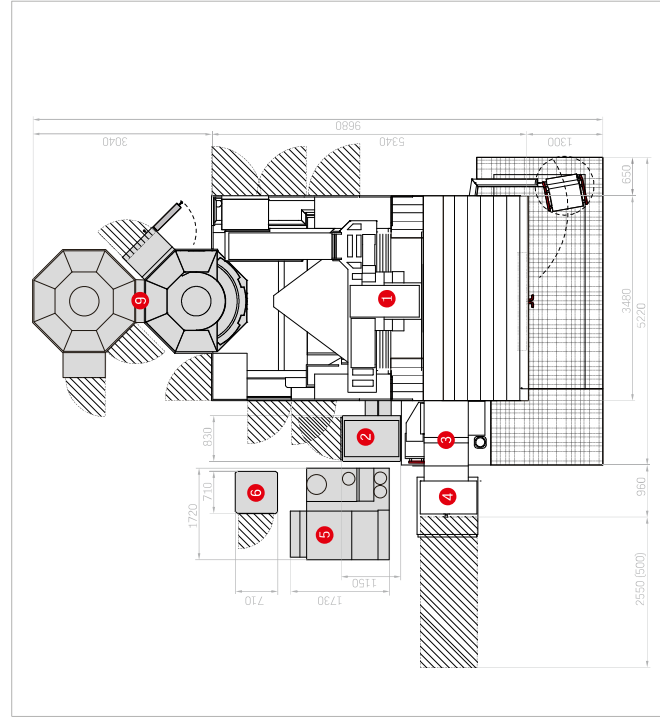
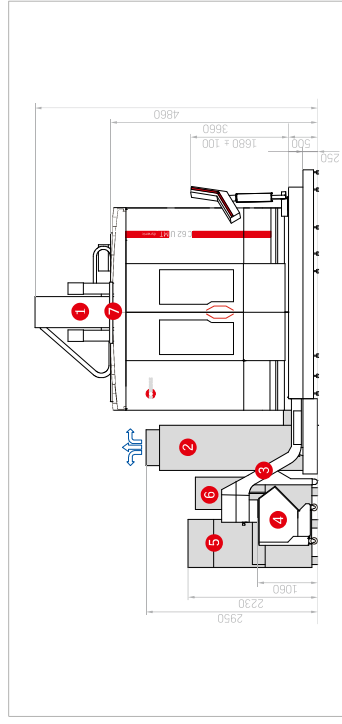
- Included in standard delivery
- Available upon request

## Options

- Automatic cabin door
- External minimum quantity lubrication
- Rotary feedthrough
- Emulsion mist extraction system
- Hand-held control module
- Internal blow air
- Internal cooling lubricant supply
- Comfort control panel
- Touch probe incl. preparation
- Pallet storage
- Pallet changer
- Improvement of visibility
- Chip conveyor
- Coolant nozzle
- Chip cart
- Tool breakage monitoring / measurement
- Additional magazine
- Preparation touch probe system
- Heat compensation
- Tool breakage monitoring / measurement
- Additional magazine

