



High-Speed-Cutting –  
Highly dynamic 5-axis Precision Centres

HSC series

**DMG**

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**The complete range of HSC products in the new HSC Centre.**

Visit the HSC Centre to see the entire process chain for high-speed machining. The latest milling and turning machines can be found in our 2,000 m<sup>2</sup> exhibition area. Together with our capable partners, we give you comprehensive support, from programming, to tool selection, balancing, shrink-fit and measurement technologies.

**In addition, our technology seminars will show you the latest trends and opportunities for production process optimisation.**

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[1] Machine [2] CAD / CAM [3] Tools [4] Control  
[5] Measurement technology [6] Balancing

## HSC newly defined – 5-axis HSC Precision Machines in a class of their own.

DMG sets the course for a new dimension of high-speed machining on precision machines in the new HSC series, which are in a class of their own with three to five simultaneous axes. Linear and torque technologies in all five axes with accelerations  $> 2g$  as well as spindle speeds up to 42,000 rpm mean the highest dynamics with absolute stability while maintaining the shortest machining times, the highest quality surfaces, with  $Ra < 0.2 \mu m$  and the greatest positioning accuracy, at  $< 5 \mu m$ . Whether it's high-performance milling with high machining volumes for demanding moulding components, HSC machining or micro-precision machining of complex components with the most filigreed geometries – the HSC series has the best manufacturing solution for every application with the highest quality requirements.



Medical / Dental



Coins / Medals



Precision mechanics



Impeller



Automotive



Stamping tools



Tool + die making



Electrodes



Aerospace

# 5-axis HSC Precision Centres with standard technology features.

DMG's HSC series impresses with its consistent high performance, down to the last detail. Besides high dynamic drives and high-performance spindle options, numerous high-tech features provide maximum flexibility and productivity. HSC machining comprises specially calibrated software features, including Advanced Surface\* or ATC (Automatic Application Tuning Cycle) which, together with the high-performance Siemens 840D solutionline and Heidenhain iTNC 530 CNC controls, guarantee the simplest handling and best possible machining results. The optional integration of ULTRASONIC technology in the HSC 20 / 55 *linear* expands the machining spectrum to the entire range of materials, including soft and hard, all the way up to advanced materials such as glass and ceramics.

\* only with Siemens



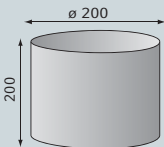
HSC 20 *linear*

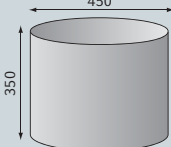


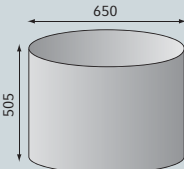
HSC 55 *linear*



HSC 75 *linear*

Traverse paths		
X-axis	mm	200 */**
Y-axis	mm	200 */**
Z-axis	mm	280 */**
Work table		
Measurements	mm	380×320* ø 200**
Work piece weight	kg	100* / 10**
		

Traverse paths		
X-axis	mm	450* / 450**
Y-axis	mm	580* / 650**
Z-axis	mm	460* / 460**
Work table		
Measurements	mm	460×600* 400×400**
Work piece weight	kg	600* / 200**
		

Traverse paths		
X-axis	mm	750* / 885**
Y-axis	mm	600* / 600**
Z-axis	mm	560* / 600**
Work table		
Measurements	mm	950×650* ø 750**
Work piece weight	kg	1,000* / 800**
		

\* 3-axis, \*\* 5-axis

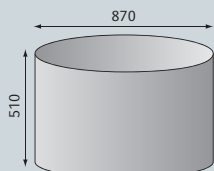


- 1| Uniform 5-axis options package 2| Linear drives with precision cooling in X / Y / Z as standard equipment  
3| Individual automation solutions for palletised and unpalletised work piece handling



### HSC 105 linear

Traverse paths		
X-axis	mm	1,050* / 1,110**
Y-axis	mm	800* / 800**
Z-axis	mm	560* / 600**
Work table		
Measurements	mm	1,200 × 850* ø 950**
Work piece weigh	kg	1,800* / 800**



### Highlights

- \_ Thermosymmetric portal design: greatest stability and consistent precision
- \_ Greatest flexibility: **5-axis precision machining** with integrated swivel / rotary axis
- \_ Highest dynamics and precision: **Linear technology in X / Y / Z** with > 2g; water-cooled torque motors in the rotary axes
- \_ **Max. 42,000 rpm**, water-cooled HSC high-performance spindle
- \_ **DMG ERGOLINE® Control** with 19" screen and 3D software
- \_ **Consistent user interface:** available with Siemens 840D solutionline or Heidenhain iTNC 530
- \_ Special software features: **ATC, MDynamics\*, 3D quickSET®**

\* only with Siemens



5-axis portal machine with 42,000 rpm and linear drives with  $> 2\text{ g}$  as standard equipment; compact, requiring only  $3.5\text{ m}^2$ .

Requiring only  $3.5\text{ m}^2$  of floor space, the HSC 20 *linear* is the most compact machine in the HSC series, unifying dynamics, precision, compactness and stability in one high-tech machine tool. Linear drives with acceleration  $> 2\text{ g}$  in X / Y / Z, the water-cooled high-frequency spindle with 42,000 rpm and HSK-E32 tool uptake as standard equipment (optional: 42,000 rpm with HSK-E40; 60,000 rpm with HSK-E32) as well 5-axis portal design in a thermosymmetric monoBLOCK® construction with integrated NC swivel rotary table mean the best possible surface quality up to  $R_a < 0.2\text{ }\mu\text{m}$  while maintaining the greatest accuracy and dimensional stability.



