

HELLER
Machines



HELLER Machining Centres

The new F series
Technical data

Overview

Model			F 2000	F 4000
Working area	Longitudinal stroke (X-axis)	mm	630	800
	Vertical stroke (Y-axis)	mm	630 (730 with SCT 63)	800 (900 with SCT 63)
	Transverse stroke (Z-axis)	mm	830	1,000
Feed thrusts	X- and Y-axis with duty cycle = 40 %	N	10,000	10,000
	Z-axis with duty cycle = 40 %	N	15,000	15,000
Speeds	in X-, Y- and Z-axis/rapid traverse	mm/min	60,000	60,000
	Acceleration	m/s ²	6.0	6.0
Spindle unit	Spindle taper	SK/HSK/BT	40/A63/40	
	PCU 63	Drive power/torque (max.) with duty cycle = 40 %	kW/Nm	44/242
		Speed	1/min	10,000
		Spindle diameter in front bearing	mm	80
SCU 63	Drive power/torque (max.) with duty cycle = 40 %	kW/Nm	40/80	
	Speed	1/min	16,000	
	Spindle diameter in front bearing	mm	70	
SCT 63	Drive power/torque (max.) with duty cycle = 40 %	kW/Nm	40/80	
	Speed	1/min	16,000	
	Spindle diameter in front bearing	mm	70	
Tool magazine	Max. admissible tool mass	kg	12	12
	Min. chip-to-chip time to VDI	s	3.5	3.7
Chain-type magazine	Tool places	number	54/80/160/240	54/80/160/240
	Max. tool length	mm	350 (HSK 63: 400)	450
	Max. tool diameter	mm	160	160
Rack-type magazine	Tool places	number	409	409
	Max. tool length	mm	350 (HSK 63: 400)	450
	Max. tool diameter	mm	188	188
Rotary table	Indexing division rotary feed/indexing table	degree	360,000 x 0.001°	360,000 x 0.001°
	Indexing accuracy Tp (to VDI/DGQ 3441)	arc s	10	10
	Rotational speed	1/min	40	20
Pallet changer	Working surface	mm x mm	400 x 500 (FP) / ø 720 (FT)	500 x 630 (FP) / ø 720 (FT)
	Max. workpiece diameter	mm	720 (FP) / 1,000 (FT)	900 (FP) / 1,200 (FT)
	Max. workpiece height	mm	850 (FP) / 1,300 (FT)	1,000 (FP) / 1,500 (FT)
	Max. loading capacity	kg	800	1,400
	Pallet change time (FP)	s	9	13
Measuring system	Direct linear scales in X-, Y- and Z-axis with highest resolution			
	Positioning tolerance Tp (to VDI/DGQ 3441)	mm	0.007	0.007
Coolant unit	Chip conveyor basic design			
	Coolant tank, mesh-type filter unit, capacity	litres	800	800
	Max. pressure	bars	12	12
	Coolant tank, paperband filter unit, capacity	litres	1,800	1,800
	Max. pressure	bars	12/50/70	12/50/70
	Coolant tank, vacuum rotation filter unit, capacity	litres	1,200	1,200
	Max. pressure	bars	50/70	50/70
Installation data	Length/Width/Height (depending on coolant unit)	mm	5,370 / 2,715 / 3,695 (FP) 4,760 / 2,715 / 3,695 (FT)	5,810 / 2,885 / 3,865 (FP) 4,920 / 2,885 / 3,865 (FT)
	Mass of machine	approx. kg	13,000 (FP) / 12,500 (FT)	15,600 (FP) / 14,850 (FT)
	Electrical capacity, machine	approx. kVA	39	39
	Electrical capacity, coolant unit	approx. kVA	26	26
	Mains connection	V/Hz	3 x 400/50	3 x 400/50
	Compressed air	bars	4.5 – 6	4.5 – 6
Machine control	SIEMENS Sinumerik 840Dsl		x	x
	HEIDENHAIN iTNC530		x	x

Subjects to change without notice. Oktober 2009.

