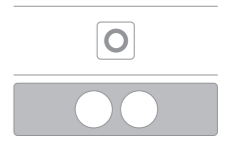
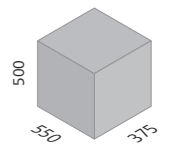




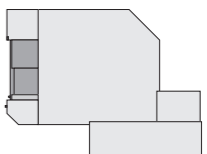
Working range	
X-axis	550mm
Y-axis (toolchange position)	500 mm (750 mm)
Z-axis	375 mm
Spindle distance	-
Workpiece carrier	
A-axis, prepared for mounting a fixture plate, up to max. ø 575 mm x 830 mm	
Drive system	Torque motor
Load capacity	max. 360 kg
Speed range A-axis	1 - 50 rpm
C-axis*	2 / 4 satellites
Work spindle	
HSK-A63	
Speed range	1 - 10000 rpm (1 - 17500 rpm)*
Run up time t_{max}	< 0,4 s (1,0 s)*
Spindle bearings ø	80 mm
Power (duty cycle)	1 x 32 kW (40%)
Torque (duty cycle)	1 x 72 Nm (40%)
Feed drive	
Drive system	Ball screw
Rapid traverse X / Y / Z	75 m/min
Axis acceleration X / Y / Z	10 / 10 / 15 m/s ²
Max. feed thrust X / Y / Z	8000 N
Accuracy	
Position measuring system	Direct, absolute
Positioning tolerance X / Y / Z	$T_p = 0,008$ mm
Tool magazine	
Toolchange system	Pick-Up
Capacity	1 x 40 (1 x 64 / 1 x 80)*
Max. tool ø	70 / 160 mm (-o-)
Max. tool length	275 mm
Max. tool weight	7,5 kg
Toolchange	
Chip-to-chip time	approx. 2,5 s
Weight / Dimensions	
Total weight	approx. 8500 kg
Transport dimensions W x H x L	2,45 m x 2,85 m x 3,35 m
Machine installed W x H x L	3,60 m x 3,15 m x 6,00 m
Connected load	
Operating voltage	3 x 400 Volt, 50 Hz, TN-S/TN-C Netz
Total connected load	approx. 64 kVA
Mean air consumption	0,5 Nm ³ /min (6 bar)
CNC control system	
Siemens	SINUMERIK 840D sl
Bosch-Rexroth*	IndraMotion MTX
Fanuc*	31i



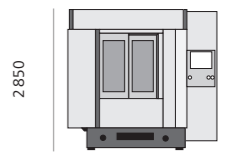
SWIVEL CARRIER
2 OR 4 ROTARY TABLES*



WORKSPACE PER SPINDLE

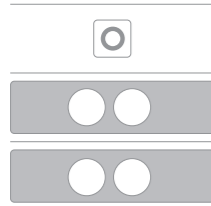


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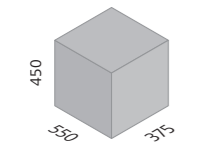


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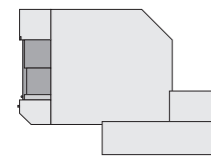
*optional, **on request, -o- occupancy of multiple magazine positions. Details depending on equipment. Technical data according to project planning. Deviation +/- 15% reserved. Subject to change without notice.



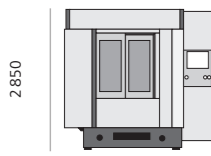
DOUBLE SWIVEL CARRIER
2 OR 4 ROTARY TABLES*



WORKSPACE PER SPINDLE



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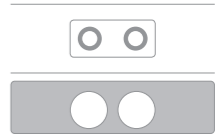