**HSC 20 *linear*:** With  $> 2\text{ g}$  acceleration and a surface of  $3.5\text{ m}^2$ , this machine is the most dynamic and most compact HSC Precision Machine.



|1| Workspace: Integrated NC swivel rotary table |2| 5-axis complete machining of a bone plate in titanium |3| Finish machining of a CrCo femur component |4| Linear drive in X / Y / Z with >2g |5| 24-pocket tool changer as standard equipment (optional: 60 pockets) |6| Watch mechanism plate



### HSC 20 *linear* Highlights

- \_ **5-axis gantry-type portal machine** with integrated NC swivel rotary table (A and C axes)
- \_ **Stable, vibration dampening cast polymeric concrete base in monoBLOCK® design** – compact, requiring only 3.5 m<sup>2</sup> floor space
- \_ **Linear drives in X / Y / Z with > 2g**; water-cooled torque technologies in the rotary axes
- \_ **42,000 rpm HSC spindle** with active cooling and HSK-E32 as standard equipment
- \_ **24-pocket tool changer** as standard equipment (optional: 60 pockets)

### HSC 20 *linear* principal options

- \_ **ULTRASONIC:** Flexible integration of the HSK-S32 / 40 actuator systems (optional)
- \_ **High-performance spindle** with increased spindle torque (max. 7.8 Nm) (Optional: 42,000 rpm with HSK-E40; 60,000 rpm with HSK-E32)
- \_ **Graphite package:** Extraction unit / system for machining dust
- \_ **Anti-static system** for PE machining, for example
- \_ **Can be automated** using PH 101/100 linear magazine

## HSC newly defined – The highest precision and dynamics.

Next generation, High-speed cutting. The combination of a highly stable design, the latest drive technology and high-end spindle technology give the HSC 55 *linear* unparalleled performance during HSC machining. The foundation for the outstanding dynamics and precision of the HSC 55 *linear* is the mineral-composite machine bed in the closed gantry design. The thermo symmetric design ensures the highest precision. Linear drives in all axes allow rapid traverses up to 80 m/min and 2.3 g acceleration. In the standard version, the 28,000 HSC spindle, combined with the HSK-A63 receiver guarantees not only better tool durability, but also improved surface qualities for simultaneous, high chipping-time volumes in this precision class.



**HSC 55 *linear*:**  
5-axis simultaneous machining with the NC  
rotary table with a gantry drive in the Y-axis.





**[1]** Thermo symmetrical gantry design with a gantry drive **[2]** Tool magazine with a double gripper  
**[3]** 5-axis simultaneous machining of an injection mould made from hardened steel **[4]** Linear drives  
 in X / Y / Z with > 2 g **[5]** 5-axis machining: Integrated NC-swivel rotary table with torque drives

## HSC 55 *linear* Highlights

- \_ **Highest dynamics and precision** with linear drives in all axes
- \_ **28,000 rpm spindle** with HSK in the standard version: High stability during chip removal, better tool durability / reduced tool costs and better surfaces
- \_ **High-performance spindle with 42,000 rpm** and the HSK-E50 (Optional)
- \_ **Optional integration of ULTRASONIC Technology**
- \_ **Optimal work area configuration for HSC and graphite machining** – Complete drives and guides outside of the work area
- \_ **Thermo symmetrical design** for the highest, lasting precision
- \_ **Optional 5-axis machining** with a gantry drive and with water-cooled torque drives
- \_ **16x tool changer** in the standard version (Option: 30 / 60 / 120)
- \_ **DMG ERGOline® Control** with a 19" screen and 3D-software
- \_ DMG developed control features especially for HSC machining such as **ATC** (Application Tuning Cycle), **AAC** (Automatic Acceleration Control) and **AFC** (Automatic Feedrate Control)



**HSC 55 *linear* machine bed made from mineral composite:** In the thermo symmetrical gantry design.

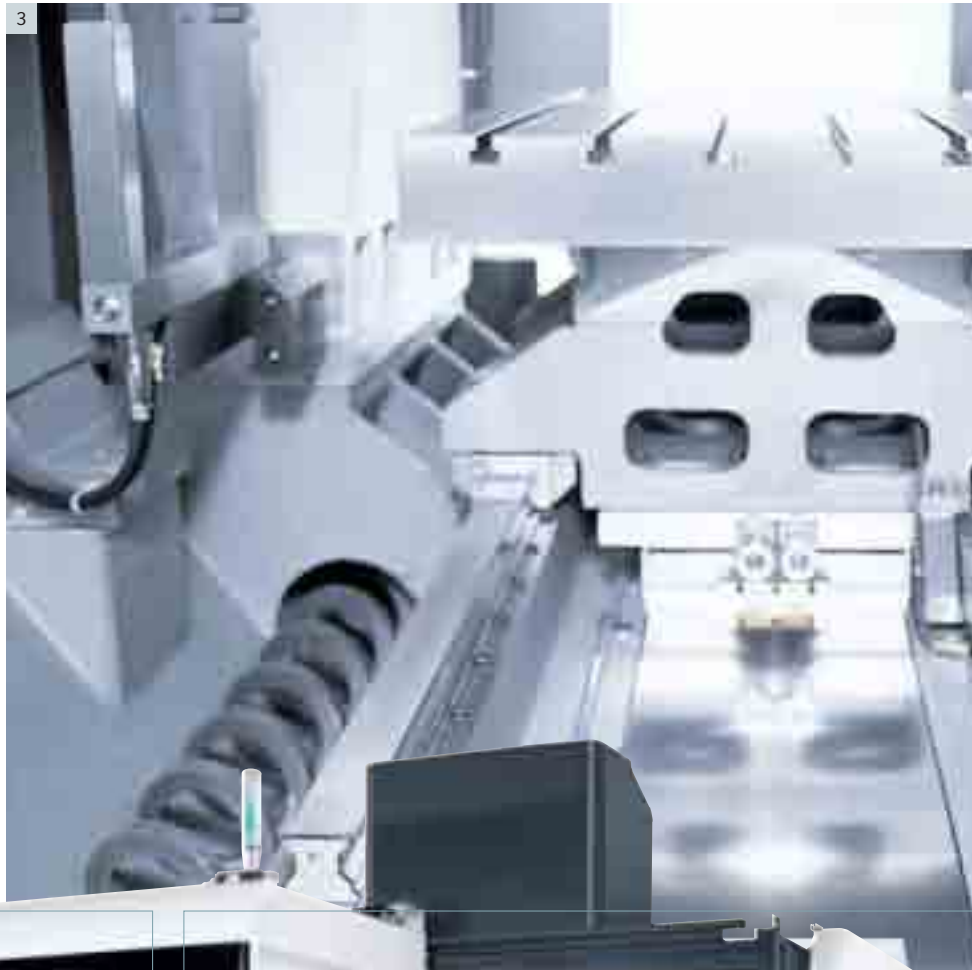
## Top-class HSC Precision Centres.

