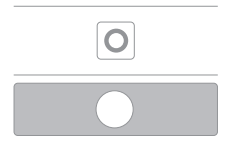
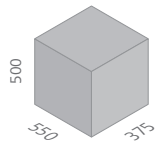




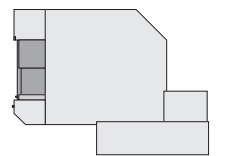
Working range	
X-axis	550mm
Y-axis (toolchange position)	500 mm (750 mm)
Z-axis	375 mm
Spindle distance	-
Workpiece carrier	
A- and U-axis, prepared for mounting a fixture plate, up to max.	ø 575 mm x 830 mm
Drive system	Torque motor
Load capacity	max. 360 kg
Speed range A-axis	1 - 50 rpm
C-axis*	2 / 4 satellites
Work spindle	
	HSK-A63
Speed range / Run up time n_{max}	1 - 10000 rpm (1 - 17 500 rpm)* / 0,4 s (1,0 s)*
Spindle bearings ø	80 mm
Torque (40% duty cycle)	32 kW / 4 200 rpm
Torque (40% duty cycle)	72 Nm
Feed drive	
Drive system	Ball screw
Rapid traverse X / Y / Z	75 / 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	40 (64 / 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. 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. 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



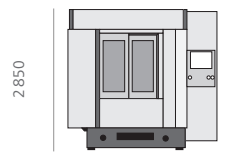
SWIVEL CARRIER



WORKSPACE PER SPINDLE



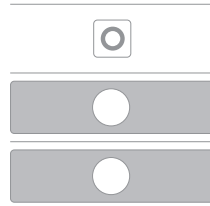
3 350



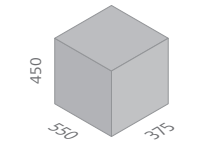
2 450

*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.

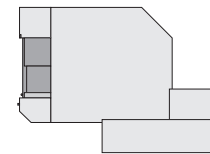
BA 312



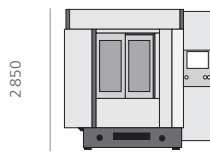
DOUBLE SWIVEL CARRIER
1 - 4 ROTARY TABLES*



WORKSPACE PER SPINDLE



3650

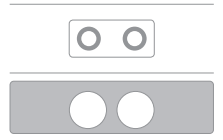


2750

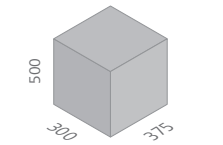
Working range	
X-axis	550 mm
Y-axis (toolchange position)	450 mm (725 mm)
Z-axis	375 mm
Spindle distance	-
Workpiece carrier	
Swivel carrier / counterbearing with crown gear: swivel time 0 / 180°	approx. 3,0 s
A- and U-axis, prepared for mounting a fixture plate, up to max.	ø 475 mm x 830 mm
Drive system	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 / Run up time n _{max}	1 - 10 000 rpm (1 - 17 500 rpm)*
Spindle bearings ø	80 mm
Torque (40% duty cycle)	32 kW / 4 200 rpm
Torque (40% duty cycle)	72 Nm
Feed drive	
Drive system	Ball screw
Rapid traverse X / Y / Z	75 / 75 / 75 m/min
Axis acceleration X / Y / Z	10 / 10 / 15 m/s ²
Max. feed thrust X / Y / Z	8 000 N
Accuracy	
Position measuring system	Direct, absolute
Positioning tolerance X / Y / Z	T _p = 0,008 mm
Tool magazine	
Toolchange system	Pick-Up
Capacity	40 (64 / 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.

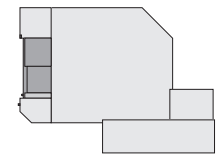
BA 321



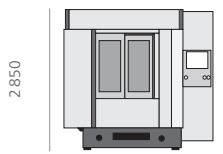
SWIVEL CARRIER



WORKSPACE PER SPINDLE



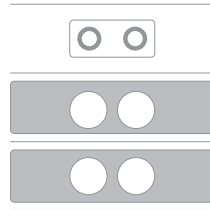
3350



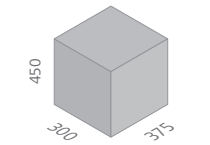
2450

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- and U-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 / Run up time n _{max}	1 - 10 000 rpm (1 - 17 500 rpm)* / 0,4 s (1,0 s)*
Spindle bearings ø	80 mm
Torque (40% duty cycle)	2 x 32 kW / 4 200 rpm
Torque (40% duty cycle)	2 x 72 Nm
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	8 000 N
Accuracy	
Position measuring system	Direct, absolute
Positioning tolerance X / Y / Z	T _p = 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

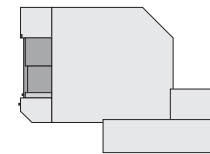
*optional, **on request, -o- occupancy of multiple magazine positions. Details depending on equipment. Technical data according to project planning. Deviation +/- 15% reserved. Subject to change without notice.



