



# MultiCenter

Multifunctional horizontal machining center





## As flexible as your manufacturing tasks - 360° turning solutions from WEISSER

Just as chameleons can adapt to their environment, WEISSER's precision turning machines and multifunctional turning centers adapt to the customers workpieces in the best possible way. In addition, WEISSER keeps an eye on the complete manufacturing process and offers the most economical solution for all requirements with its TURNKEY solutions.

# MultiCenter

## Versatile machining possibilities for precision and flexibility

The MultiCenter presents itself as multifunctional machining center with different options. Beside the option as pure turning machine it can also be configured as turning-milling center. Due to its remarkable flexibility the MultiCenter is used in different industrial sectors. Amongst others in precision technology, aerospace, mechanical engineering, medical engineering and many other industrial sectors.

The basic machine of the MultiCenter impresses with a horizontal spindle arrangement and a compact design. The machine column made of high-quality grey cast iron, strongly ribbed and with extraordinary stiffness, offers optimum damping characteristics. The design of the working area walls guarantees an efficient removal of chips. The spacious working area door enables a simple scaffolding and resetting, as well as quick changes of chucks and tools.





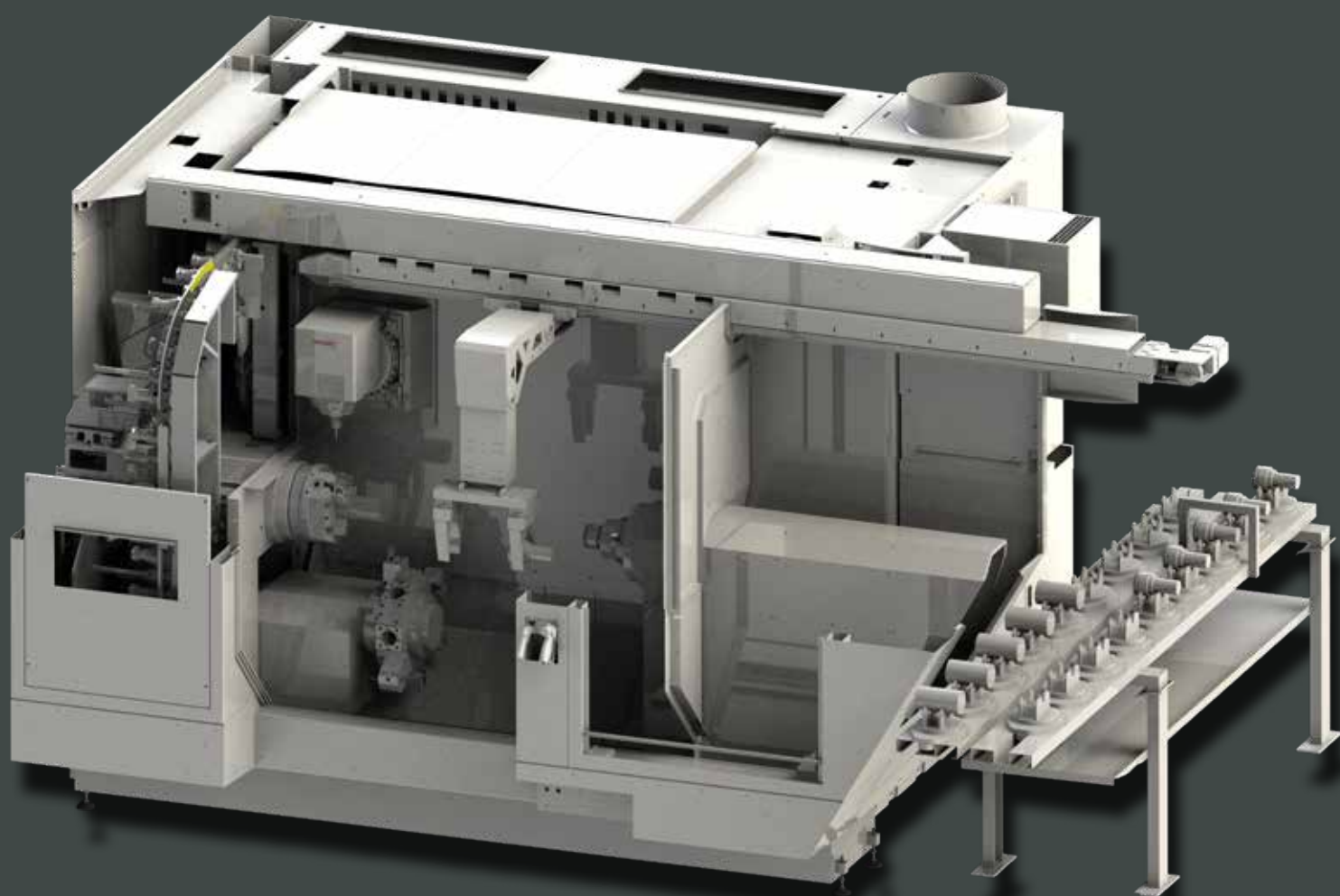


The MultiCenter-machine is characterized by outstanding quality and generates surfaces of highest excellence. It guarantees maximum precision and process reliability. In addition it disposes of excellent vibration damping and extraordinary flexibility to meet the requirements of sophisticated tasks. The option of the integrated loading-and unloading handling function in the MultiCenter enables the approaching of both spindle noses by means of NC-axes. Workpieces can be picked-up from the main spindle as well as from the counter spindle by means of individual grippers.