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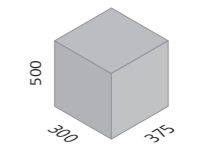
Working range	
X-axis	550 mm
Y-axis (toolchange position)	450 mm (725 mm)
Z-axis	375 mm
Spindle distance	-
Workpiece carrier	
Swivel carrier / counterbearing with crown gear: swivel time 0 / 180°	approx. 3,0 s
A- and U-axis, prepared for mounting a fixture plate, up to max.	ø 475 mm x 830 mm
Drive system	Torque motor
Load capacity	2 x 360 kg
Speed range A-, U-axis	1 - 50 rpm
C- and W-axis*	2 / 4 satellites
Work spindle	
	HSK-A63
Speed range	1 - 10 000 rpm (1 - 17 500 rpm)*
Run up time n _{max}	< 0,4 s (1,0 s)*
Spindle bearings ø	80 mm
Power (duty cycle)	1 x 32 kW (40%)
Torque (duty cycle)	1 x 72 Nm (40%)
Feed drive	
Drive system	Ball screw
Rapid traverse X / Y / Z	75 m/min
Axis acceleration X / Y / Z	10 / 10 / 15 m/s ²
Max. feed thrust X / Y / Z	8000 N
Accuracy	
Position measuring system	Direct, absolute
Positioning tolerance X / Y / Z	Tp = 0,008 mm
Tool magazine	
Toolchange system	Pick-Up
Capacity	1 x 40 (1 x 64 / 1 x 80)*
Max. tool ø	70 mm / 160 mm (-o-)
Max. tool length	275 mm
Max. tool weight	7,5 kg
Toolchange	
Chip-to-chip time	approx. 2,5 s
Weight / Dimensions	
Total weight	approx. 9 500 kg
Transport dimensions W x H x L	2,75 m x 2,85 m x 3,65 m
Machine installed W x H x L	3,85 m x 3,70 m x 6,30 m
Connected load	
Operating voltage	3 x 400 Volt, 50 Hz, TN-S/TN-C Netz
Total connected load	approx. 64 kVA
Mean air consumption	0,5 Nm ³ /min (6 bar)
CNC control system	
Siemens	SINUMERIK 840D sl
Bosch-Rexroth*	IndraMotion MTX
Fanuc*	31i

*optional, **on request, -o- occupancy of multiple magazine positions. Details depending on equipment. Technical data according to project planning. Deviation +/- 15% reserved. Subject to change without notice.

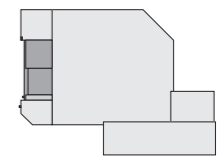
Working range		
X-axis	300 mm	
Y-axis (toolchange position)	500 mm (750 mm)	
Z-axis	375 mm	
Spindle distance	300 mm	
Workpiece carrier		
A-axis, prepared for mounting a fixture plate, up to max.	ø 575 mm x 830 mm	
Drive system	Torque motor	
Load capacity	max. 360 kg	
Speed range A-axis	1 - 50 rpm	
C-axis*	2 / 4 satellites	
Work spindle		
	HSK-A63	HSK-E50
Speed range	1 - 10 000 rpm (1 - 17 500 rpm)*	1 - 40 000 rpm
Run up time n _{max}	< 0,4 s (1,0 s)*	< 2,6 s
Spindle bearings ø	80 mm	55 mm
Torque (40% duty cycle)	2 x 32 kW (40%)	2 x 13 kW (40%)
Torque (40% duty cycle)	2 x 72 Nm (40%)	2 x 8 Nm (40%)
Feed drive		
Drive system	Ball screw	
Rapid traverse X / Y / Z	65 / 75 / 75 m/min	
Axis acceleration X / Y / Z	10 / 10 / 15 m/s ²	
Max. feed thrust X / Y / Z	8000 N	
Accuracy		
Position measuring system	Direct, absolute	
Positioning tolerance X / Y / Z	Tp = 0,008 mm	
Tool magazine		
Toolchange system	Pick-Up	
Capacity	2 x 20 (2 x 32 / 2 x 40)*	
Max. tool ø	70 / 160 mm (-o-)	
Max. tool length	275 mm	
Max. tool weight	7,5 kg	
Toolchange		
Chip-to-chip time	approx. 2,5 s	
Weight / Dimensions		
Total weight	approx. 8 500 kg	
Transport dimensions W x H x L	2,45 m x 2,85 m x 3,35 m	
Machine installed W x H x L	3,60 m x 3,15 m x 6,00 m	
Connected load		
Operating voltage	3 x 400 Volt, 50 Hz, TN-S/TN-C Netz	
Total connected load	approx. 85 kVA	
Mean air consumption	0,5 Nm ³ /min (6 bar)	
CNC control system		
Siemens	SINUMERIK 840D sl	
Bosch-Rexroth*	IndraMotion MTX	
Fanuc*	31i	



