HELLER

4-axis machining centres

H

Contents

H series

Tailor-made off the peg:

The perfect 4-axis machining centre must be configurable to your needs, operate reliably even under maximum load and offer a fair price-to-performance ratio. Our solution: HELLER H series 4-axis machining centres. Reliable components, tried and tested in series production over many years and combined with high dynamics, ensure robust processes – even when pushed to the limit, 24/7 in 3-shift operation.

Key facts

_horizontal 4-axis machining centres with pallet changer as standard

_engineered for high process stability and designed to perform at maximum capacity, even at the limits

_outstanding performance and minimal non-productive times for maximum productivity

_high availability and long service life thanks to robust and reliable technology

_24/7 series production, stand-alone operation, Automation-READY or integrated into flexible manufacturing systems

_short chip-to-chip times thanks to a fast tool changer and high axis dynamics

_easy to automate with workpiece or pallet automation

_horizontal spindle for optimal chip fall

_highly standardised and individually configurable

_suitable for a wide range of parts and materials

_ideal for series production of small to medium batch sizes

_broad selection of machine sizes for almost any workpiece

_wide range of powerful machining units with specific tool shank sizes

For more information, go to: **www.heller.biz/en/h**

Machine concept

The foundation of productivity

The rigid construction and topology-optimised structural components provide the foundation for the high cutting performance and accuracy of our H series 4 axis machining centres. Ensuring you can rely on the highest quality – and high productivity.

Size H 4000

Size H 8000

Basic structure

_high stability and damping in the force flow through topology-optimised cast iron structural components

_thermosymmetrical design and optimal force flow

_broad range of rugged machining units

_wide selection of tool magazines, in chain-type or rack-type design for rapid tool provisioning

_tool changer with two NC axes for fastest automatic tool change

Kinematics

_machine bed supports the X- and Z-axis in cross-bed arrangement

_machine column traverses in X-direction and supports the machining unit

_machining unit traverses in Y-direction with compact and robust integration into the machine column

_rotary table moves in Z-direction and performs the feed motion

_NC rotary table (rotary axis B) continuously rotates the workpiece (360,000 x 0.001°)

Drive concept

_linear axes with roller guides driven by ball screws for high feed forces

_direct, absolute measuring systems with glass scales for maximum precision and minimal positioning tolerance

_PRO equipment package available as an option, featuring maximum rapid traverse speed, higher clamping load and significantly reduced positioning tolerances (H 2000, H 4000)

_SPEED equipment package available as an option, for maximum rapid traverse speed and minimal idle times

_NC rotary feed table with large YRT bearing and automatic clamping for maximum stability and high tilting moments

_NC rotary feed table with gear drive for high torque and damping performance

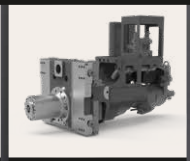
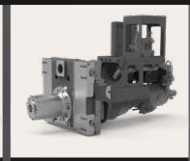
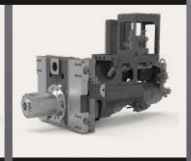
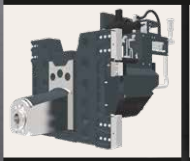
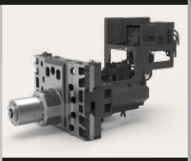
_NC rotary feed table with direct drive for high dynamics and rapid positioning (standard on H 2000 and H 4000)

_excellent milling behaviour even in the upper stroke positions thanks to the optimised design of the drive train

Machining units

Highest precision

Spindles “Made by HELLER” are among the highlights of our H series 4-axis machining centres. Our in-house manufacturing expertise ensures that they deliver the highest machining quality, guaranteeing process stability and maximum cutting performance. Special advantage: the HELLER zero-spindle system. In the event of a failure, the machining spindle can be replaced quickly and easily.

			H 2000 – H 4000				H 5000 – H 10000			
										
			PC 63 i[1)]	**DC 63 i[1)]**	**SC 63 i[1)]**	**SC 63 M**	**HPC 100 G**	**PCe 100 G**	**PC 100 G**	**PC 100 i**
Tool shank SK/BT available as an option for selected units		Size	HSK-A 63	HSK-A 63	HSK-A 63	HSK-A 63	HSK-A 100	HSK-A 100	HSK-A 100	HSK-A 100
Speed		min^{-1}	12,000	16,000	18,000	20,000	6,000	8,000	8,000	10,000
Power	S6 40 %	kW	45	56	45	48	60	60	43	45
Torque	S6 40 %	Nm	228	180	103	121	2,292	1,146	822	360

1) also available for H 8000 and H 10000 with HSK-A 63

Machining units “made by HELLER”

_H 2000 – H 4000: 4 machining units with HSK-A 63 tool shank

_H 5000 - H 10000: 3 machining units with INLINE spindles and 3 machining units with gearbox, HSK-A 100 tool shank

_H 8000 / H 10000: 3 machining units with INLINE spindles and HSK-A 63 tool shank

_H 14000 / H 16000: 5 machining units with HSK-A 100 tool shank

_compact overall design and robustly dimensioned spindle bearings for maximum cutting performance

_thermal stability and precision thanks to permanent cooling: precision cooling unit and thermal growth compensation of the spindle

_robust cast iron guide slide with high dynamic rigidity and damping

_slim spindle neck for perfect reach into the workpiece

_horizontal spindle for optimal chip fall

HELLER zero spindle system 1

_easy replacement without time-consuming fine adjustment with INLINE spindle set to zero dimension

_short repair times ensure maximum machine availability

_cost-effective solution for low TCO (Total Cost of Ownership)

_reduced spare parts costs due to the integrated zero spindle technology

Options

HELLER attachment head adapter (MSK)*

_for the use of attachment heads, e.g. angular heads

_enlarged support base with three-point support

_integrated torque pickup and media transfer

HELLER attachment head additional clamping*

_for additional clamping of attachment heads on the attachment head support

_optimal stability when using attachment heads and under high process forces

HELLER facing slide system* 2

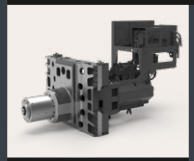
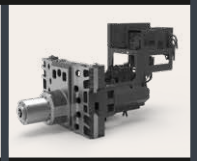
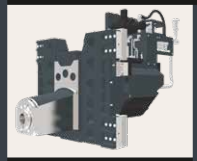
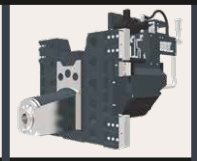
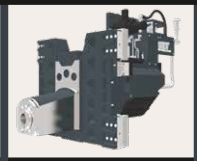
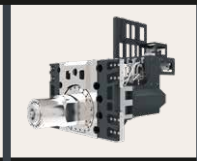
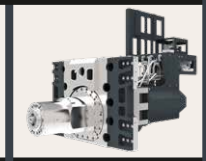
_for automatic adjustment of actuating tools