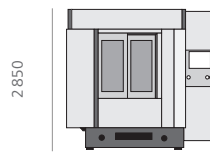
DOUBLE SWIVEL CARRIER
2 OR 4 ROTARY TABLES*



WORKSPACE PER SPINDLE



3 650

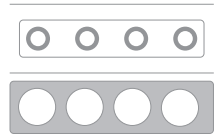


2 750

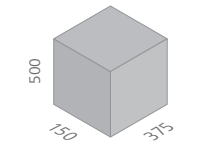
Working range	
X-axis	300 mm
Y-axis (toolchange position)	450 mm (725 mm)
Z-axis	375 mm
Spindle distance	300 mm
Workpiece carrier	
Swivel carrier / counterbearing with crown gear: swivel time 0 / 180°	approx. 3,0 s
A- and U-axis, prepared for mounting a fixture plate, up to max.	ø 475 mm x 830 mm
Drive 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 / Run up time n _{max}	1 - 10 000 rpm (1 - 17 500 rpm)* / 0,4 s (1,0 s)*
Spindle bearings ø	80 mm
Torque (40% duty cycle)	2 x 32 kW / 4 200 rpm
Torque (40% duty cycle)	2 x 72 Nm
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	8 000 N
Accuracy	
Position measuring system	Direct, absolute
Positioning tolerance X / Y / Z	T _p = 0,008 mm
Tool magazine	
Toolchange system	Pick-Up
Capacity	2 x 20 (2 x 32 / 2 x 40)*
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.

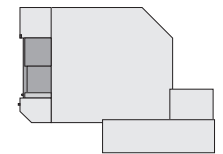
Working range	
X-axis	150 mm
Y-axis (toolchange position)	500 mm (750 mm)
Z-axis	375 mm
Spindle distance	150 mm
Workpiece carrier	
A- and U-axis, prepared for mounting a fixture plate, up to max.	ø 575 mm x 830 mm
Drive system	Torque motor
Load capacity	max. 360 kg
Speed range A-axis	1 - 50 rpm
C-axis*	4 satellites
Working spindle	
HSK-E50	
Speed range / Run up time n _{max}	1 - 40 000 rpm / 2,6 s
Spindle bearings ø	55 mm
Torque (40% duty cycle)	4 x 13 kW / 15 000 rpm
Torque (40% duty cycle)	4 x 8 Nm
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	8 000 N
Accuracy	
Position measuring system	Direct, absolute
Positioning tolerance X / Y / Z	T _p = 0,008 mm
Tool magazine	
Toolchange system	Pick-Up
Capacity	4 x 10
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
Bosch-Rexroth*	IndraMotion MTX
Fanuc*	31i



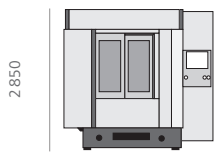
SWIVEL CARRIER



WORKSPACE PER SPINDLE



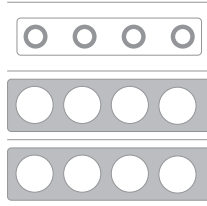
3 350



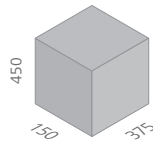
2 450

*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.

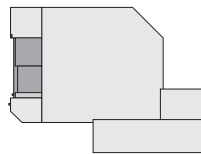
BA 342



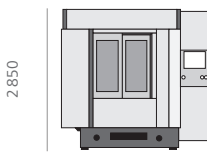
DOUBLE SWIVEL CARRIER



WORKSPACE PER SPINDLE



3650



2750

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 / Run up time n_{max}	1 - 20 000 rpm / 0,7 s
Spindle bearings ø	50 mm
Torque (40% duty cycle)	4 x 18 kW / 10 500 rpm
Torque (40% duty cycle)	4 x 17 Nm

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	$T_p = 0,008$ 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. 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

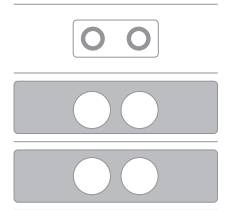
Connected load	
Operating voltage	3 x 400 Volt, 50 Hz, TN-S/TN-C Netz
Total connected load	approx. 85 kVA
Mean air consumption	0,5 Nm ³ /min (6 bar)

CNC control system	
Siemens	SINUMERIK 840D sl
Bosch-Rexroth*	IndraMotion MTX
Fanuc*	31i

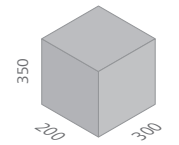
*optional, **on request, -o- occupancy of multiple magazine positions. Details depending on equipment. Technical data according to project planning. Deviation +/- 15% reserved. Subject to change without notice.



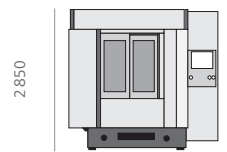
Working range	
X-axis	300 mm
Y-axis (toolchange position)	450 mm (725 mm)
Z-axis	375 mm
Spindle distance	300 mm
Werkstückaufnahme	
Swivel carrier / counterbearing with crown gear: swivel time 0 / 180° approx. 3,0 s	
Drive system	Torque motor
Load capacity	max. 360 kg
Speed range A-, U-axis	1 - 50 rpm
C- and W-axis*	2 / 4 satellites
Work spindle HSK-A63	
Speed range / Run up time 0 - n _{max}	1 - 10000 rpm (1 - 17500 rpm)* / 0,4 s (1,0 s)*
Spindle bearings ø	80 mm
Power / Torque (40% duty cycle)	1 - 10000 rpm (1 - 17500 rpm)* / 0,4 s (1,0 s)*
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
Workpiece dimension	100 x 100 x50 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
Space machine	9,75 m ²
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



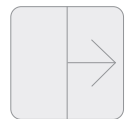
DOUBLE SWIVEL CARRIER
2 OR 4 ROTARY TABLES*



WORKSPACE PER SPINDLE



2750



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.