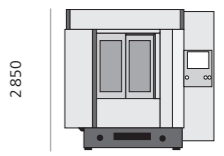
SWIVEL CARRIER
2 OR 4 ROTARY TABLES*



WORKSPACE PER SPINDLE

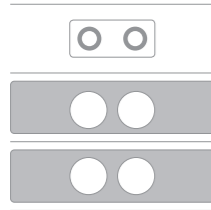


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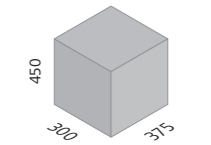


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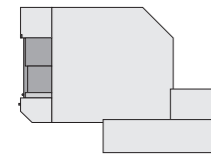
*optional, **on request, -o- occupancy of multiple magazine positions. Details depending on equipment. Technical data according to project planning. Deviation +/- 15% reserved. Subject to change without notice.



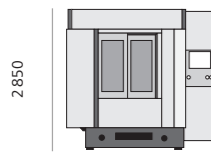
DOUBLE SWIVEL CARRIER
2 OR 4 ROTARY TABLES*



WORKSPACE PER SPINDLE



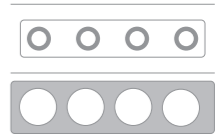
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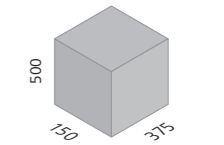
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Working range	
X-axis	300 mm (320 mm)*
Y-axis (toolchange position)	450 mm (725 mm)
Z-axis	375 mm
Spindle distance	300 mm (320 mm)*
Workpiece carrier	
Swivel carrier / counterbearing with crown gear: swivel time 0 / 180°	approx. 3,0 s
A- and U-axis, prepared for mounting a fixture plate, up to max.	ø 475 mm x 830 mm
Drive system	Torque motor
Load capacity	2 x 360 kg
Speed range A-, U-axis	1 - 50 rpm
C- and W-axis*	2 / 4 satellites
Work spindle HSK-A63	
Speed range	1 - 10 000 rpm (1 - 17 500 rpm)
Run up time n _{max}	< 0,4 s (< 1,0 s)*
Spindle bearings ø	80 mm
Power (duty cycle)	2 x 32 kW (40%)
Torque (duty cycle)	2 x 72 Nm (40%)
Feed drive	
Drive system	Ball screw
Rapid traverse X / Y / Z	65 / 75 / 75 m/min
Axis acceleration X / Y / Z	10 / 10 / 15 m/s ²
Max. feed thrust X / Y / Z	8000 N
Accuracy	
Position measuring system	Direct, absolute
Positioning tolerance X / Y / Z	Tp = 0,008 mm
Tool magazine	
Toolchange system	Pick-Up
Capacity	2 x 20 (2 x 32 / 2 x 40 / 2 x 60 / 2 x 90)*
Max. tool ø	70 mm / 160 mm (-o-)
Max. tool length	275 mm
Max. tool weight	7,5 kg
Toolchange	
Chip-to-chip time	approx. 2,5 s
Weight / Dimensions	
Total weight	approx. 9 500 kg
Transport dimensions W x H x L	2,75 m x 2,85 m x 3,65 m
Machine installed W x H x L	3,85 m x 3,70 m x 6,30 m
Connected load	
Operating voltage	3 x 400 Volt, 50 Hz, TN-S/TN-C Netz
Total connected load	approx. 85 kVA
Mean air consumption	0,5 Nm ³ /min (6 bar)
CNC control system	
Siemens	SINUMERIK 840D sl
Bosch-Rexroth*	IndraMotion MTX
Fanuc*	31i

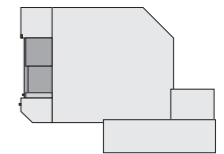
*optional, **on request, -o- occupancy of multiple magazine positions. Details depending on equipment. Technical data according to project planning. Deviation +/- 15% reserved. Subject to change without notice.