_actuation with a full-fledged NC axis (U) integrated in the machine control

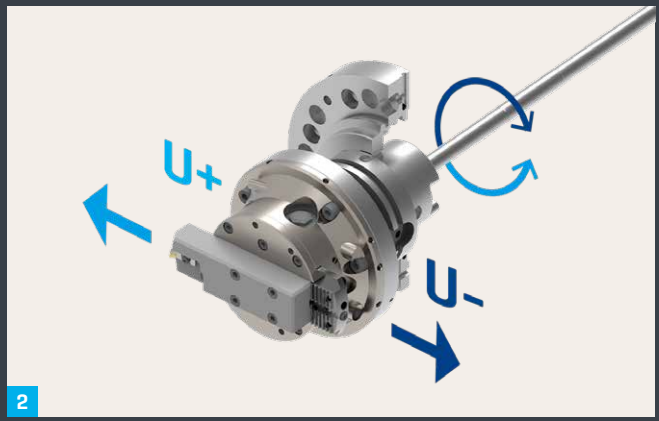
_ideal for contour boring or facing operations

_available for machining units with HSK tool shank

* not available for all machining units

H 5000 – H 10000		H 14000 – H 16000				
						
DC 100 i	**SC 100 i**	**HPC 100 G**	**PCe 100 G**	**PC 100 G**	**EEC 100 i**	**SC 100 i**
HSK-A 100	HSK-A 100	HSK-A 100	HSK-A 100	HSK-A 100	HSK-A 100	HSK-A 100
12,000	13,000	6,000	8,000	8,000	12,500	12,500
45	45	60	60	43	38	52
400	228	2,292	1,146	822	242	166

1



2

Tool management

Comprehensive know-how for your tools

Short setup and idle times are exactly what you can expect from our H series 4-axis machining centres. The tool changer with two NC axes ensures maximum precision and optimised motion sequences for minimal tool change times. Combined with high axis dynamics, this results in short chip-to-chip times.

			H 2000	H 4000	H 5000	H 6000	H 8000		H 10000		H 14000	H 16000
Tool shank		Size	HSK-A 63	HSK-A 63	HSK-A 100	HSK-A 100	HSK-A 100	HSK-A 63	HSK-A 100	HSK-A 63	HSK-A 100	HSK-A 100
Chip-to-chip time[1]	$t_{2,3}$ | VDI 2852 | (SPEED)	s	2.2	2.3	3.4 (3.0)	3.6 (3.2)	4.0 (3.8)	(3.9)	4.4 (4.1)	(4.3)	6.7	6.7
Tool weight[2]		kg	12	12	25 (35)	25 (35)	25 (35)	(15)	25 (35)	(15)	25 (35)	25 (35)
Chain-type magazines	Magazine places	Number	54 (80/160/240)	54 (80/160/240)	50 (100/150)	50 (100/150)	50 (100/150)	(50/ 100/150)	50 (100/150)	(50/ 100/150)	50 (100/150)	50 (100/150)
	Tool length/ diameter[3]	mm	410/ Ø 160	450/ Ø 160	600/ Ø 280	600/ Ø 280	600 (800)/ Ø 280	(600/Ø188)	600 (800)/ Ø 280	(600/Ø188)	600 (800)/ Ø 280	600 (800)/ Ø 280
Rack-type magazines	Magazine places	Number	(324/498)	(324/498)	(200/260/ 340/425)	(200/260/ 340/425)	(200/260/ 340/425)	(324/498)	(200/260/ 340/425)	(324/498)	(265/425)	(265/425)
	Tool length/ diameter[3]	mm	(410/Ø 188)	(450/Ø 188)	(600/Ø 280)	(600/Ø 280)	(600 (800)/ Ø 280)	(600/Ø 188)	(600 (800)/ Ø 280)	(600/Ø 188)	(600 (1,000)/ Ø 280)	(600 (1,000)/ Ø 280)

( ) = optional values **1)** applies to Siemens SINUMERIK **2)** observe total load **3)** with free adjacent places

Chain-type magazines 1

_4 chain-type magazines with up to 240 storage places for H 2000 and H 4000

_3 chain-type magazines with up to 150 storage places for H 5000 – H 16000

_sturdy tool holders mounted on both sides of a double chain for optimised traversing dynamics of the chain

_tool provisioning during machining for short tool-to-tool times

_rapid tool change for short chip-to-chip times

_two NC axes with lift/swivel principle for high dynamics and long-term precision

_robust double gripper for secure handling of heavy tools and high moment loads

_integrated tool provisioning place for preparation of the next tool during machining and short tool-to-tool times

Rack-type magazines 2

_2 rack-type magazines with 324/498 places for machines with HSK-A 63

_4 rack-type magazines with up to 425 places for machines with HSK-A 100

_compact footprint resulting from the extremely space-saving arrangement alongside the machine (H 2000 – H 10000)

_tool handling with highly dynamic loader for rapid tool provisioning

_rapid tool change for short chip-to-chip times

_two NC axes with lift/swivel principle for high dynamics and long-term precision

_robust double gripper for secure handling of heavy tools and high moment loads

_ergonomic operating panel at the tool setting station

_tool setting station with integrated rotary station offering multiple positions for tool loading during machining

_loading of tool sets via mobile rack with manual drive or AGV support

Tool changer

_two NC axes with lift/swivel principle for high dynamics and long-term precision

_robust double gripper for secure handling of heavy tools and high moment loads

_integrated tool provisioning place for preparation of the next tool during machining and short tool-to-tool times

Workpiece management

High precision and process stability

Our H series 4-axis machining centres virtually know no limits when it comes to workpiece size and weight. The machine's pallet changer concept allows a clamping load of up to 8 tonnes. Even with workpieces of this weight, the HELLER H series operates with a high level of precision.