The HSC 75 / 105 *linear* will impress you with the highest dynamics and precision. The cast-iron machine bed in a thermo symmetrical design offers absolute stability for challenging operations and forms the foundation for the highest precision and long-lasting accuracy. Linear drives in all axes allow accelerations of  $> 2g$  as well as rapid traverses up to 90 m/min. In connection with the direct measuring systems, they guarantee the highest contour accuracy and the best surface qualities.

The torque-intense 18,000 rpm motor spindle in the standard version has a broad range of application in tool and die making. The optional 42,000 rpm high-performance spindle, the up to 180x tool changer as well as the flexible automation solutions increase productivity and expand the range of applications.

**HSC 75 / 105 *linear*:**

5-axis simultaneous machining with the NC rotary table and a swivel spindle (Optional).



1| 5-axis simultaneous machining 2| 18,000 rpm motor spindle 3| Linear drives and measuring systems in all axes





**linear** **|| DRIVE**

### HSC 75 / 105 *linear* Highlights

- \_ **Linear drives in all axes** for the highest precision, accelerations of  $>2\text{ g}$  and  $90\text{ m/min}$  rapid traverse
- \_ **5-axis simultaneous machining** with direct drive in the spindle head and an NC rotary table (Optional)
- \_ **18,000 rpm motor spindle in the standard version**, optional motor spindle with **28,000 rpm** (HSK-A63) or **42,000 rpm** (HSK-E50)
- \_ **DMG ERGOline® Control** – with a 19" screen and **3D-software** Heidenhain iTNC 530 or Siemens 840D solutionline – optimal user comfort and reduction of programming time
- \_ Especially for HSC machining, DMG developed control features such as **ATC** (Application Tuning Cycle), **AAC** (Automatic Acceleration Control) and **AFC** (Automatic Feedrate Control)



**HSC 75 / 105 *linear* cast-iron machine bed:**  
Thermo symmetrical gantry design with entry niches for outstanding accessibility







**5-axis simultaneous machining** of an injection mould with the highest contour accuracy on an HSC 105 *linear* with direct drive in the spindle head and the NC rotary table.



## HSC 20 *linear* with a linear magazine PH 10 I 100 – flexible for all clamping systems.

The integrated PH 10 I 100 automation solution allows up to 99 palletised work pieces to be exchanged from above. All clamping systems on the market can be integrated. A pallet change takes < 30 seconds. Best accessibility and automation are assured by the 10 I 100 compact integrated design.



I1| Stable pallet change of  
< 30 seconds I2| PH 10 I 100  
integrated automation with  
max. 99 pallet places

Moreover, the PH 10 I 100 linear magazine is available in various multi-automation upgrades including an optional double gripper for palletised and unpalletised work piece handling (WH 10 I 100).



### HSC 20 *linear* with PH 10 I 100 linear magazine

- \_ **Integrated linear magazine** with **max. 99 pallet places** (max. 10 kg)
- \_ Dynamic and stable **pallet change < 30 seconds from above**
- \_ Flexibility: **Integration of all available clamping system**
- \_ **Six tiers as standard**, optional five additional tiers
- \_ Configurable **pallet tiers** with **3, 5, 7 or 9 pallet places**
- \_ **Best accessibility**; compact, requiring only 6 m<sup>2</sup> of floor space
- \_ **ADVANCED version** for palletised and unpalletised work piece handling: max. 99 work pieces (single automation), max. 297 work pieces (multi-automation, unpalletised)
- \_ **PROFESSIONAL version** for unpalletised work piece handling via WH 10 I 100 with part drawer: max. 470 work pieces (single-automation), max 1,410 work pieces (multi-automation)

## HSC 55 *linear* – PH 130 | 70.

The new PH130 | 70 work piece magazine can be simultaneously equipped with pallets of multiple sizes (such as 6 × UPC, 30 × ITS 148, 30 × ITS 50) and thus allows maximum flexibility. With a transfer weight of up to 130 kg, the system offers up to 70 storage places. The machine can be equipped through the portal from behind, maintaining the unrestricted accessibility of the workspace.

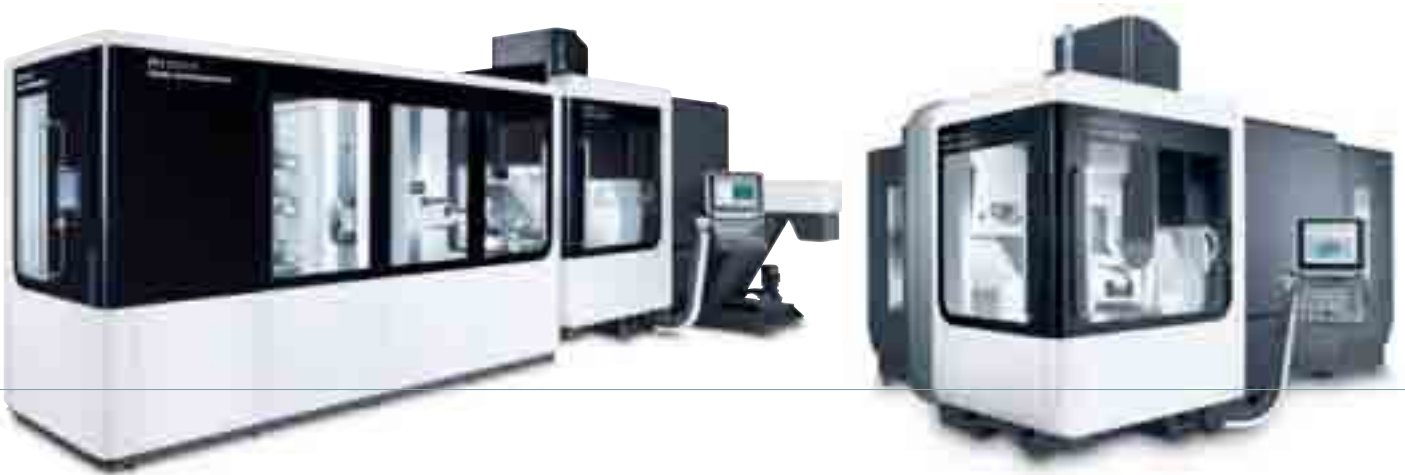


### HSC 55 *linear* with PH 130 | 70

- \_ Individual placement means the greatest flexibility
- \_ Pallet magazine with 70 places for pallets of different sizes (UPC 320, ITS 148, ITS 50)
- \_ Simplest pallet handling with unrestricted accessibility to the workspace
- \_ Set-up station with control panel for loading during machining