# 04 Automation

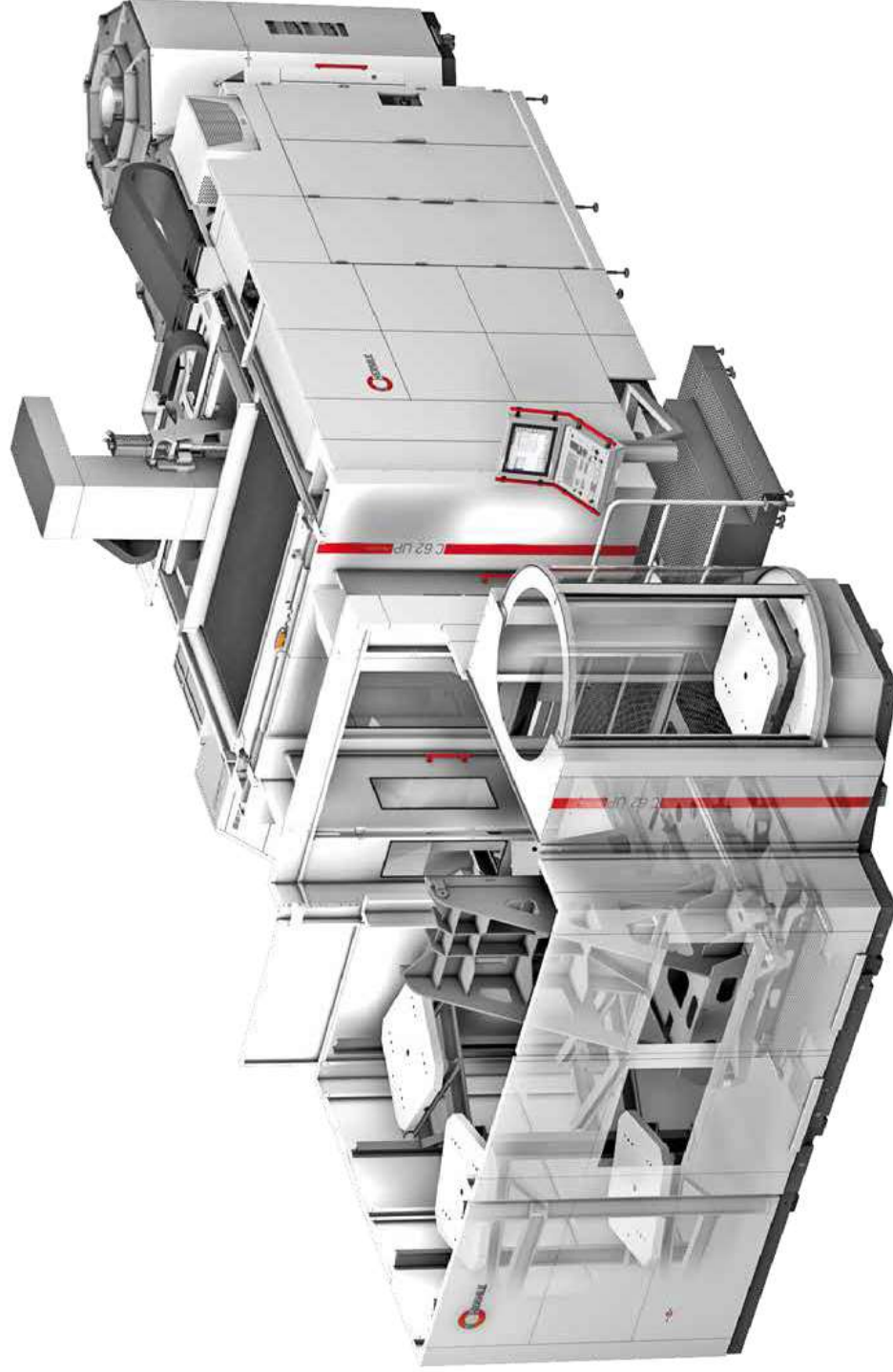
## C 62 U MT dimensions



- 1 Machining centre
- 2 Emulsion mist extraction
- 3 Chip conveyor
- 4 Chip cart
- 5 Internal cooling lubricant supply
- 6 Temperature controller
- 7 Reinforced cabin roof
- 8 C 62 U MT
- 9 Additional magazine single
- 9 Additional magazine double

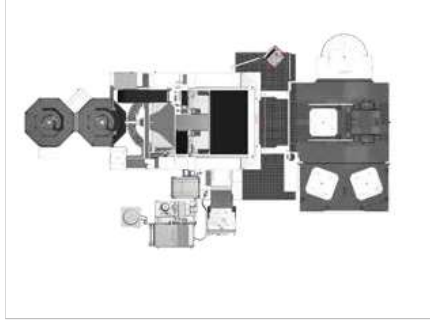
# 04.1 Automation . C 62

Our pallet changer is setting new standards for parallel setup in our highly dynamic machining centres. A further increase in productivity allows for more adaptable storage systems. Machining centres can be set up via pallet storage for production-oriented machine runs with minimum operator interference/without operator interference or for customer-specific runs using a wide range of parts. Furthermore, multiple machining centres can be linked to form a complete manufacturing system.