## Conceptual advantages MultiCenter

- **Small depth of engagement and easy setting-up:** With a depth of engagement of only 455 mm between machine front and spindle axis the setting-up is simplified.
- **Big field of tool application:** the MultiCenter is designed for big tools up to max. 330 mm.
- **Efficient automation:** The seamless integration of loading-and unloading handling in the machine area is optional and creates a high degree of automation at low cost.
- **Ergonomic operation:** The optional swivel-type operator panel which is height-adjustable up to 240 mm offers a comfortable and ergonomic operation.
- **Customizable chip removal:** The flexible option of the chip conveyor arrangement (right or left) optimizes the space requirement and the work environment.
- **Easy maintenance:** The chip conveyor can be pulled laterally and from the front, this facilitates maintenance and cleaning and reduces downtimes.

# Design MultiCenter\*



\*using the example of a machine of a type MTS 1200/8

## Main spindle

A6: 5.700 rpm / 24 kW / 191 Nm / 65 mm bar capacity

A8: 3.200 rpm / 52 kW / 795 Nm / 105 mm bar capacity

## Counter spindle

A6: 5.700 rpm / 24 kW / 191 Nm / 65 mm bar capacity

A8: 3.200 rpm / 52 kW / 795 Nm / 105 mm bar capacity

## Tilting milling spindle

12.000 / 20.000 min<sup>-1</sup>

B-axis  $\pm 120^\circ$  (HSKT-T63)

Y-axis +130 / -80 mm

## Tool carrier

with 12-position turret

tools BMT 65 / VDI 40

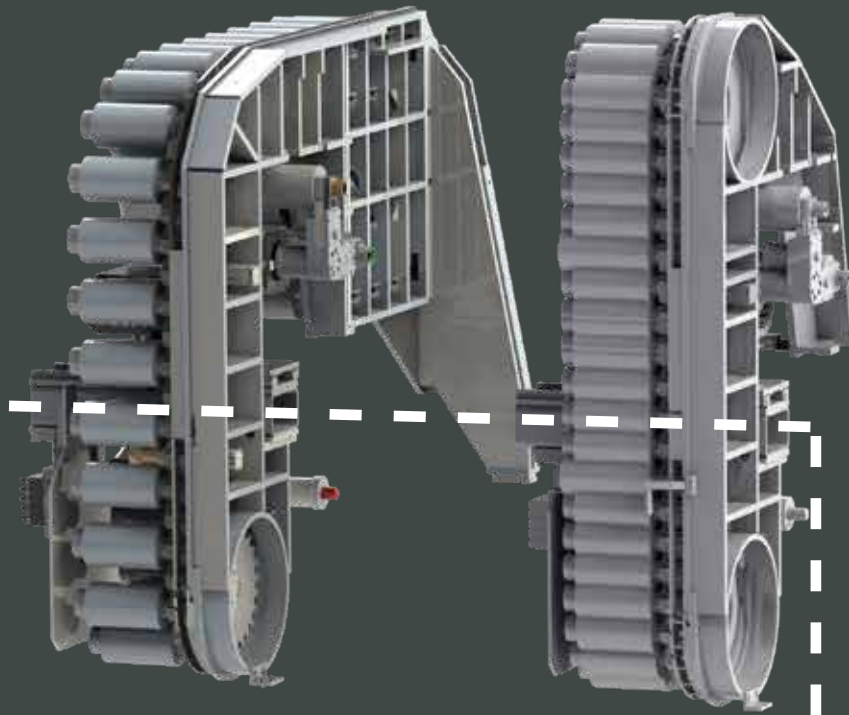
with tool drive 6.000 / 12.000 min<sup>-1</sup>