## HSC 75 / 105 *linear* – pallet storage.

The HSC 75 *linear* and HSC 105 *linear* are both available with optional 20× pallet storage. On standardised pallet mounts, parts with handling weights up to 100 kg can be changed and replaced automatically. In order to reach the shortest preparation times, the system can be expanded through the innovative 180× tool magazine.



### HSC 75 / 105 *linear* with pallet storage

#### \_ **Pallet storage for 20 workpieces for the HSC 75 / 105 *linear*:**

Fully-automated exchange of the pallets through a portal, pallet sizes 320 × 320 mm and transfer weight up to 100 kg

#### \_ **Low space requirements and great accessibility**

for easy mounting

#### \_ **Modular pallet magazine** with a transfer weight up to 500 kg

#### \_ **Tool magazine** with up to 180 pockets

### HSC 75 *linear* with PH 200 | 12

#### \_ **Max. 200 kg handling weight** for large, heavy pieces

#### \_ **Pallet magazine** with 12 places for pallets of 500 × 500 mm

#### \_ **Simplest pallet handling** with best accessibility and excellent visibility

#### \_ **Set-up station** with control panel for loading during machining

|3| Pallet storage for 20 workpieces |4| Pallet handling for parts up to 200 kg

## Innovations – 5-axis package and ULTRASONIC integration.



### 5-axis package

**Standard 5-axis options packages at an attractive price incl.:**

- \_ 5-axis machine versions
- \_ Infrared measuring probe for work piece measurement
- \_ Laser tool measurement
- \_ 3D quickSET®
- \_ ATC software

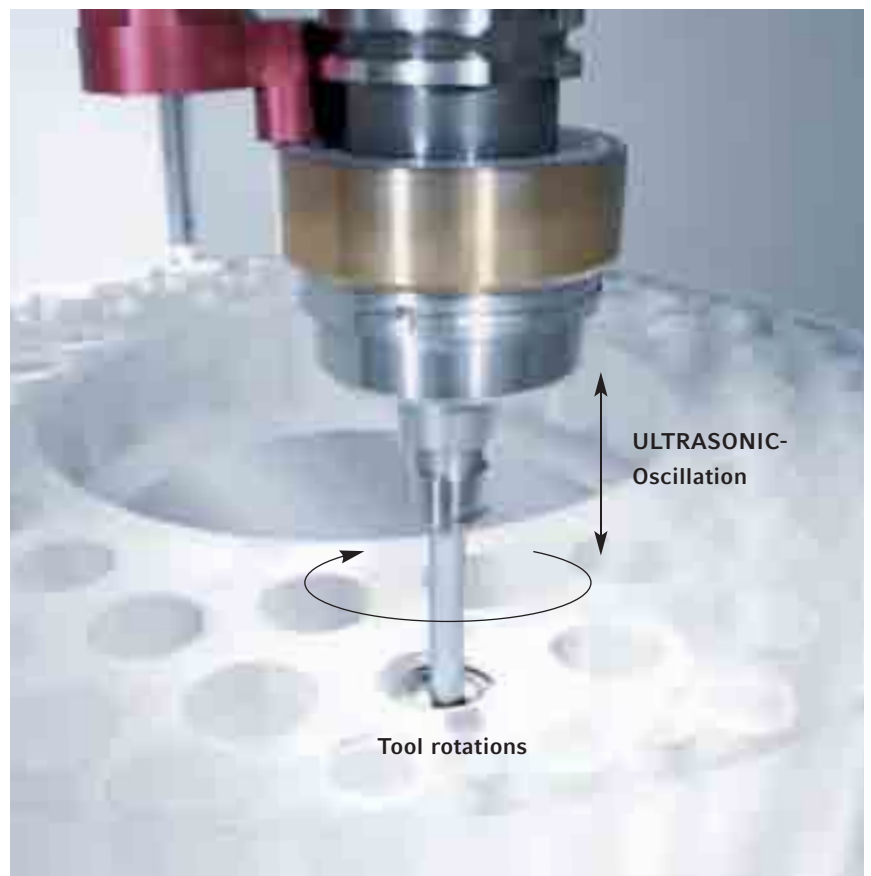
### ULTRASONIC

**Flexible integration of ULTRASONIC technology (optional)**

- \_ ULTRASONIC integration in the HSC 20 *linear* (HSK-E32 / 40) and HSC 55 *linear* (HSK-E63)
- \_ Technology combination: HSC milling and ULTRASONIC hard machining

#### ULTRASONIC Technology

On the basis of the ULTRASONIC HSK-actor system, the ultrasonic high frequency is transferred via induction from the spindle to the tool holder. Oscillating motion in the Z axis is generated on the rotating tool and the active process energy is significantly reduced.