			H 2000	H 4000	H 5000	H 6000	H 8000
Type			APC: Universal | (Fork)	APC: Universal | (Fork)	APC	APC	APC
Clamping surface	Nominal size	mm	500 x 500 | (400 x 500)	630 x 630 | (500 x 630)	630 x 630	630 x 630	800 x 800 (1,000 x 1,000)
Workpiece dimensions	Diameter D full circle depth D x width W	mm	Ø 720 720 x 850	Ø 900 900 x 1,020	Ø 900 900 x 1,090	Ø 1,000 1,000 x 1,290	Ø 1,400 1,400 x 1,690
	Height H	mm	850	1,000	1,000	1,200	1,500[1)]
Clamping weight		kg	550 (650) | (800)	750 (850) | (1,400)	1,400	1,400	2,000 (3,000)
Load pallet changer	Total / clamping load difference	kg	1,300/650 | (1,200/600)	1,700/850 | (2,000/1,000)	2,000/1,000	2,000/850	4,000/2,000[1)]
Pallet change time		s	14 | (10)	15 | (13)	13	13	21 (23)

1) observe limitations

APC

Automatic Pallet Changer

_automatic pallet changer with lift/swivel principle

_fork-type design with four-point support and robust, hydraulic drive enables high maximum clamping load

_fork shaped lift-and-swivel bridge (optional) ensures optimal force application to machine pallets

_Universal system (H 2000 / H 4000) for full compatibility with HF

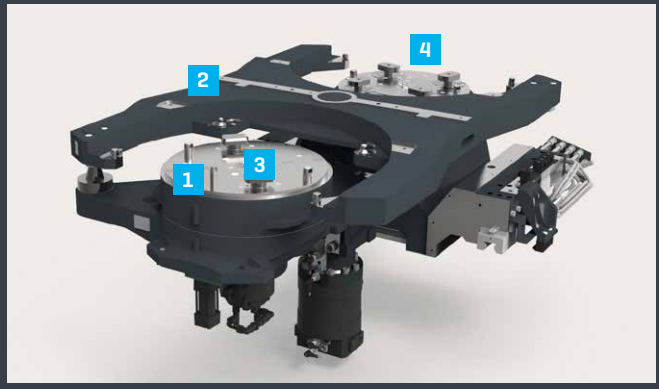
_consistently high tool change accuracy due to robust alignment elements and extensive blow-off of functional surfaces

_machine pallets with DIN hole pattern and standardised alignment elements for rapid mounting of clamping fixtures

_hydraulic pallet clamping for secure hold, even under high process forces

_standardised media interfaces for connecting hydraulic clamping fixtures through the centre of the pallet (option)

_preparation with 7-point media interface and MSS-READY, enabling easy retrofitting of all media interface variants



1 Pallet support

2 Pallet mounting

3 Media Interface

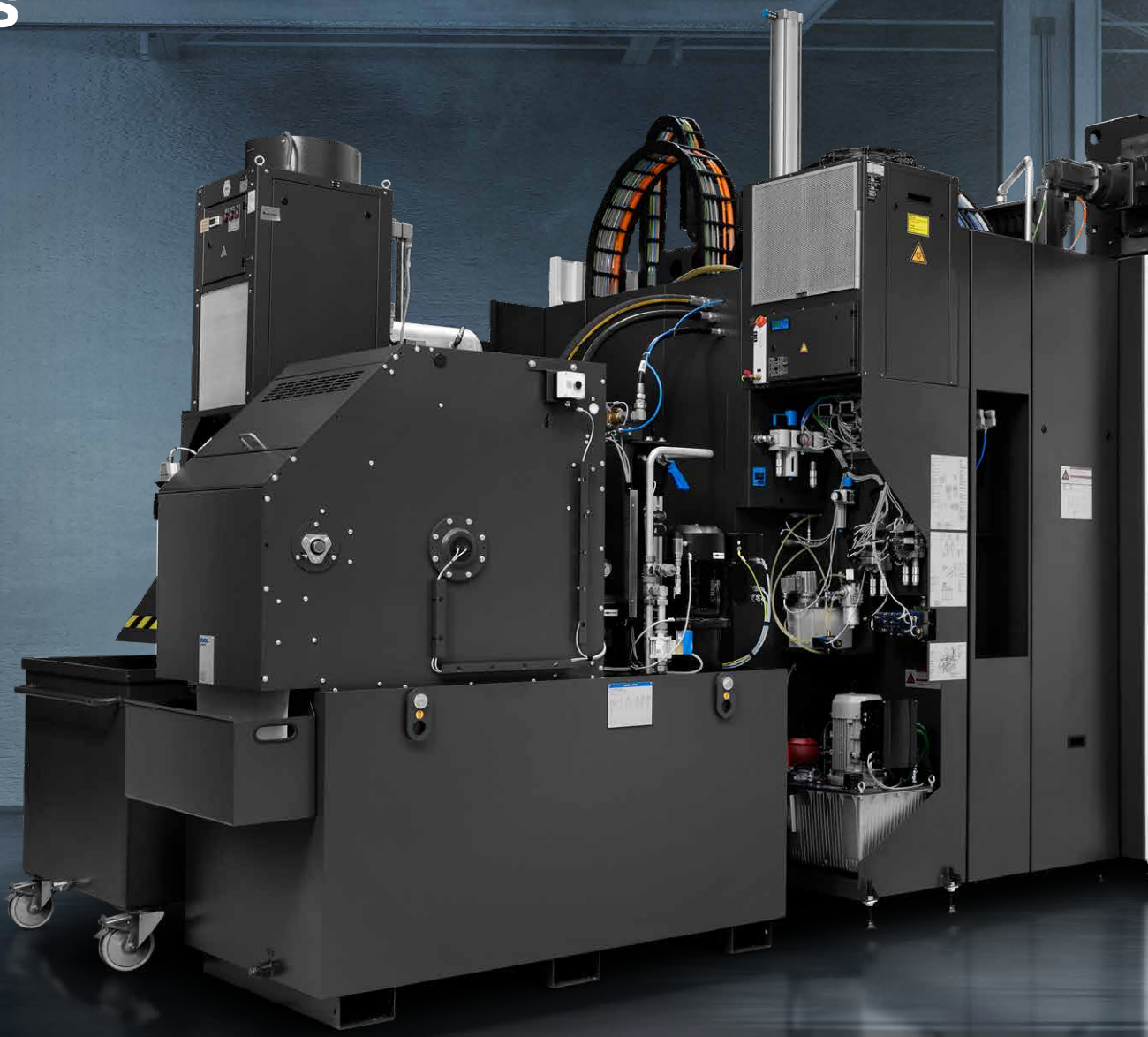
4 Pallet clamping

H 10000	H 14000	H 16000
APC	APC	APC
1,000 x 1,000	1,000 x 1,000	1,250 x 1,600
Ø 1,600 1,600 x 1,990	Ø 1,400 1,650 x 2,690	Ø 2,000 2,000 x 2,690
1,700	1,800	1,725
4,000	4,000	8,000
8,000/2,500	8,000/2,500	16,000/8,000
AA	35	75

Supply and disposal

Perfect solutions for flawless processes

Milling inevitably produces chips. This is especially true for the H series 4-axis machining centres: these extremely robust and reliable machining centres are made for production. Wherever chips are produced, we provide efficient disposal solutions to ensure consistently high precision.