## Tool magazine

Chain magazine with 47 or 102 tools



# Options



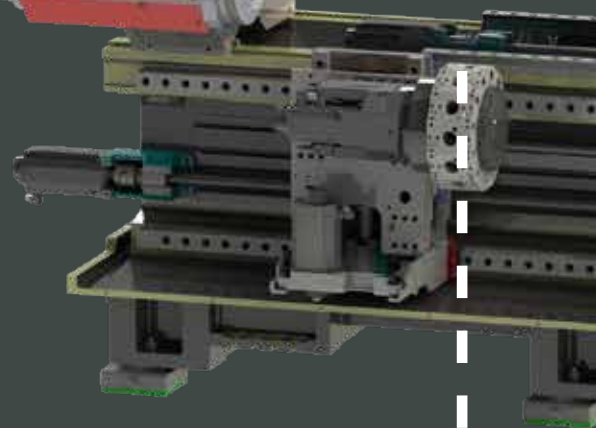
## Efficient tool changer

Available with tool capacities of either 47 or 102 tools.



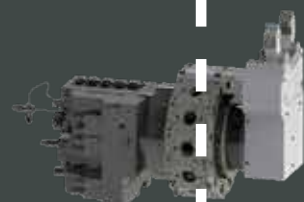
## Main spindle

optionally available with A6- or A8-flange.



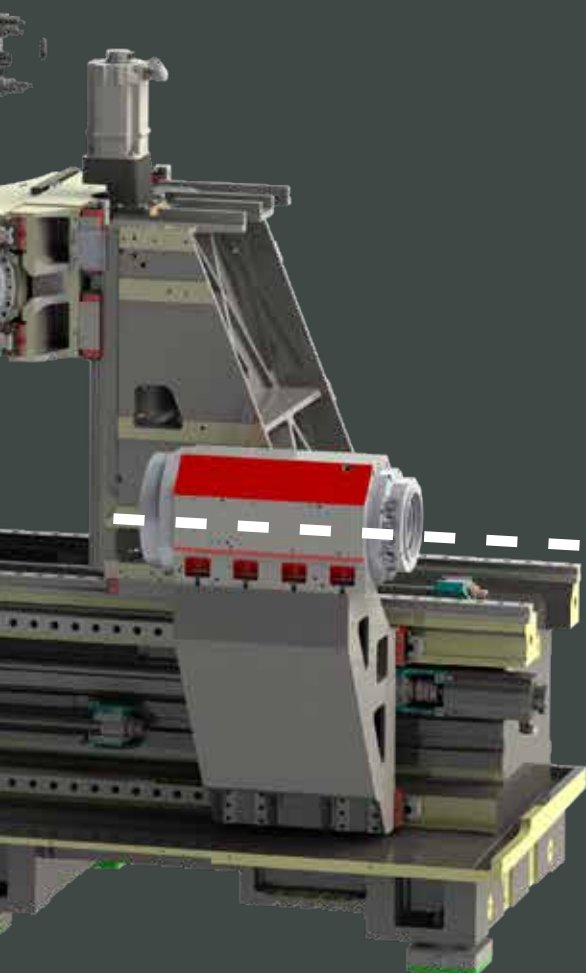
## Customizable turret equipment

You can choose optionally between tool direct drive, rotational turning function or steadyrest for the turret.



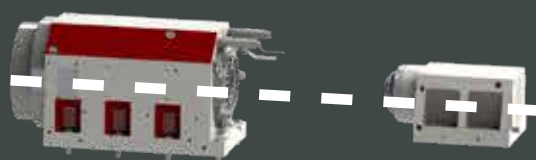
## Flexible options

You can choose between LMD-head, turret or milling spindle.



## Counter spindle

Decide on a counter spindle with A6- or A8-flange or a NC-tailstock with MIK5.





# Technical highlights

## Optional: Integrated loading-and unloading handling for main-& counter spindle

The MultiCenter disposes of an integrated loading-and unloading handling with a NC-axis for precise approach of both spindle noses. Workpieces are picked-up from main-and counter spindle by means of grippers. The pick-up is carried out outside the machine tool right side. This enables a smooth process. Two guide rails in combination with four carriages provide for stability. The modular design allows various gripper configurations to customize requirements.