## Application examples: HSC 20 / 55 / 75 / 105 *linear*

### Medical



#### Additional application examples:

Knee (Zirconium), Bone pin (1.2347),  
Bone plates, (Titanium),  
Prostheses (Titanium), Implants (Ti),  
Cutting / Drilling gauges (Ti)

I1| Bone nail (1.2347)

I2| Femur component (CrCo)

### Dental



#### Additional application examples:

Crowns, bridges, inlays, on lays,  
ligaments & abutments (CrCo, Titanium,  
white ZrO<sub>2</sub>), implants (Titanium, white ZrO<sub>2</sub>)

I3| CrCo circular blank with dental crowns and bridges

I4| Abutment in titanium

### Precision mechanics



#### Additional application examples:

Watch mechanism plates, bearing components,  
watch parts, watch faces, other high-precision  
components (light metal, steel, gold, mother-  
of-pearl)

I5| Bores of  $\varnothing$  0.4 mm in a light metal watch mechanism

plate I6| Milling a watch mechanism plate in steel

### Electrodes



#### Additional application examples:

Graphite Electrodes, Copper electrodes

I7+8| Complete machining of graphite electrodes with  
thin separators < 1 mm



## Application examples: HSC 20 / 55 / 75 / 105 *linear*

### Impeller



#### Additional application examples:

Straight Impeller (Ti, Al), Impeller with a splint (Ti, Al), "rolled & lined impellers" (Ti, Al), high-speed turbines (Ti), environmental technology (Al)

**|9 + 10|** 5-axis simultaneous machining of compressor impellers in aluminium and titanium

### Aerospace



#### Additional application examples:

Impeller (Titanium), Blisks (Titanium), Blades (Titanium), Integral parts (Al), High-precision parts (Al)

**|11|** Blade machining in Inconel

**|12|** Blisk machining in titanium

### Automotive



#### Additional application examples:

Dashboard (1.2312), radiator grill (1.2312), headlight reflector, engine cover (1.2312), tires and rims (1.2312), gear wheels (1.2744)

**|13|** 5-axis complete machining of an automotive rim mould in tool steel

**|14|** Tire moulding tool

### Tool and die making



#### Additional application examples:

Bottle mould (Aluminium), fittings & screws (1.2344), embossing stamp (1.2379), forging die (1.2714), injection moulds (1.2312)

**|15|** Highest contour accuracy: injection mould in tool steel

**|16|** Forging die (1.2312)

## The latest CNC Control Technology for perfect HSC performance.

All machines of the HSC generation are equipped with the ergonomic DMG ERGOline® Control with a 19" screen, cover the entire series and are available with the Siemens 840D solutionline as well as with the Heidenhain iTNC 530. Special functions of both control options directly support user-oriented and goal-oriented high-speed machining, and at the same time optimise the interfaces from CAD through to CNC.

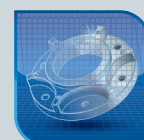
Different software features are available as options such as ATC, MDynamics\*, 3D quickSET® and DMG Virtual Machine, which have a direct influence on the work piece quality or on process optimisation.

\* only with Siemens



### DMG Virtual Machine

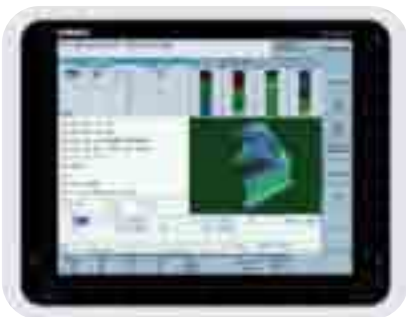
**The 1:1 simulation of your machine – Integration of geometry, kinematics and dynamics of your DMG machine** including all functionalities of CNC and PLC – Increase your efficiency with maximum production safety and the reduction of setup times by up to 80 %!





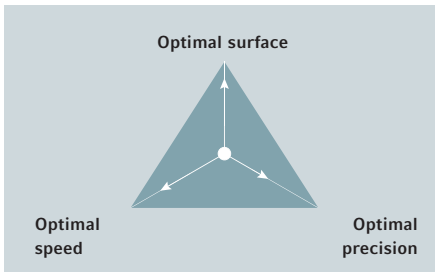
### Siemens 840D solutionline

- \_ Easy, interactive CNC programming
- \_ Fast editing of large CNC programmes
- \_ Comprehensive 5-axis functionality
- \_ Quick-view simulation of complex programme parts
- \_ Direct spline machining of CAD data
- \_ Efficient tool management



### Heidenhain iTNC 530

- \_ Shop floor or DIN / ISO programming
- \_ 3D-workpiece simulation
- \_ Visual programming
- \_ Coordinate transformation
- \_ The fastest programme creation with visual programming
- \_ Comfort with a comprehensive cycle selection



### ATC

**Easy tuning of the feed drives at the press of a button:** This means setup of three settings (surface, speed, precision) that are customisable within a work piece programme. **Your benefit:** Minimisation of processing times with maximisation of relevant quality (also in connection to the work piece weight).

Available for the Siemens and Heidenhain Control

**ATC** Application Tuning Cycle

### MDynamics

- \_ **Highest processing speed** with optimised speed direction
- \_ **Perfect surface quality** with an optimal speed profile, through an integrated "Advanced Lookahead" feature
- \_ **Exact contour accuracy** with an optimised compressor

Exclusive Siemens software package

**MDynamics**

### 3D quickSET®

**Easiest testing and correction of the axis precision in the work area:** That means Precision balance in the kinematics at the press of a button.

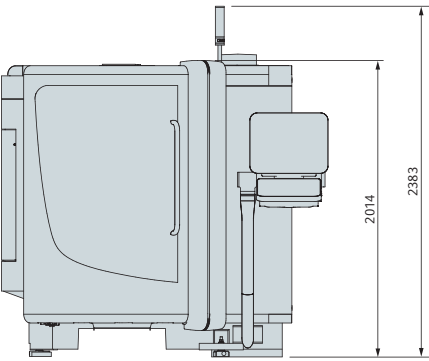
Available in connection with the Renishaw and BLUM measuring probe