Configurator

Configurations and options

Basic machine:

- FP2000 (XYZ = 630 x 630 x 830)
- FP 4000 (XYZ = 800 x 800 x 1,000)
- FT2000 (XYZ = 630 x 630 x 830)
- FT 4000 (XYZ = 800 x 800 x 1,000)

Tool management:

- HSK-A 63, SK 40 or BT 40 spindle taper
- Mounting for multi-spindle drill heads
- Wireless measuring probe and receiver
- Chain-type tool magazine with 54, 80, 160 or 240 storage places
- Rack-type tool magazine with 409 storage places
- Loading tools during machining
- Tool coding
- Tool shank cleaning

Workpiece management:

- NC rotary feed table, 360,000 x 0.001° indexing
- Workpiece setting station, manual or automatic pallet rotation
- 5-point services interface, 60 bar or 200 bar hydraulic pressure
- 5-point services interface, 200 bar hydraulic pressure, proportional technology
- Control of 4th port in the work area for hydraulic switching function

Spindle units:

- PCU 63 Power Cutting Universal (10,000 1/min, 44 kW, 242 Nm)
- SCU 63 Speed Cutting Universal (16,000 1/min, 40 kW, 80 Nm)
- SCT 63 Speed Cutting Tilt (16,000 1/min, 40 kW, 80 Nm)

Control:

- SIEMENS 840D solution line
- HEIDENHAIN iTNC 530
- Handheld operating unit and interface
- Convenient operating panel at the tool loading station
- Software options
- Remote diagnostics service

Installation:

- Installation without anchoring on vibration-damping levelling shoes
- Installation with anchoring using mortar cartridges

Supply and Disposal:

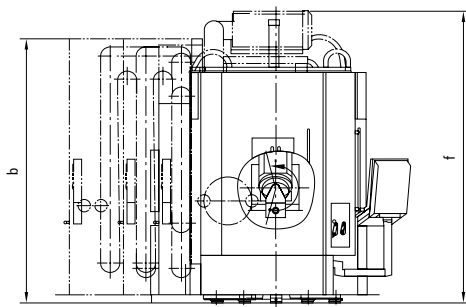
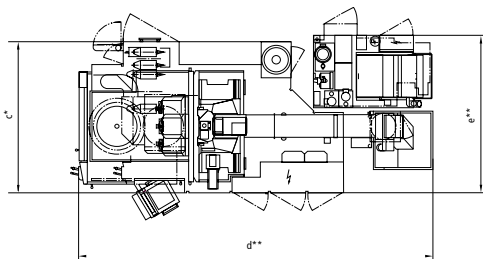
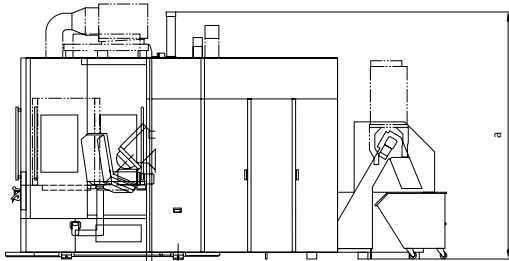
- Work area flushing
- Screen blow-off device for operator door
- Emulsion mist extraction
- Coolant regeneration plant, mesh-type filter, 12 bar internal coolant supply
- Coolant regeneration plant, paperband filter, 50 bar or 70 bar internal coolant supply
- Coolant regeneration plant vacuum rotation filter VRF250, 50 or 70 bar internal coolant supply
- Coolant refrigeration unit CFC-free

Automation:

- PP Pallet pool (rotary) with 6 pallets in the system
- PMB Pallet Magazine Basic with 10-24 pallets in the system
- PME Pallet Magazine Extended with 8-42 pallets in the system
- PMF Pallet Magazine Flexible with machine and material pallets
- Robot cell
- Additional pallets with DIN hole pattern or DIN T-slots