There are different gripper options available, including a configuration with two grippers. These can be easily customized by means of quick-change system from Ø5mm up to Ø160mm gripper finger diameter.



## The technical data of the part handling at a glance

|                             |                                           |
|-----------------------------|-------------------------------------------|
| Max. Part length            | 600 mm (at 2 workpieces max. 300 mm each) |
| Max. Workpiece total weight | 20 kg                                     |

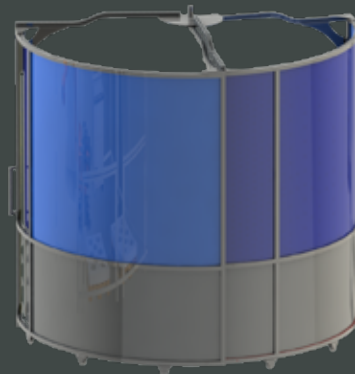
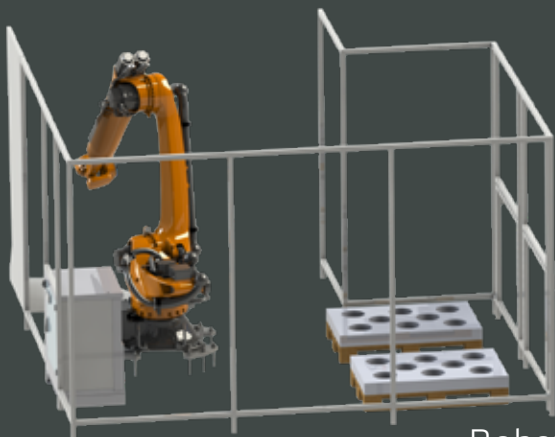


# Automation solutions



## Bar loader

Optimum bar loading by minimum distance between main spindle and machine guard.



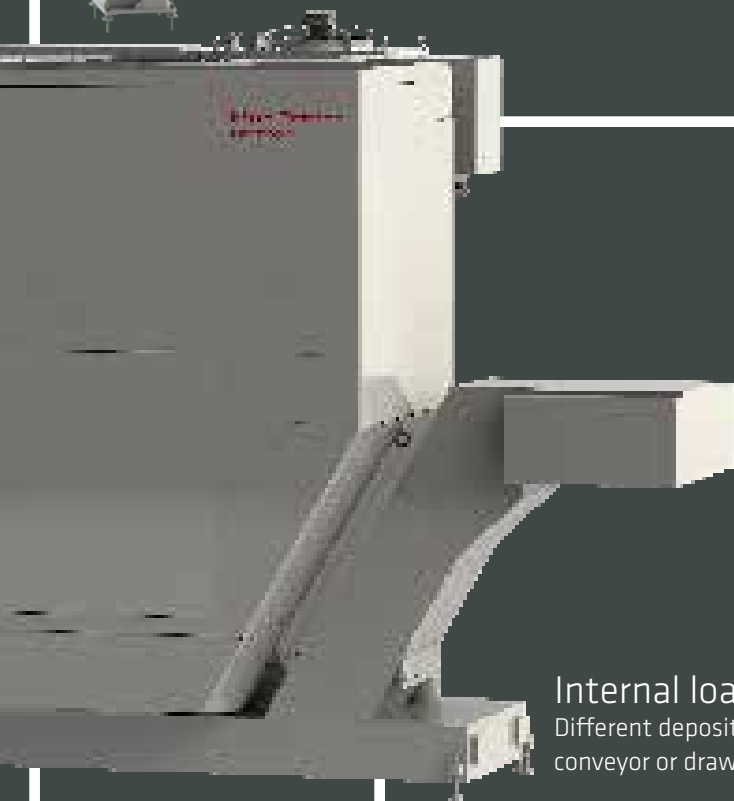
## Robot cells

Efficient loading of offcuts by use of pallets or magazines.



## Gantry loading

Optimally suitable for the seamless interlinking with other machines.



## Internal loading- / unloading handling

Different deposit-resp. pick-up possibilities as prism chain conveyor or drawer possible.



## Chip conveyor

Customizable chip discharge to the right or left to adapt optimally to the automation solutions or local conditions.