**3D quickSET**

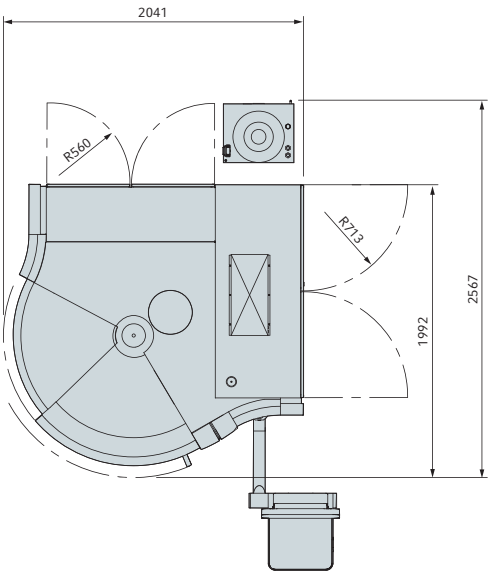
# Floor Plans

## HSC 20 linear

Front view

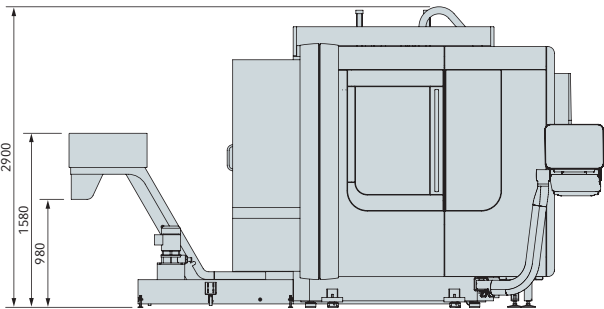


Top view

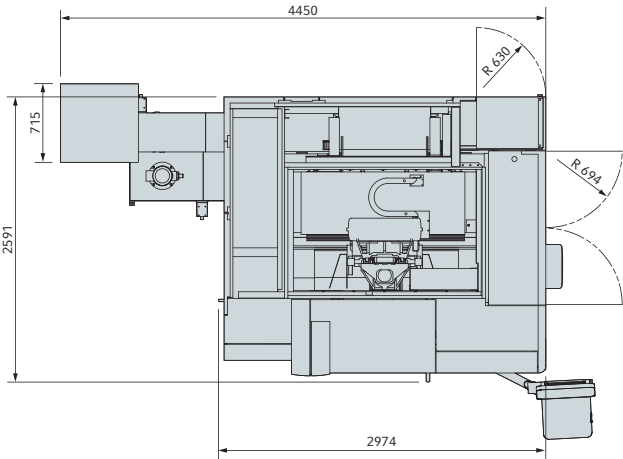


## HSC 55 linear

Side view

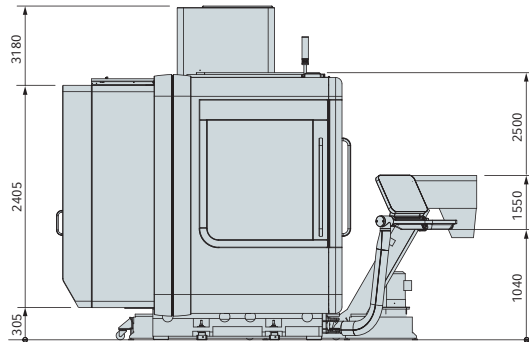


Top view

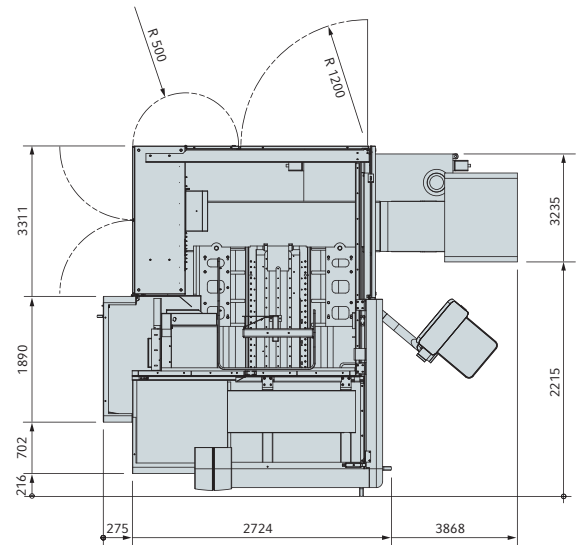


**HSC 75 linear**

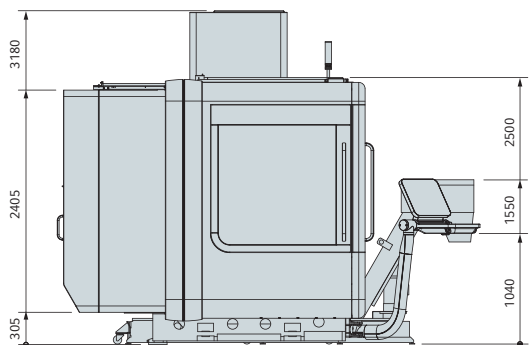
Side view



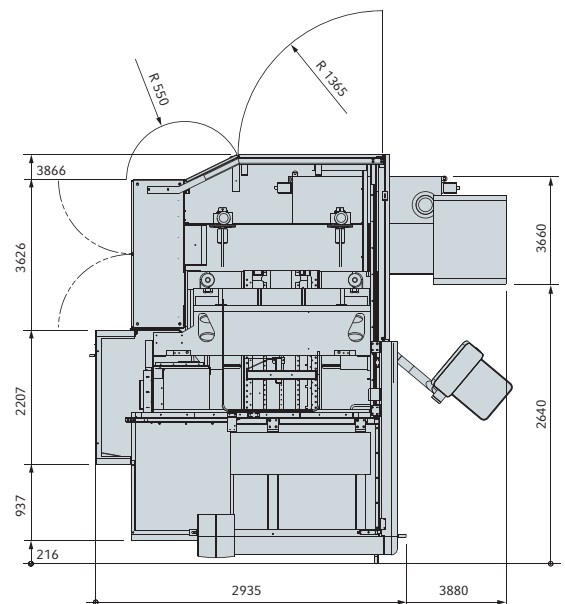
Top view

**HSC 105 linear**

Side view



Top view

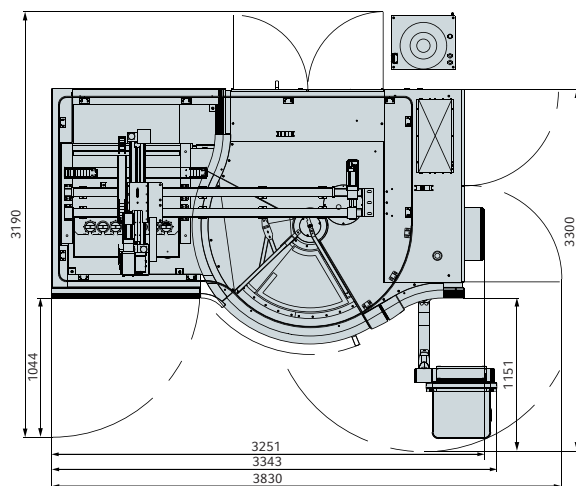