Dimensions

FT 2000/4000

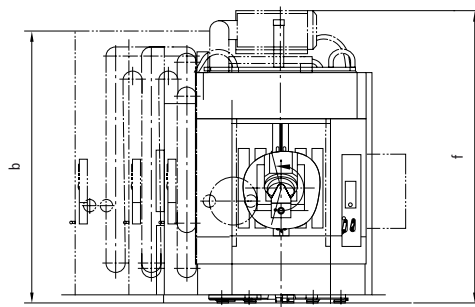
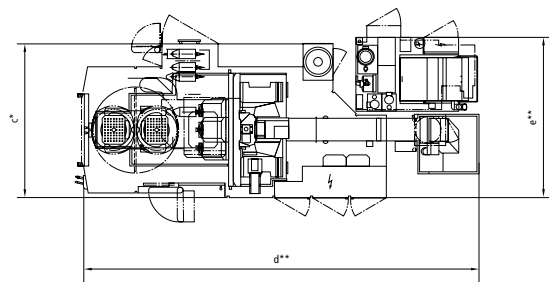
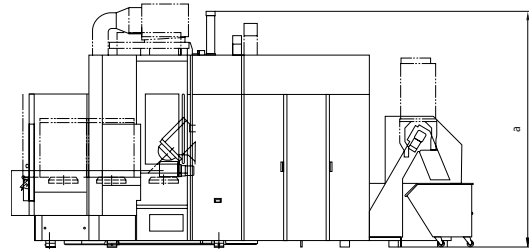


Model	FT 2000	FT 4000
a (mm)	3,695	3,865
b (mm)	3,445	3,445
c (mm)*	2,715	2,885
d (mm)**	6,364	6,527
e (mm)**	2,825	2,910
f (mm)	3,810	3,980

* Chain-type magazine with 50 places

** Dimensions with paperband filter system

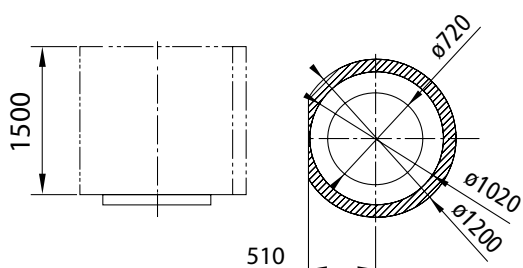
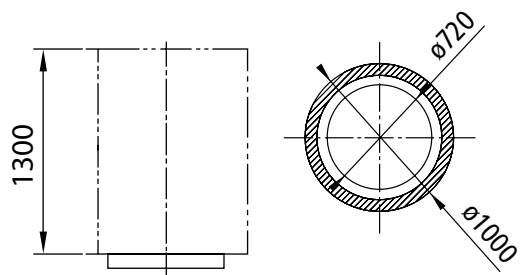
FP 2000/4000



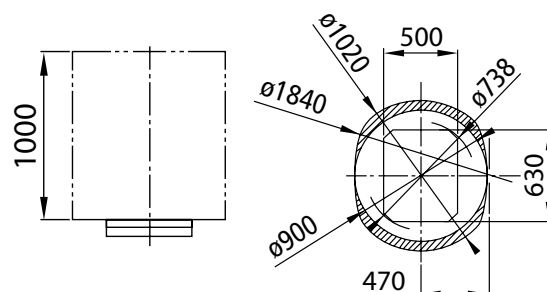
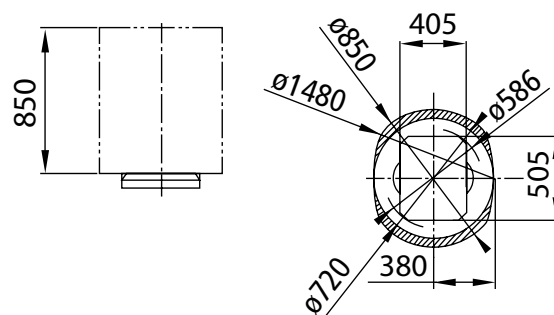
Model	FP 2000	FP 4000
a (mm)	3,695	3,865
b (mm)	3,445	3,445
c (mm)*	2,715	2,885
d (mm)**	6,976	7,416
e (mm)**	2,825	2,910
f (mm)	3,810	3,980