Cooling lubricant supply

_coolant units: paper band filter or backflush filter with high tank volumes available as options

_internal coolant supply (IKZ) through the tool with 50 bar high pressure (option: 70 bar with frequency converter (FU))

_internal coolant supply with up to 7 pressure steps freely programmable via the NC program

_external tool cooling (AKZ) through spindle-integrated flushing nozzles

_integrated work area shower with adjustable nozzles for optimal flushing of the work area and cooling of the workpiece

Options

_coolant cooler for high thermal stability and precision

_coolant temperature control unit

_automatic filling of the coolant unit

_oil skimmer for separation of foreign oil from the cooling lubricant tank

_internal coolant supply IKZ 70 bar with frequency converter (FU)

Chip disposal

_H 2000 – H 6000: unrestricted chip fall below the spindle and rapid removal from the work area via central chip conveyor

_H 8000 – H 16000: chip disposal using spiral conveyors

_design: scraper or hinged belt conveyor (option), selectable according to application

_work area flushing and shower to support rapid chip evacuation on machines equipped with coolant units

_extraction unit (option) for removing coolant mist from the work area

_steep side panels and concertina covers with self-cleaning effect to prevent chip deposits 1

1

Media supply

_easy maintenance with optimal accessibility, all supply units clearly visible at a glance 2

_central oil-air lubrication for key components

_sealing air and targeted blow-off of interfaces ensure consistently smooth machine operation

_media interface for hydraulic workpiece clamping with up to 200 bar (option)

_compressed air and water gun integrated into the machine housing at the workpiece loading station

2

Control technology

Full information – complete control of production

Intuitive to operate, easy to program and equipped with practical features that simplify everyday work – that's what a machine control system should be. Our H series 4-axis machining centres offer a choice of state-of-the-art CNC controls from Siemens and Fanuc.

Machine control

Siemens SINUMERIK ONE

_H 2000 – H 10000: Siemens SINUMERIK ONE

_main operating unit in console design, as standard on machine models H 2000 – H 10000*

_high-performance control for machining centres, meeting the highest standards of performance and machining precision

_optimally integrated and tailored to the requirements of HELLER machining centres

_digital drive technology and modern system architecture

_SINUMERIK Operate user interface for straightforward and intuitive machine operation

_HELLER Operation Interface for even greater ease of operation, as standard on machine models H 2000 – H 10000*

Fanuc 31i-B

_high-performance control for machining centres, meeting the highest standards of performance and machining precision

_operating elements optimally integrated into the machine's main operating unit

_digital drive controller and modern system architecture

_iHMI operating software for machine models H 2000 – H 10000

_highest standards of precision and reliability

HELLER Operation Interface*

_HELLER user interface with 4 function areas for more information at a glance

_24" screen and multi-touch function, ideal for displaying documents and drawings

_practice-oriented Xtends: HELLER extensions with additional functions

_machine control panel with pushbuttons and 2 overrides for optimal control in all operating situations

Options

_main operating unit designed as panel

_ergonomic operating panel at the tool setting station

_HT 2 or HT 10 handheld operating unit

_additional keyboard

_work area camera

_in-process tool monitoring (IPM)

_damage reduction

_tool requirements planning

_automatic loading/unloading sequence

_maintenance manager

_job management

_interpolation turning (IPT)

_PRODUCTION-Assist, QUALITY-Assist and SETUP-Assist

_HELLER Services Interface (HSI) and other HELLER4Industry products

_ASK.me AI chatbot

As standard on machine models H 2000 – H 10000. Available as an option for H 14000 – H 16000.

Operation and maintenance

Optimal access to all work areas

Working with HELLER H series machines, you can feel every day how much engineering experience has gone into these 4-axis machining centres. Whether at the workpiece setting station, during tool loading, programming or maintenance – your comfort, safety and above all, the productivity of your manufacturing operations always come first.

1


2


3


4

Operating station

_ergonomically arranged operating elements and control screens 1

_user-friendly control units with robust glass surface (touch)

_no plastic covers

_stainless steel elements at setting stations

_large safety window for an unrestricted view of the work area

_smooth-running work area door with linear guide opens the roof of the work area in the operator zone 2

_operating modes 2 and 3 included in the standard scope of supply

Options

_handheld operating unit

_screen blow-off for a clear view during machining with coolant

Workpiece setting station 3

_large smooth-running doors for optimal access during loading and set-up using a crane or other handling equipment

_workpiece setting station, lockable at 90° indexing positions, with foot release, unlimited manual rotation

_easy-to-reach operating elements and media guns, integrated into the machine enclosure

Options

_automatically operated loading station door

_automatically rotating NC loading station

_software options: automatic loading and unloading sequence

Tool setting station 4

_ergonomically arranged operating elements

_optimal-height insertion position with integrated release function for easy handling

_tool loading at the magazine while the spindle is running

Options

_ergonomic operating panel at the tool setting station

_tool loading during machining

_tool coding with RFID chip

_HELLER TRP (Tool Requirement Planning) for automatic generation of loading and unloading lists

Easy maintenance

_clear overview of all supply units with easy access

_smooth-running doors and easy-to-remove sheet metal panels

_easy and direct access to the control cabinet

_quick-response HELLER spare part service

Options

_maintenance manager for maintenance planning and operator assistance directly at the machine