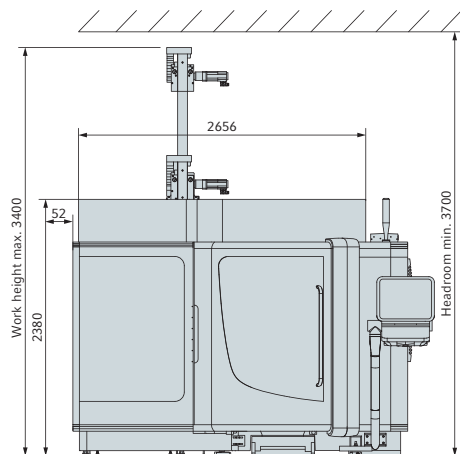




## Floor Plans

### Automation with PH 10 | 100

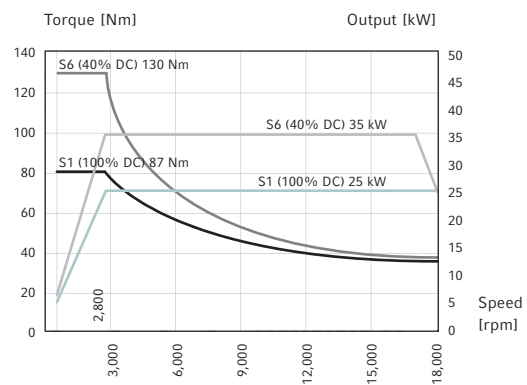
HSC 20 linear



## Performance Diagrams

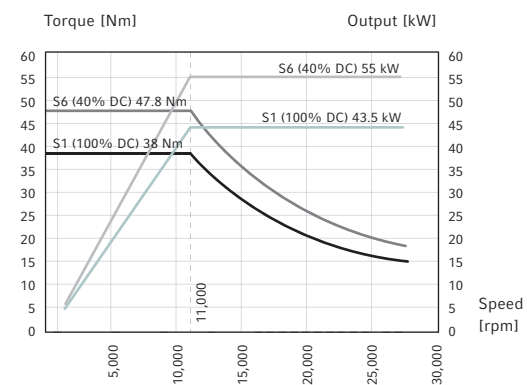
### 18,000 rpm

HSC 75/105 linear (3-axis version)



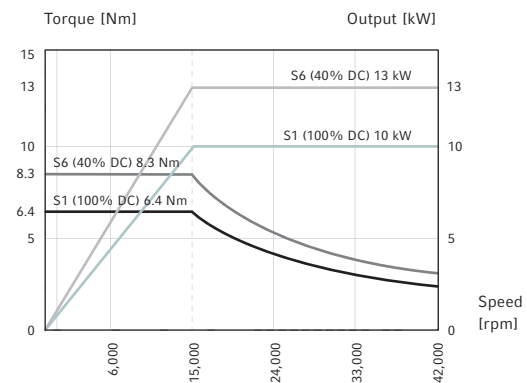
### 28,000 rpm

HSC 75/105 linear



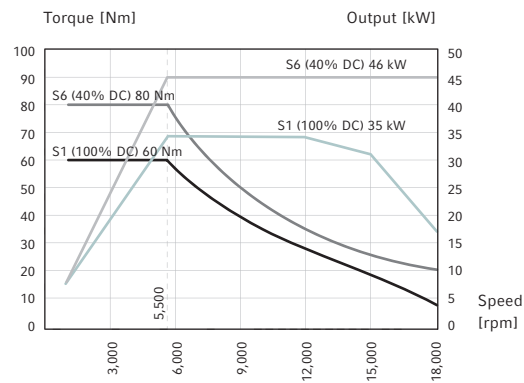
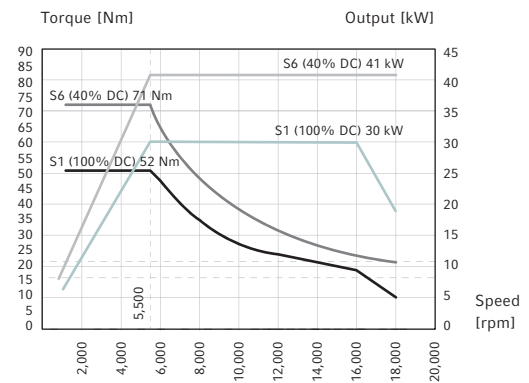
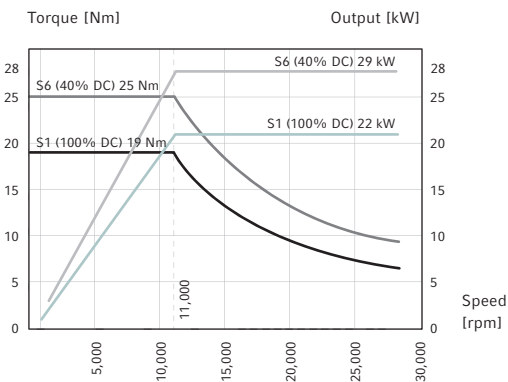
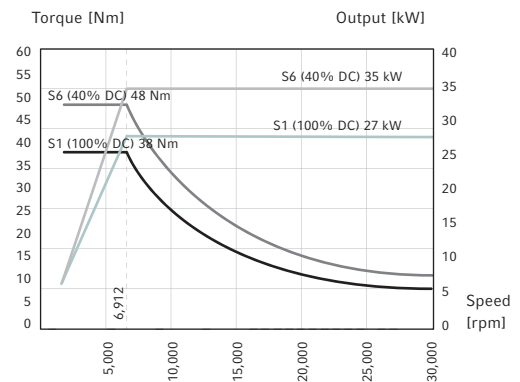
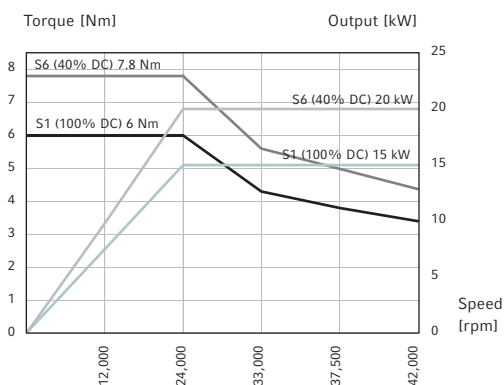
### 42,000 rpm