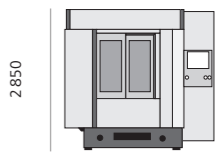
SWIVEL CARRIER
4 ROTARY TABLES*



WORKSPACE PER SPINDLE



3350

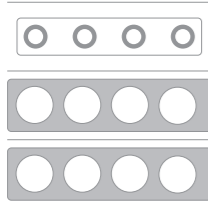


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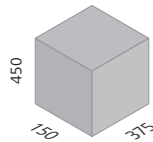
Working range	
X-axis	150 mm
Y-axis (toolchange position)	500 mm (750 mm)
Z-axis	375 mm
Spindle distance	150 mm
Workpiece carrier	
A-axis, prepared for mounting a fixture plate, up to max.	ø 575 mm x 830 mm
Drive system	Torque motor
Load capacity	max. 360 kg
Speed range A-axis	1 - 50 rpm
C-axis*	4 satellites
Working spindle HSK-E50	
Speed range	1 - 40 000 rpm
Run up time n _{max}	< 2,6 s
Spindle bearings ø	55 mm
Power (duty cycle)	4 x 13 kW (40%)
Torque (duty cycle)	4 x 8 Nm (40%)
Feed drive	
Drive system	Ball screw
Rapid traverse X / Y / Z	55 / 75 / 75 m/min
Axis acceleration X / Y / Z	10 / 10 / 13 m/s ²
Max. feed thrust X / Y / Z	8000 N
Accuracy	
Position measuring system	Direct, absolute
Positioning tolerance X / Y / Z	Tp = 0,008 mm
Tool magazine	
Toolchange system	Pick-Up
Capacity	4 x 10 (4 x 24 / 4 x 30)*
Max. tool ø	40 mm
Max. tool length	275 mm
Max. tool weight	3 kg
Toolchange	
Chip-to-chip time	approx. 2,75 s
Weight / Dimensions	
Total weight	approx. 9 000 kg
Transport dimensions W x H x L	2,45 m x 2,85 m x 3,35 m
Machine installed W x H x L	3,60 m x 3,15 m x 6,00 m
Connected load	
Operating voltage	3 x 400 Volt, 50 Hz, TN-S/TN-C Netz
Total connected load	approx. 85 kVA
Mean air consumption	0,5 Nm ³ /min (6 bar)
CNC control system	
Siemens	SINUMERIK 840D sl

*optional, **on request, -o- occupancy of multiple magazine positions. Details depending on equipment. Technical data according to project planning. Deviation +/- 15% reserved. Subject to change without notice.

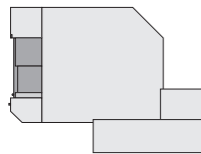
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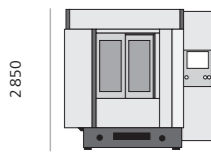
DOUBLE SWIVEL CARRIER
4 ROTARY TABLES*



WORKSPACE PER SPINDLE



3650



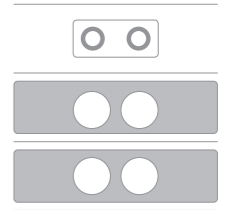
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*optional, **on request, -o- occupancy of multiple magazine positions. Details depending on equipment. Technical data according to project planning. Deviation +/- 15% reserved. Subject to change without notice.