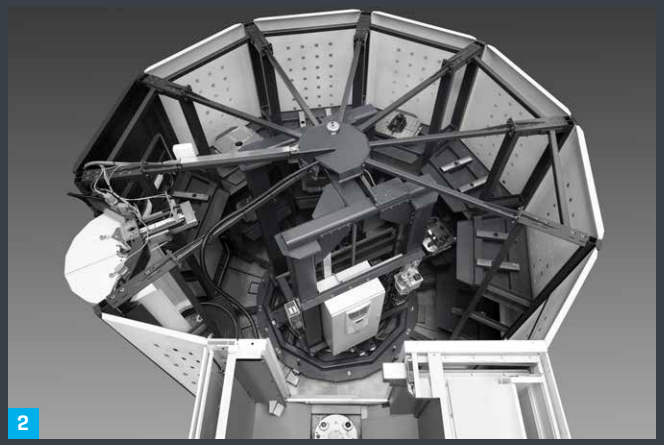
_HELLER TPS (Total Productive Services): service agreements for inspection, maintenance and servicing

Automation solutions

Open to standards – flexible for customised solutions

In automated manufacturing and production centres, the primary focus is on reducing downtime and thus maximising system availability. HELLER has developed its own automation solutions that integrate seamlessly with its highly productive machining centres. To address the wide range of market requirements, this portfolio is complemented by specialised solutions offered by HELLER through best-in-class partnerships.

1


2

3

3


4


5

Pallet automation

Pallet changer

First level of automation, integrated into the machine. Perfect for series production with medium to large batch sizes.

Linear pallet storage 1

Automatic handling of pallets for maximum flexibility. Perfect for series production with small to medium batch sizes.

Rotary pallet storage 2

Automatic handling of pallets for maximum flexibility in a minimum of space. Perfect for series production with small to medium batch sizes.

Options

Automation-READY

Cost-effective, subsequent integration into standardised pallet automation systems

IN-Automation

Optimised interface for fast, immediate integration into standardised pallet automation systems

Workpiece automation

Robots 3

Automatic loading and unloading of workpieces, fixtures and pallets, and automation of other handling operations. Perfect for series production with medium to large batch sizes.

Linear gantry

Linking of system components into production lines for maximum output. Perfect for high-volume production, delivering maximum output with minimal cycle times.

Tool automation

Mobile rack 4

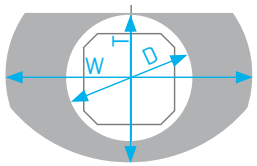
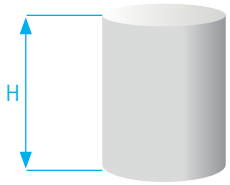
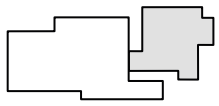
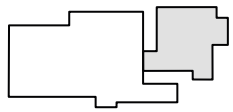
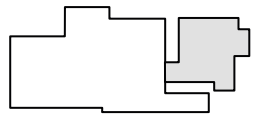
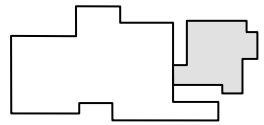
Efficient loading of tool sets on rack-type magazines Portable cassette for tool storage, transport, loading and unloading. The mobile rack can be transported using an automated guided vehicle (AGV).

Background tool magazine 5

Central tool supply for multiple machines. Perfect for production systems with the highest levels of flexibility and automation.

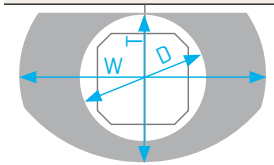
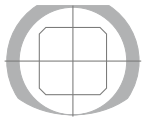
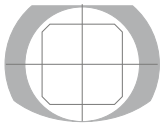
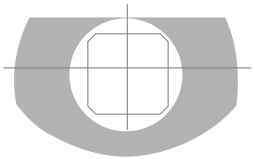
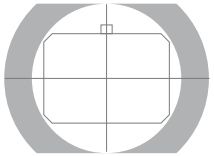
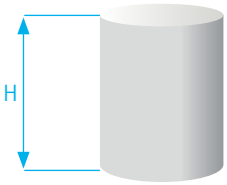
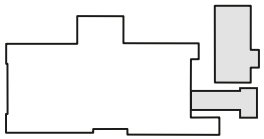
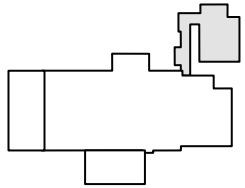
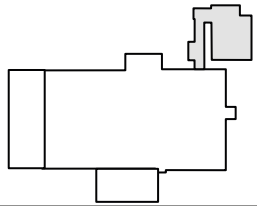
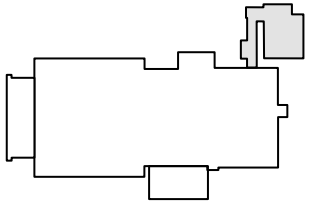
Technical data			H 2000	H 4000	H 5000	H 6000
LINEAR AXES						
Positioning range	X/Y/Z	mm	630/630/630	800/800/800	800/800/800	1,000/1,000/1,000
Rapid traverse speed	X/Y/Z | (PRO or SPEED)	m/min	65 (80/80/90)	65 (80/80/90)	50 (65/65/72)	50 (65/65/72)
Acceleration	X/Y/Z | (PRO or SPEED)	m/s²	10/10/12	10/10/12	5 (7/7/10)	5 (7/7/10)
Feed forces	X/Y/Z | S3 40 %	kN	8 (10/10/12)	8 (10/10/12)	15/15/20	15/15/20
Positioning tolerance Tp / At[4]	X/Y/Z | VDI/DGQ 3441/ ISO 230 |	mm	0.005 (0.003)	0.005 (0.003)	0.005 (0.004)	0.005 (0.004)
ROTARY AXES						
NC rotary feed table	B | Speed/ Torque (S1 100%/S3 40%)	min^{-1}/Nm	100/320 (40/490)	100/870 (20/1,100)	25/2,900	25/2,900
Positioning tolerance Tp / At[4]	B | VDI/DGQ 3441/ISO 230 |	arcsec	8 (5)	8 (5)	8 (5)	8 (5)
MACHINING UNITS						
Tool shank	SK/BT available as an option for selected units	Size	HSK-A 63	HSK-A 63	HSK-A 100	HSK-A 100
Gear spindles	Type: Speed/drive power S6 40 %/ torque S6 40 %	min^{-1}/ kW/Nm			(HPC: 6,000/60/2,292)	(HPC: 6,000/60/2,292)
					(PCe: 8,000/60/1,146)	(PCe: 8,000/60/1,146)
					PC: 8,000/43/822	PC: 8,000/43/822
Inline spindles	Type: Speed/drive power S6 40 %/ torque S6 40 %	min^{-1}/ kW/Nm	(PC: 12,000/45/228)	(PC: 12,000/45/228)	(PC: 10,000/45/360)	(PC: 10,000/45/360)
			(DC: 16,000/56/180)	(DC: 16,000/56/180)	(DC: 12,000/45/400)	(DC: 12,000/45/400)
			(SC: 18,000/45/103)	(SC: 18,000/45/103)	(SC: 13,000/45/228)	(SC: 13,000/45/228)
			SC: 20,000/48/121[5]	SC: 20,000/48/121[5]		
TOOL MANAGEMENT						
Tool shank	SK/BT for selected units also available	Size	HSK-A 63	HSK-A 63	HSK-A 100	HSK-A 100
Chip-to-chip time[1]	$t_{2.3}$ | VDI 2852 | (SPEED)	s	2.2	2.3	3.4 (3.0)	3.6 (3.2)
Tool weight[2]		kg	12	12	25 (35)	25 (35)
Chain-type magazines	Magazine places	Number	54 (80/160/240)	54 (80/160/240)	50 (100/150)	50 (100/150)
	Tool length/diameter[3]	mm	410/Ø 160	450/Ø 160	600/Ø 280	600/Ø 280
Rack-type magazines	Magazine places	Number	(324/498)	(324/498)	(200/260/340/425)	(200/260/340/425)
	Tool length/diameter[3]	mm	(410/Ø 188)	(450/Ø 188)	(600/Ø 280)	(600/Ø 280)