HSC 55 / 75 / 105 linear



DMG exclusively recommends



**18,000 rpm**HSC 75 / 105 *linear* (5-axis version)**18,000 rpm**HSC 55 *linear* (3 / 5-axis version)**28,000 rpm**HSC 55 *linear* (Standard spindle)**28,000 rpm**HSC 55 *linear* (Power spindle)**42,000 rpm**HSC 20 *linear*

# Technical Data

		HSC 20 linear	HSC 55 linear
<b>Work area</b>			
X-axis	mm	200	450
Y-axis	mm	200	580 (650)**
Z-axis	mm	280	460
Swivel axis (A / B)	Degrees	-10 / +130	+10 / -110
Rotary axis (C)	Degrees	360	360
<b>Main drive</b>			
Speed range up to	rpm	42,000	28,000
Drive output (40 / 100 % DC)	kW	20 / 15	29 / 22 (35 / 27)
Torque (40 / 100 % DC)	Nm	7.8 / 6	25 / 19 (48 / 38)
Tool holder	DIN 69893	HSK-E32	HSK-A63
Speed range (Optional)	rpm	42,000	18,000*
Output	kW	–	41 / 30
Torque (40 / 100 % DC)	Nm	–	71 / 52
Tool holder	DIN 69893	HSK-E40	HSK-A63
Speed range (Option)	rpm	60,000	42,000*
Drive power (40 / 100 % DC)	kW	–	13 / 10
Torque (40 / 100 % DC)	Nm	–	8 / 6
Tool holder	DIN 69893	HSK-E32	HSK-E50
<b>Feed</b>			
Feed range up to	mm/min	40,000	80,000
Rapid traverse X / Y / Z	m/min	40 / 40 / 40	80 / 80 / 80
<b>Work table</b>			
Clamping surface fixed table	mm	380 × 320	460 × 600
Max. work piece weight	kg	100	600
Clamping surface NC table	mm	ø 200	400 × 400
Speed of the rotary axes (C)	rpm	200	110
Max. work piece weight	kg	10	200
<b>Acceleration</b>			
Max. acceleration	g	>2 g	>2 g
<b>Tool</b>			
Tool magazine	Pockets	24 (60)*	16 (30 / 60 / 120)*
Max. tool length	mm	200	250
Max. tool diameter	mm	30	80
Chip-to-chip time	s	7	6
<b>Options packages</b>			
Integration ULTRASONIC***		o	o
Standardised 5-axis package***		o	o
Automation***		o	o

## Control

DMG ERGOline® Control with a 19" screen and 3D-software

Siemens 840D solutionline

Siemens 840D solutionline

Heidenhain iTNC 530

Heidenhain iTNC 530

Software options with Siemens: ATC, MDynamics, 3D quickSET®

Software options with Heidenhain: ATC, 3D quickSET®

\* Option, \*\* 5-axis version, \*\*\* see pages 14–17

		HSC 75 linear	HSC 105 linear
<b>Work area</b>			
X-axis	mm	750 (885)**	1,050 (1,110)**
Y-axis	mm	600	800
Z-axis	mm	560 (600)**	560 (600)**
Swivel axis (A / B)	Degrees	-10 / +110	-10 / +110
Rotary axis (C)	Degrees	360	360
<b>Main drive</b>			
Speed range up to	rpm	18,000	18,000
Drive output (40 / 100 % DC)	kW	35 / 25 (46 / 35)	35 / 25 (46 / 35)
Torque (40 / 100 % DC)	Nm	130 / 86 (80 / 60)	130 / 86 (80 / 60)
Tool holder	DIN 69893	HSK-A63	HSK-A63
Speed range (Optional)	rpm	28,000*	28,000*
Output	kW	55 / 43.5	55 / 43.5
Torque (40 / 100 % DC)	Nm	47.8 / 38	47.8 / 38
Tool holder	DIN 69893	HSK-A63	HSK-A63
Speed range (Option)	rpm	42,000*	42,000*
Drive power (40 / 100 % DC)	kW	13 / 10	13 / 10
Torque (40 / 100 % DC)	Nm	8 / 6	8 / 6
Tool holder	DIN 69893	HSK-E50	HSK-E50
<b>Feed</b>			
Feed range up to	mm/min	90,000	90,000
Rapid traverse X / Y / Z	m/min	90 / 90 / 90	90 / 90 / 90
<b>Work table</b>			
Clamping surface fixed table	mm	950 × 650	1,200 × 850
Max. work piece weight	kg	1,000	1,300
Clamping surface NC table	mm	ø 750	ø 950
Speed of the rotary axes (C)	rpm	100	100
Max. work piece weight	kg	800	800
<b>Acceleration</b>			
Max. acceleration	g	>2 g	>2 g
<b>Tool</b>			
Tool magazine	Pockets	30 (60 / 120 / 150 / 180)*	30 (60 / 120 / 150 / 180)*
Max. tool length	mm	300	300
Max. tool diameter	mm	80 / 140	80 / 140
Chip-to-chip time	s	6	6
<b>Options packages</b>			
Integration ULTRASONIC***		—	—
Standardised 5-axis package***		o	o
Automation***		o	o

**Control**

DMG ERGOline® Control with a 19" screen and 3D-software

Siemens 840D solutionline

Siemens 840D solutionline

Heidenhain iTNC 530

Heidenhain iTNC 530

Software options with Siemens: ATC, MDynamics, 3D quickSET®

Software options with Heidenhain: ATC, 3D quickSET®

\* Option, \*\* 5-axis version, \*\*\* see pages 14–17

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