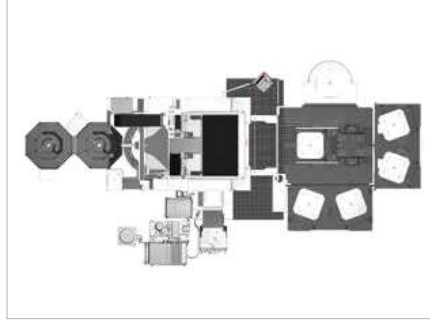


C 62 U with pallet changer PW 3000

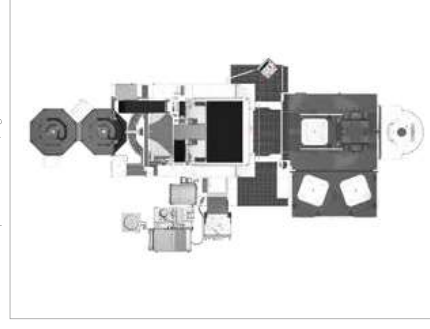
The pallet changer PW 3000 is modular in design. The storage and setup station modules can be configured to adapt to specific positions and quantities.



Pallet changer PW 3000 with one 2/4-pallet storage module and setup station module, right



Pallet changer PW 3000 with two 2/4-pallet storage modules and setup station module, right



Pallet changer PW 3000 with one 2/4-pallet storage module and setup station module, front



# 05

## Precision



**PRECISION IN EVERY DIMENSION:** Hermle has a thorough understanding of the requirements for manufacturing high-precision machining centres for processing smaller and larger workpieces of up to 3.0 t in weight. For this reason, "The Original" only uses German machines for production and materials from European suppliers.

Furthermore, the entire machining production department is fully air conditioned and kept clean by a central swarf disposal system.

Hermle machining centres have also been thoroughly tested by intensive endurance tests and in manufacture-oriented machining processes in our own machining manufacturing department. Our meticulous manufacturing processes allow Hermle to set new precision standards which undercut those demanded by the DIN/ISO 10791 standard in every way.

At Hermle, we distinguish between positioning precision (accuracy with which a certain position within the working area can be pinpointed on one axis) and geometric precision.

The latter is significant for the precision of the entire machine – it encompasses the following factors:

- Positioning of linear and rotary axes
- Straightness and angular deviation of the linear axes
- Rectangularity and parallel alignment of all axes to one other
- Concentricity and axial run-out of the table
- Concentricity of the tool spindle

The precision of Hermle machining centres originates during mechanical production and is not produced by subsequent electronic compensation. This further improves the precision of the individual axes (precision package 1 and 2).



### PRECISION LEVELS

#### Hermle standard:

- X-Y-Z: Positional uncertainty  $P \leq 8 \mu$
- A: Positional uncertainty  $P \leq 8''$
- C: Positional uncertainty  $P \leq 8''$

#### Hermle improved precision\*:

- X-Y-Z: Positional uncertainty  $P \leq 5 \mu$
- A: Positional uncertainty  $P \leq 6''$
- C: Positional uncertainty  $P \leq 6''$

\*To achieve improved precision, components must be selected with care. Tolerances must also be taken into account whilst the machine is still being constructed. Hermle also recommends the HSK-A 63 tool holding fixture, electr. heat compensation, an LCS recooling unit and two-sided A axis drive.

Test and operating conditions are as follows: air conditioned room (+20 °C, +/- 2 °C) and temperature fluctuation of only 0.5 °C in one hour or max. 2 °C within 24 hours.

### IMPROVED PRECISION PACKAGES

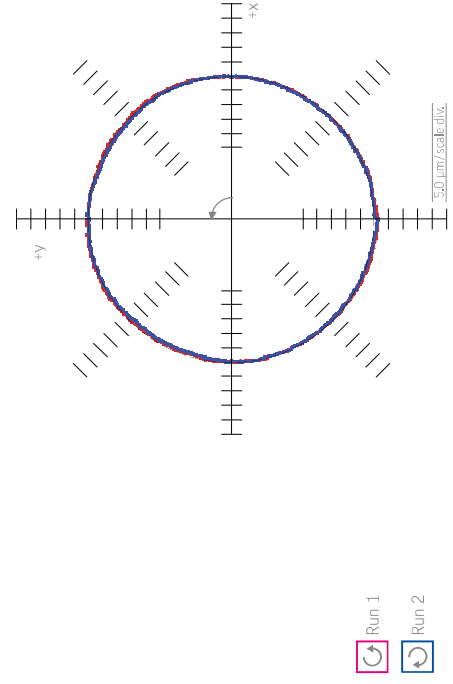
#### Precision package 1 (linear axes X, Y, and Z)