( ) = optional values **-** = not available **1)** applies to Siemens SINUMERIK **2)** observe total load **3)** with free adjacent places **4)** position uncertainty **5)** S6 10%

Technical data			H 2000	H 4000	H 5000	H 6000
WORKPIECE MANAGEMENT						
Type			APC: Universal | (Fork)	APC: Universal | (Fork)	APC	APC
Clamping surface	Nominal size	mm	500 x 500 | (400 x 500)	630 x 630 | (500 x 630)	630 x 630	630 x 630
Workpiece dimensions						
	Diameter D full circle Depth D x width W	mm	Ø 720 720 x 850	Ø 900 900 x 1,020	Ø 900 900 x 1,090	Ø 1,000 1,000 x 1,290
						
	Height H	mm	850	1,000	1,000	1,200
Clamping weight		kg	550 (650) | (800)	750 (850) | (1,400)	1,400	1,400
Load pallet changer	Total / clamping load difference	kg	1,300/650 | (1,200/600)	1,700/850 | (2,000/1,000)	2,000/1,000	2,000/850
Pallet change time		s	14 | (10)	15 | (13)	13	13
MACHINE						
Dimensions	approx. L x W x H | Basic machine with standard chain-type magazine, coolant unit with paper band filter and platforms, if required.	mm	6,300 x 2,550 x 3,400	6,700 x 2,950 x 3,500	7,300 x 3,380 x 3,900	7,650 x 3,500 x 4,300
	approx. L x W x H | Basic machine with standard chain-type magazine, coolant unit with backflush filter and platforms, if required.	mm	6,300 x 2,750 x 3,400	6,700 x 3,150 x 3,500	7,300 x 3,380 x 3,900	7,650 x 3,500 x 4,300
						
Weight	approx. | Basic machine with standard chain-type magazine, without coolant unit	t	10	11	15	15
CONTROL TECHNOLOGY						
Machine control			Siemens SINUMERIK ONE / Fanuc 31i-B			

Technical data			H 8000		H 10000		H 14000	H 16000
LINEAR AXES								
Positioning range	X/Y/Z	mm	1,400/1,200/1,400		1,700/1,400/1,600		2,400/1,600/1,600	2,400/1,600/1,600
Rapid traverse speed	X/Y/Z | [SPEED]	m/min	50 [60]		50 [60]		41/45/45	41/45/45
Acceleration	X/Y/Z | [SPEED]	m/s²	4 [6]		4 [5/6/4]		3	3/3/2
Feed forces	X/Y/Z | S3 40 %	kN	15/25[5]/20		15/25/20		15/15/20	15/15/20
Positioning tolerance Tp / At[4]	X/Y/Z | VDI/DGQ 3441/ ISO 230	mm	0.008		0.008		0.008	0.008
ROTARY AXES								
NC rotary feed table	B | Speed/ Torque S3 40 %	min^{-1}/ Nm	10/2,900		10/3,000		10/3,000	8/3,000
Positioning tolerance Tp / At[4]	B | VDI/DGQ 3441/ ISO 230	arcsec	8		8		8	8
MACHINING UNITS								
Tool shank	SK/BT available as an option for selected units	Size	HSK-A 100	[HSK-A 63]	HSK-A 100	[HSK-A 63]	HSK-A 100	HSK-A 100
Gear spindles	Type: Speed/ Drive power S6 40 %/ Torque S6 40 %	min^{-1}/ kW/Nm	[HPC: 6,000/60/2,292]		[HPC: 6,000/60/2,292]		[HPC: 6,000/60/2,292]	[HPC: 6,000/60/2,292]
			[PCe: 8,000/60/1,146]		[PCe: 8,000/60/1,146]		[PCe: 8,000/60/1,146]	[PCe: 8,000/60/1,146]
			PC: 8,000/43/822		PC: 8,000/43/822		PC: 8,000/43/822	PC: 8,000/43/822
Inline spindles	Type: Speed/ Drive power S6 40 %/ Torque S6 40 %	min^{-1}/ kW/Nm	[PC: 10,000/45/360]	[PC: 12,000/45/228]	[PC: 10,000/45/360]	[PC: 12,000/45/228]		
			[DC: 12,000/45/400]	[DC: 16,000/56/180]	[DC: 12,000/45/400]	[PC: 16,000/56/180]	[EEC: 12,500/38/242][7]	[EEC: 12,500/38/242][7]
			[SC: 13,000/45/228]	[SC: 18,000/45/103]	[SC: 13,000/45/228]	[SC: 18,000/45/103]	[SC: 12,500/52/166]	[SC: 12,500/52/166]
TOOL MANAGEMENT								
Tool shank	SK/BT available as an option for selected units	Size	HSK-A 100	HSK-A 100	HSK-A 100	HSK-A 100	HSK-A 100	HSK-A 100
Chip-to-chip time[1]	$t_{2.3}$ | VDI 2852 | [SPEED]	s	4.0 [3.8]	[3.9]	4.4 [4.1]	[4.3]	6.7	6.7
Tool weight[2]		kg	25 [35]	[15]	25 [35]	[15]	25 [35]	25 [35]
Chain-type magazines	Magazine places	Number	50 [100/150]	50 [100/150]	50 [100/150]	50 [100/150]	50 [100/150]	50 [100/150]
	Tool length/diameter[3]	mm	600 [800]/Ø 280	[600/Ø 188]	600 [800]/Ø 280	[600/Ø 188]	600 [800]/Ø 280	600 [800]/Ø 280
Rack-type magazines	Magazine places	Number	[200/260/340/425]	[324/498]	[200/260/340/425]	[324/498]	[265/425]	[265/425]
	Tool length/diameter[3]	mm	[600 [800]/Ø 280]	[600/Ø 188]	[600 [800]/Ø 280]	[600/Ø 188]	[600 [1,000]/Ø 280]	[600 [1,000]/Ø 280]