# Management systems

## WEISSER energy management: Efficiency for sustainable use of resources

The WEISSER energy management offers different opportunities for energy saving:

- At the braking of the spindle drives and NC-axis-drives the surplus energy is fed back into the supply circuit whereby an effective energy recovery is achieved.
- The hydraulic motor is switched off automatically 30 min. after inactivity, if there is no program running and no manual operation is carried out.
- The sealing air for scales and spindles is switched off after 20 min by a delayed valve to optimize the air consumption.
- The chip conveyor stops automatically 2 min after end of the program and works in interval operation (by H-function individually program mable).
- The cooling lubricant pump stops after an adjustable overtravel time, this enables a targeted control of the cooling.
- The workpiece transport equipment stops after a defined overtravel time, this can be adapted individually by the H-function.
- The LED-technology of the machine illumination is switched off automatically 20 min after the last operation to minimize the power consumption.
- The control cabinet illumination goes out when closing the control cabinet doors, this leads to an efficient use of the illumination.



## WEISSER temperature management: Efficient heat reduction

At WEISSER-machines additional equipment for the targeted reduction of the heat development is implemented:

- An intelligent cooling water temperature control supports the thermal stabilization of the machine mechanics.
- At the control panel there are different fluid-and component temperature profiles visualized.
- A machine roof which is completely closed minimizes the influence of short-term temperature fluctuations.
- The temperature control of the machine increases the thermal stability of the machine.

By the WEISSER temperature management not only the life of your machine can be extended, but also the precision and reliability of your production can be increased considerably.



# Technologies

## Rotational turning

With the rotation turning process developed and patented by WEISSER, precisely machined surfaces can be generated with twist-free finishing precision and thus replace the expensive grinding operations. The simultaneous rotation of workpiece and tool cutting edge reduces the machining time by up to 77 % compared with hard turning.

## Gear cutting (hobbing)

Integration of a hobbing module, being the only method to manufacture internal and external gearings with different helix angles and directions in a single machining center. This manufacturing process combines hobbing and slotting by continuous hobbing with maximum feed rate.





## Intelligent technology processes and complete Turnkey systems

WEISSER machining centers with integrated technology concepts are the solution to demands for shorter process times, productivity and process safety. Shorter cycle times and the associated lower unit costs are decisive competitive factors, especially when manufacturing high quantities. WEISSER turnkey solutions not only score at high quantities but also at small quantities with high set-up flexibility. We pass this competitive advantage on to our customers. With the

experience of more than 160 years of development, construction and realization of customized machines, our engineers develop today the most economical solution upon your requirements. The development of the complete production process provides you full cost transparency and helps you to solve complex tasks in an optimal way. With three steps to success. WEISSER Turnkey.

### OFFER PHASE AND PLANNING PHASE

- Process requirements
- Production boundary conditions
- Machine requirements & machine type
- Workpiece clamping / Tools
- MFU features
- Terms of acceptance
- Delivery instructions
- Processing strategy
- Inspection of critical MFU characteristics
- Number of fixings
- Number of spindles
- Design of the machine system
- Workpiece loading and automation
- Clamping device
- Tools

### IMPLEMENTATION PHASE

- Construction and integration of the workpiece-specific
  - Clamping fixtures
  - Tools
  - Automation
- Approval process of the tooling plan, layout plan, etc.
- The verification procedure of the process capability through
  - the preliminary acceptance at WEISSER
  - the final acceptance at the customer

### TARGET PHASE

- Assistance with production startup and support
- Training in operation, programming and maintenance
- Service e.g. with preventive maintenance, spare part support, qualified service personnel, etc.