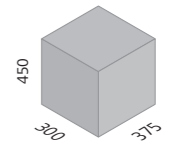
Working range	
X-axis	150 mm
Y-axis (toolchange position)	450 mm (725 mm)
Z-axis	375 mm
Spindle distance	150 mm
Workpiece carrier	
Swivel carrier / counterbearing with crown gear: swivel time 0 / 180°	approx. 3,0 s
A- and U-axis, prepared for mounting a fixture plate, up to max.	ø 475 mm x 830 mm
Drive system	Torque motor
Load capacity	2 x 360 kg
Speed range A-, U-axis	1 - 50 rpm
C- and W-axis*	4 satellites
Work spindle HSK-A40	
Speed range	1 - 20 000 rpm
Run up time n _{max}	< 0,7 s
Spindle bearings ø	50 mm
Power (duty cycle)	4 x 18 kW (40%)
Torque (duty cycle)	4 x 17 Nm (40%)
Feed drive	
Drive system	Ball screw
Rapid traverse X / Y / Z	55 / 75 / 75 m/min
Axis acceleration X / Y / Z	10 / 10 / 13 m/s ²
Max. feed thrust X / Y / Z	8000 N
Accuracy	
Position measuring system	Direct, absolute
Positioning tolerance X / Y / Z	Tp = 0,008 mm
Tool magazine	
Toolchange system	Pick-Up
Capacity	4 x 15 (4 x 24 / 4 x 30)*
Max. tool ø	45 mm / 125 mm (-o-)
Max. tool length	275 mm
Max. tool weight	4 kg
Toolchange	
Chip-to-chip time	approx. 2,75 s
Weight / Dimensions	
Total weight	approx. 9500 kg
Transport dimensions W x H x L	2,75 m x 2,85 m x 3,65 m
Machine installed W x H x L	3,85 m x 3,70 m x 6,30 m
Connected load	
Operating voltage	3 x 400 Volt, 50 Hz, TN-S/TN-C Netz
Total connected load	approx. 85 kVA
Mean air consumption	0,5 Nm ³ /min (6 bar)
CNC control system	
Siemens	SINUMERIK 840D sl
Bosch-Rexroth*	IndraMotion MTX
Fanuc*	31i



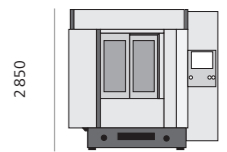
Working range	
X-axis	300 mm
Y-axis (toolchange position)	450 mm (725 mm)
Z-axis	375 mm
Spindle distance	300 mm
Workpiece carrier	
Swivel carrier / counterbearing with crown	
gear: swivel time 0 / 180°	approx. 3,0 s
A- and U-axis, prepared for mounting a fixture plate, up to max.	
	Ø 475 mm x 830 mm
Drive system	Torque motor
Load capacity	2 x 360 kg
Speed range A-, U-axis	1 - 50 rpm
C- and W-axis*	2 / 4 satellites
Work spindle	
	HSK-A63
Speed range	1 - 10000 rpm (1 - 17500 rpm)*
Run up time 0 - n _{max}	< 0,4 s (< 1,0 s)*
Spindle bearings ø	80 mm
Power (duty cycle)	2 x 32 kW (40%)
Torque (duty cycle)	2 x 72 Nm (40%)
Feed drive	
Drive system	Ball screw
Rapid traverse X / Y / Z	65 / 75 / 75 m/min
Axis acceleration X / Y / Z	10 / 10 / 15 m/s ²
Max. feed thrust X / Y / Z	8000 N
Accuracy	
Position measuring system	Direct, absolute
Positioning tolerance X / Y / Z	Tp = 0,008 mm
Tool magazine	
Capacity	Max. 24 Pallets
Pallet size	632 x 436 mm / Inlay 600 x 400 mm
Positioning speed	15 m/min
Travel distance	864 mm
Positioning time for 36 mm (space / space)	0,36 s
Positioning time for 864 mm	3,8 s
Total permissible load	400 kg
Robot	
Type	LR Mate 200iD/7L, Fa. Fanuc
Range	911 mm
Load capacity	7 kg
Pallet change	
(space / space at v _{lin} = 30 m/min)	30 s
Weight / Dimension	
Total weight	10500 kg
Transport dimensions W x H x L	3,06 m x 2,85 m x 4,70 m
Machine installed W x H x L	4,10 m x 3,15 m x 7,45 m
Energy consumption robot (is added to the standard machine)	
Productive operation Active power	1,0 kW
Productive operation Air consumption	0,1 Nm ³ /min



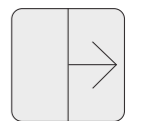
DOUBLE SWIVEL CARRIER
2 OR 4 ROTARY TABLES*



WORKSPACE PER SPINDLE



3060



INTEGRATED
AUTOMATION*

*optional, **on request, -o- occupancy of multiple magazine positions. Details depending on equipment. Technical data according to project planning. Deviation +/- 15% reserved. Subject to change without notice.