- Straightness optimisation
- Geometry adjustment and optimisation
- Straightness measurement
- X, Y, Z positioning accuracy Pos. tolerance  $\leq 5 \mu$
- Laser measurement according to VDI/DGQ 3441 or ISO 230-2

#### Precision package 2\* (rotary axes A and C)

- Table geometry
- Axial run-out bearings
- C axis position
- Adjustment of complete table
- Position of A and C axes relative to basic geometry
- Indexing precision A 6''
- Indexing precision C 6''
- Laser measurement according to VDI/DGQ 3441 or ISO 230-2

\*not for zero-point clamping system / pallet clamping system and MT variant



# Energy efficiency

Both manufacturer and customer benefit from efficient production processes. Therefore, Hermle has focused on integrated resource sustainability and energy efficiency for many years.

From development to low-energy manufacturing (with a high level of in-house production) to the operation of CNC machining centres – Hermle has stood for a principle of sustainable environmental protection combined with economic considerations for many years. Energy recovery is just one of the advantages enjoyed by our customers.

## EFFICIENT MANUFACTURING

We use energy efficient manufacturing methods not because it is the current trend or because it is required of us, but on principle. And we always have.

Low energy component manufacture

- Mineral casting technology
- Lightweight construction

Virtual machine optimisation / machine development

Reduction in the energy required for transport through:

- High levels of in-house production
- Just one production plant
- Locally sourced components and materials
- No material hoarding

High-quality, high-efficiency components

- Ball screws
- Guideways
- Antifriction bearing etc.

## EFFICIENT OPERATION

Our machining centres are energy efficient both during their manufacture and during operation.

Energy recovery has been standard at Hermle for over 20 years

High quality servo axes

Ideal drive design for the respective application

Demand-based cooling technology both for dimensioning and in application

De-energise system: Up to 80% less energy consumption in stand-by mode

Very long machine service life





# 07 Services

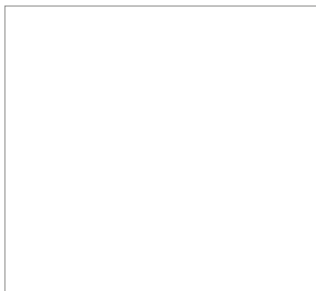
The perfection we insist on for the development and production of our machines is also mirrored by our service department. Our service team provides more than just spare parts and rapid response support within hours. At Hermle, we see ourselves as a comprehensive service provider which provides customers with numerous benefits.

Alongside standard services, these include:

- Our superior, cost-effective, practical and flexible training programs carried out by sales representatives directly at the customers' premises.
- Our continual pursuit of optimization and perfection. Our motto – those who stop improving today will not make the grade tomorrow.
- Intensive expert consultation on milling in general, programming and handling of our products.
- Our application technicians who are experts in machining processes and who are quick to assist and advise our customers.



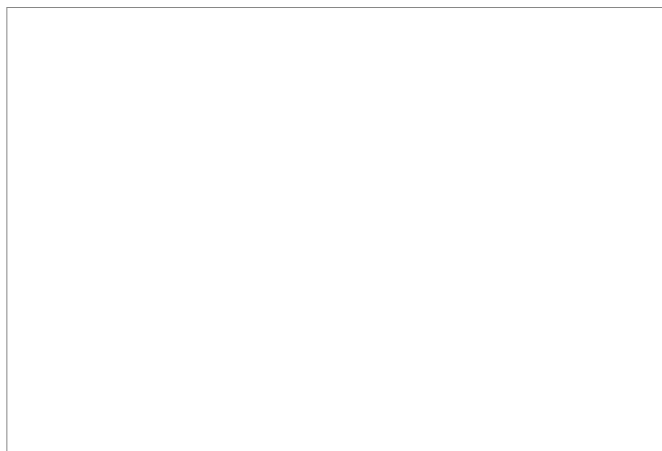




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