Workpiece dimensions

Collision path FT 2000/4000



Collision path FP 2000/4000

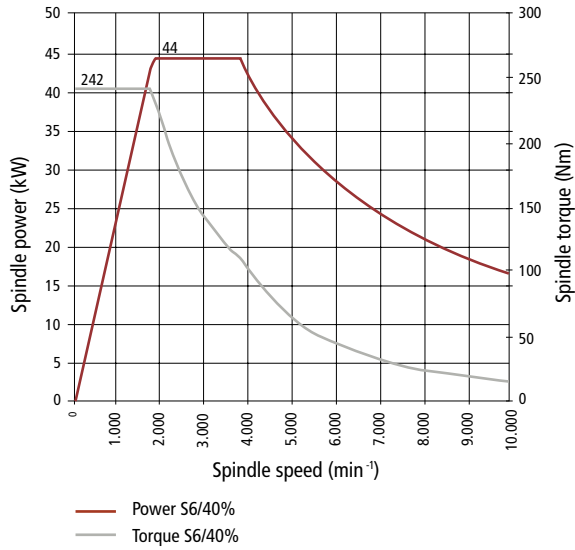


Tool dimensions

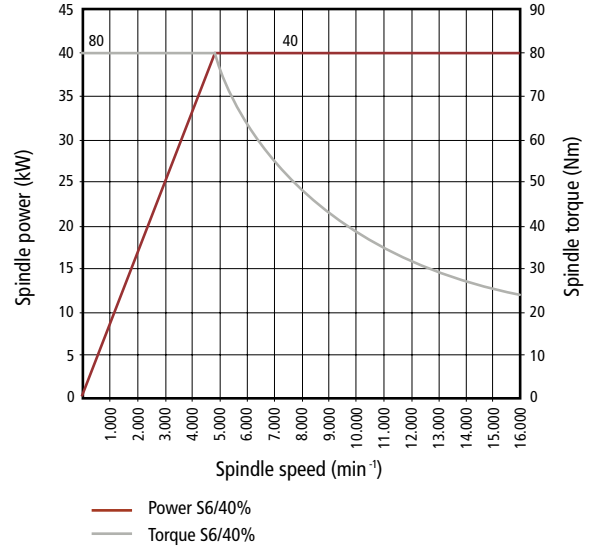
Model	F 2000	F 4000
max. tool length (mm) from spindle nose	350 / 400 (HSK 63)	450
max. tool diameter (mm)	160 (chain) / 188 (rack)	160 (chain) / 188 (rack)
max. tool mass (kg)	12	12
max. moment of weight (Nm)	10	10