[ ] = optional values **-** = not available **1)** applies to Siemens SINUMERIK **2)** observe total load **3)** with free adjacent places **4)** position uncertainty **5)** in Y- **6)** observe limitations **7)** S6 10%

Technical data			H 8000	H 10000	H 14000	H 16000
WORKPIECE MANAGEMENT						
Type			APC	APC	APC	APC
Clamping surface	Nominal size	mm	800 x 800 (1,000 x 1,000)	1,000 x 1,000	1,000 x 1,000	1,250 x 1,600
Workpiece dimensions	 Diameter D full circle Depth D x width W	mm	 Ø 1,400 1,400 x 1,690	 Ø 1,600 1,600 x 1,990	 Ø 1,400 1,650 x 2,690	 Ø 2,000 2,000 x 2,690
	 Height H	mm	 1,500[7]	 1,700	 1,800	 1,725
Clamping weight		kg	2,000 (3,000)	4,000	4,000	8,000
Load pallet changer	Total / clamping load difference	kg	4,000/2,000[6]	8,000/2,500	8,000/2,500	16,000/8,000
Pallet change time		s	21	UR	35	75
MACHINE						
Dimensions	approx. L x W x H | Basic machine with standard chain-type magazine, coolant unit with paper band filter and platforms, if required.	mm	8,600 x 5,000 x 4,300	9,200 x 5,400 x 4,700	8,800 x 7,100 x 5,400	11,400 x 7,400 x 5,500
	approx. L x W x H | Basic machine with standard chain-type magazine, coolant unit with backflush filter and platforms, if required.	mm	8,500 x 5,300 x 4,300	9,100 x 5,700 x 4,700	9,200 x 6,900 x 5,400	11,800 x 7,200 x 5,500
						
Weight	approx. | Basic machine with standard chain-type magazine, without coolant unit	t	25	34	34	52
CONTROL TECHNOLOGY						
Machine control			Siemens SINUMERIK ONE/Fanuc 31i-B		Siemens SINUMERIK 840D sl/Fanuc 31i-B	Siemens SINUMERIK 840D sl

Machines

Productivity over the full spectrum

4-axis machining centres

H

Tailor-made off the peg:
Flexibly configurable 4-axis machining centres with unbeatable productivity and unparalleled resilience

5-axis machining centres

HF

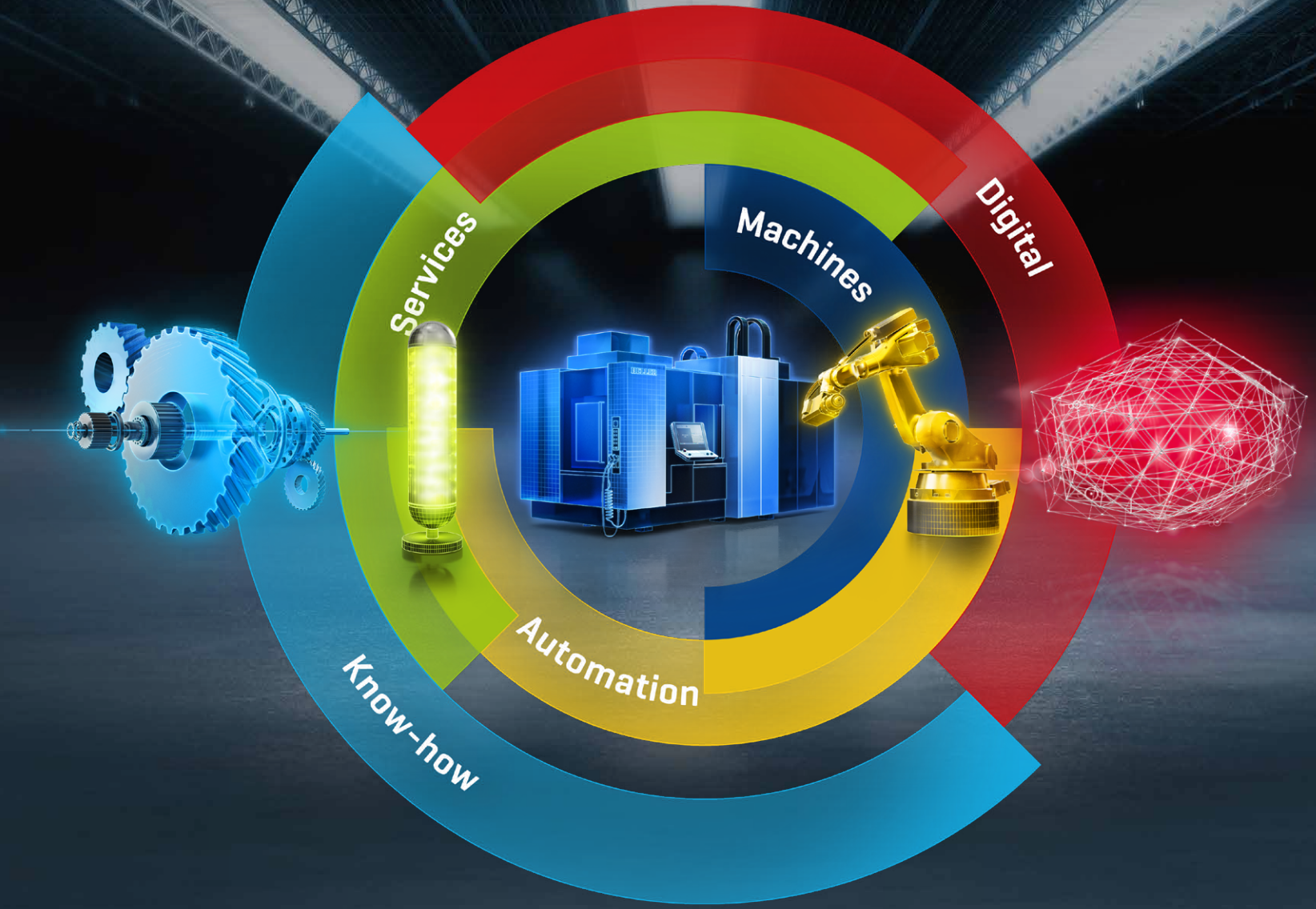
Productivity in 5 axes:
5-axis machining centres with the 5th axis in the workpiece for dynamic and productive machining