# Technical data

|                                                 |          | MultiCenter           |
|-------------------------------------------------|----------|-----------------------|
| Turning length                                  | mm       | 1.200                 |
| Chuck diameter                                  | mm       | up to 350             |
| Max. Feed force W/X/Y/Z (25 % CDF)              | kN       | 7,5 / 7,5 / 7,5 / 7,5 |
| Working stroke X (top / bottom)                 | mm       | 600 / 200             |
| Working stroke Y-axis                           | mm       | 210 (+130 / -80)      |
| Working stroke Z-axis (top / bottom)            | mm       | 1.100 / 1.200         |
| Max. Travel speed W/X/Y/Z                       | m/min    | 45 / 40 / 40 / 45     |
| Ball screw diameter W/X/Y/Z                     | mm       | 40 / 40 / 40 / 40     |
| Profile rail guide W/X/Y/Z                      | mm       | 55 / 45 / 45 / 55     |
| Tool flying circle                              | mm       | 700                   |
| Max. Peak distance                              | mm       | 1.200                 |
| Main spindle / Counter spindle                  |          |                       |
| Spindle bearing diameter                        | mm       | 120 (160)             |
| Spindle diameter                                | mm       | 65 (105)              |
| Spindle bore diameter                           | mm       | 80 (120)              |
| Spindle flange / spindle head                   | DIN55026 | A6 (A8)               |
| Drive power 100 % CDF                           | kW       | 22 (48)               |
| Drive power 40 % CDF                            | kW       | 24 (52)               |
| Nominal speed                                   | rpm      | 1.400 (780)           |
| Max. Speed                                      | rpm      | 5.700 (3.200)         |
| Torque 100 % CDF                                | Nm       | 150 (585)             |
| Torque 40 % CDF                                 | Nm       | 191 (795)             |
| C-axis resolution                               | Degree   | 0,001                 |
| Tailstock (optional instead of counter spindle) |          |                       |
| Shaft fixture                                   | DIN228   | MK5                   |
| Pressing force                                  | kN       | 7,5                   |
| Max. Speed                                      | rpm      | 4.500                 |

\* Values in brackets are options that deviate from the standard equipment, our sales department will be happy to support you here

|                                  |          |                                                           |                                                            |                                                            |
|----------------------------------|----------|-----------------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------|
| Tool carrier top                 |          |                                                           |                                                            |                                                            |
| Tool system                      |          | Target revolver 12-fold                                   | Target revolver 12-fold                                    | Milling spindle                                            |
| Tool holder                      |          | BMT 65s / VDI40                                           | BMT 65s / VDI40                                            | HSK T63 (Capto C6)                                         |
| Max. Speed                       | rpm      | 6.000 torque drive 10.000 BMT /<br>12.000 VDI speed drive | 6.000 torque drive, 10.000 BMT /<br>12.000 VDI speed drive | 12.000 (20.000)                                            |
| Max. Drive power (25% CDF)       | kW       | 28,5 torque drive<br>23,5 speed drive                     | 28,5 torque drive<br>23,5 speed drive                      | 20                                                         |
| Max. Torque (25% CDF)            | Nm       | 70 BMT / 85 VDI torque drive<br>56 speed drive            | 70 BMT / 85 VDI torque drive<br>56 speed drive             | 115                                                        |
| Swivel range B-axis              | Degree   | -                                                         | -                                                          | ±120                                                       |
| Tool carrier bottom              |          |                                                           |                                                            |                                                            |
| Tool system                      |          | -                                                         | Scheibenrevolver 12-fach                                   | Scheibenrevolver 12-fach                                   |
| Tool holder                      |          | -                                                         | BMT 65s / VDI40                                            | BMT 65s / VDI40                                            |
| Max. Speed                       | rpm      | -                                                         | 6.000 torque drive, 10.000 BMT /<br>12.000 VDI speed drive | 6.000 torque drive, 10.000 BMT /<br>12.000 VDI speed drive |
| Max. Drive power (25% CDF)       | kW       | -                                                         | 28,5 torque drive<br>23,5 speed drive                      | 28,5 torque drive<br>23,5 speed drive                      |
| Max. Torque (25% CDF)            | Nm       | -                                                         | 70 BMT / 85 VDI torque drive<br>56 speed drive             | 70 BMT / 85 VDI torque drive<br>56 speed drive             |
| Tool magazine                    |          |                                                           |                                                            |                                                            |
| Tool system                      | DIN69893 | -                                                         | -                                                          | HSK T63 (Capto C6)                                         |
| Places in tool magazine          |          | -                                                         | -                                                          | 102                                                        |
| Max. Tool weight                 | kg       | -                                                         | -                                                          | 8                                                          |
| Chip-to-chip time                | s        | -                                                         | -                                                          | ca. 8,5                                                    |
| Dimensions                       |          |                                                           |                                                            |                                                            |
| Dimensions basic machine (LxWxH) | mm       | 4.500 x 3.000 x 2.750                                     | 4.500 x 3.000 x 2.750                                      | 4.500 x 3.000 x 2.750                                      |
| Weight                           | kg       | ca. 12.500                                                | ca. 13.500                                                 | ca. 15.000                                                 |
| Connected load                   | kW       | 25 (50)                                                   | 36 (60 / 79)                                               | 36 (60 / 79)                                               |
| Control system                   |          | Siemens SINUMERIK ONE                                     |                                                            |                                                            |

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