Spindle power

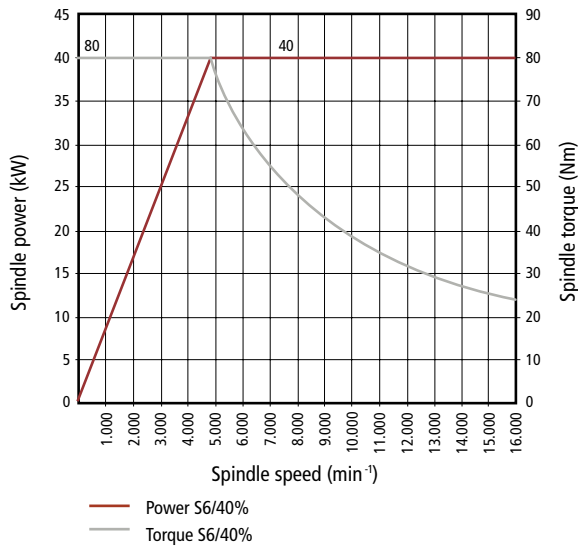
PCU 63



SCU 63

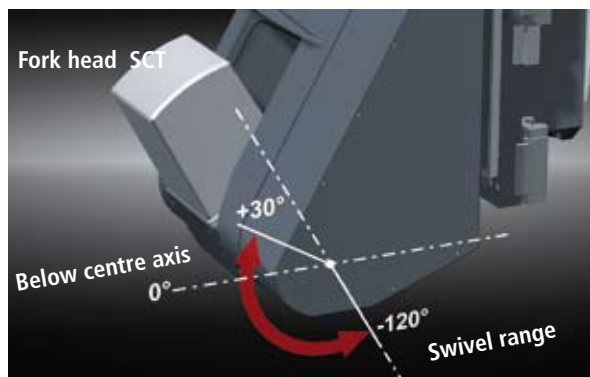


SCT 63

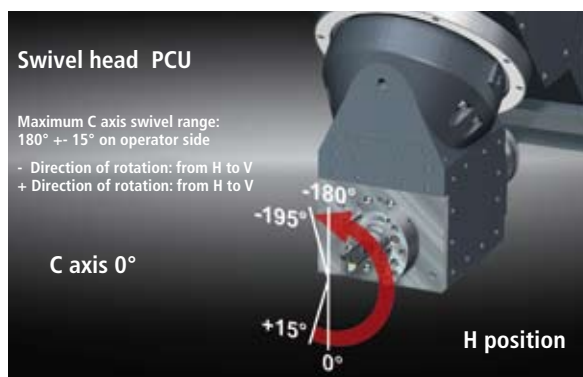


Spindle heads

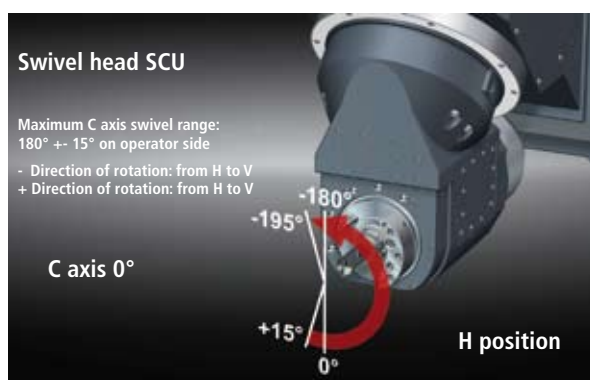
Fork head swivel range SCT 63



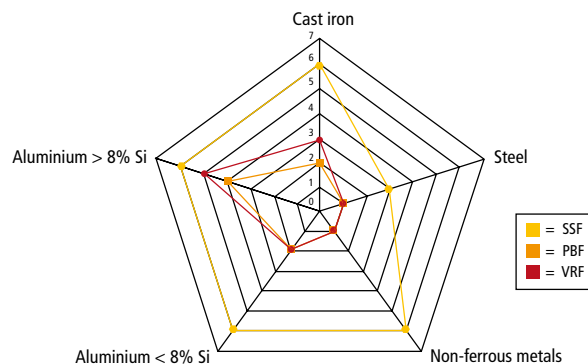
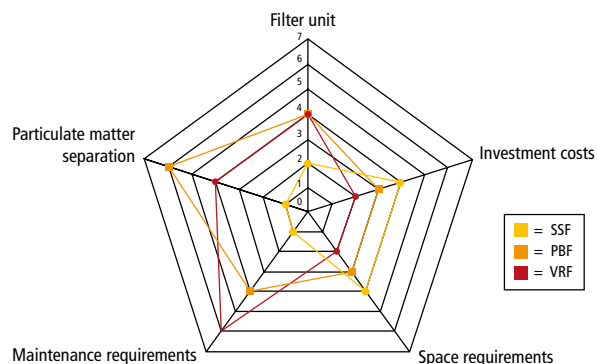
Swivel head swivel range PCU 63



Swivel head swivel range SCU 63



Coolant disposal



The evaluation is based on the optionally available coolant systems for the F series in standard design. A maximum of 6 points is awarded. Evaluation results may vary if the system is customised in accordance with customer requirements.

HELLER
Machines



Some of the options shown are not included in the basic scope of supply. Design and scope of supply are subject to technical changes.
© Gebr. Heller Maschinfabrik GmbH © Concept, design: SK+P, München-Unterföhring, October 2009.

HELLER Machining Centres

The new F series

Technical data