5-axis machining centres

F

The benchmark in 5 axes:
5-axis machining centres with the 5th axis in the tool for high-performance 5-sided and simultaneous 5-axis machining

360° solutions for the manufacturing of tomorrow



Machines
Full spectrum of productivity

Get the most out of your production – with tailored solutions from stand-alone machine to manufacturing system. Made by HELLER – made to work.

Automation
Flexible, value-adding, competitive

Reduce idle times and optimise system availability – with customised concepts for pallet, workpiece and tool automation.

Services
Lifetime Partnership

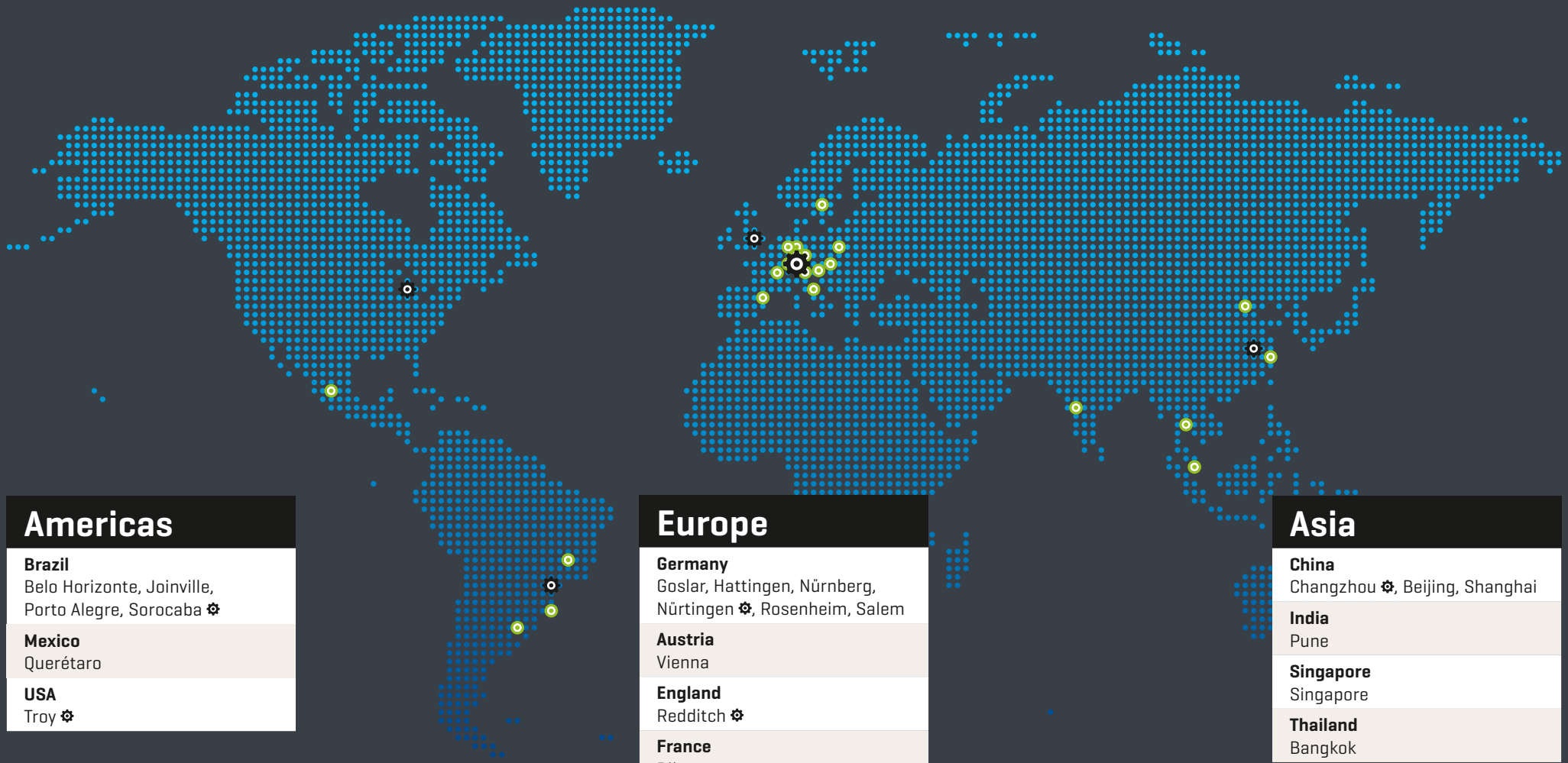
Experience genuine support throughout the entire life cycle of your machine – from project planning through to reuse. Fast, flexible, customer-oriented.

Digital
Equipped for the factory of the future

Increase the productivity of your machines through digitalisation – with user-oriented, future-proof operating systems, interfaces and applications.

Know-how
Experience meets the spirit of innovation

Since 1894, we have built an ever-growing wealth of experience. Benefit from our expertise with in-depth application assessments, technological innovations and hands-on training courses.



Americas

Brazil
Belo Horizonte, Joinville, Porto Alegre, Sorocaba ⚙

Mexico
Querétaro

USA
Troy ⚙

Europe

Germany
Goslar, Hattingen, Nürnberg, Nürtingen ⚙, Rosenheim, Salem

Austria
Vienna

England
Redditch ⚙

France
Dijon

Italy
Verona

Poland
Posen

Slovakia
Vráble

Spain
Barcelona

Sweden
Värnamo

Switzerland
Appenzell

Asia

China
Changzhou ⚙, Beijing, Shanghai

India
Pune

Singapore
Singapore

Thailand
Bangkok

⚙ Production
Sales and Service

www.heller.biz/en
Download brochure as PDF: