

**DMG MORI**

MULTISPINDLE AUTOMATIC TURNING CENTRES

MULTISPRINT 36

# MULTISPRINT



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**Highlights**

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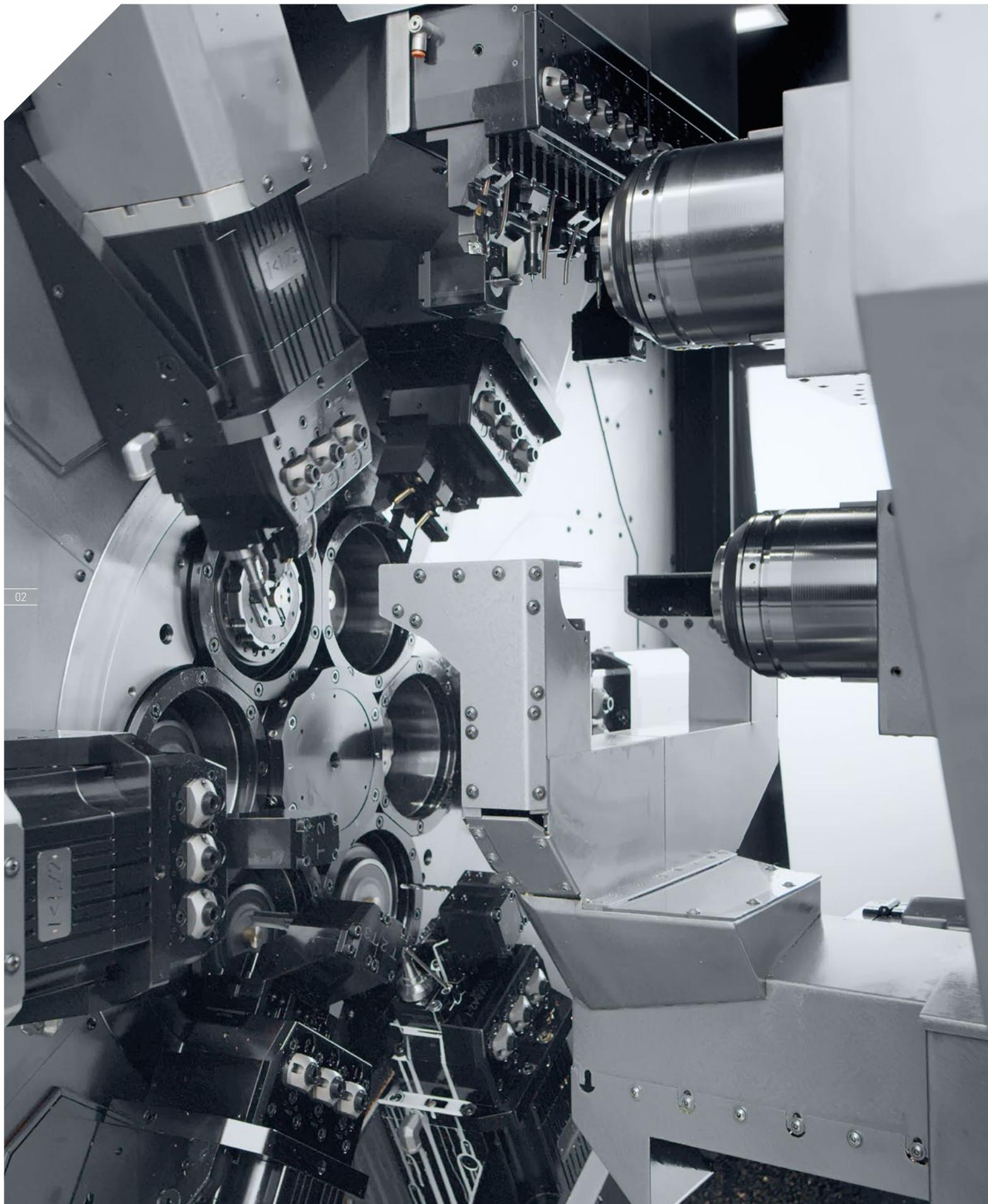
Machine and Technology

Applications and Parts

Control Technology

Technical Data

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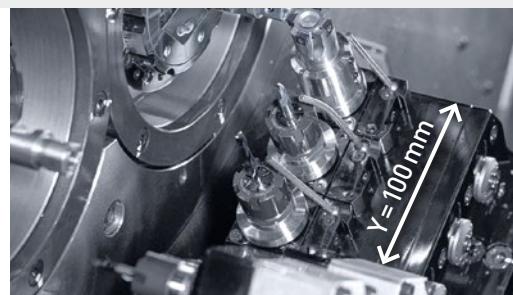


## MULTISPINDLE AUTOMATIC TURNING CENTRES

# SWISSTYPE-Machining up to 170 mm turning length

## Y-AXES ON ALL SPINDLE POSITIONS

- + 100 mm Y-axes for spindle 1–6 (standard)
- + 312mm Y-axes for the back side machining (option)



## SWISSTYPEkit (OPTION) FOR LONG AND SHORT TURNING UP TO 170 mm LENGTH

- + Short turning from 4 to  $\varnothing 36 \times 170$  mm
- + Long turning with SWISSTYPEkit with 170 mm stroke
- + Part length up to 600 mm



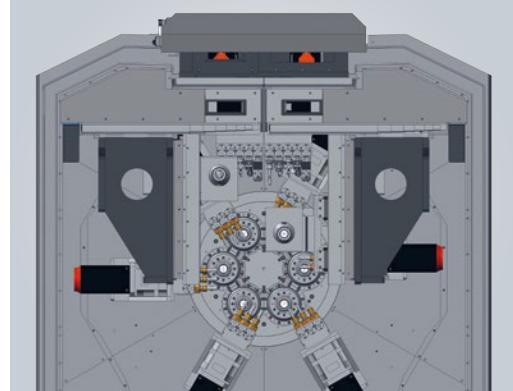
## CHUCK PART MACHINING WITH UP TO 2 ROBOT SYSTEMS

- + Machining of chuck parts up to  $\varnothing 50$  mm
- + <6 sec. loading-/unloading time
- + Up to 2 robot systems for simultaneously loading, unloading and part over-turning



## 25 % SHORTER CYCLE TIMES WITH UP TO 2 COUNTER SPINDLES

- + Variant A: counter spindle (option)  
for back side machining  
(X=277 mm, Y=312 mm, Z=410 mm)
- + Variant B: 2x counter spindle (option)  
for double back side machining  
(each X=277 mm, Y=312 mm, Z=410 mm)



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MULTISPRINT

# Revolution in automatic turning – Multi-spindle automatic lathes for SWISSTYPE machining

- + Use of driven tools at all spindle positions
- + Y-axis at all spindle positions as standard
- + SWISSTYPEkit for short and long part turning up to 170 mm in length
- + Chuck or bar machining: bar diameter from 4 to ø36 mm, chuck components up to ø50 mm
- + Double-rear and off-centre machining
- + State-of-the-art control technology: FANUC Series 30i

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## WHAT'S DIFFERENT FROM A TRADITIONAL MULTI-SPINDLE MACHINE

- + Larger working area in a smaller footprint (<22 m<sup>2</sup> incl. barloader, chip conveyor)
- + Highest flexibility with Y-axes on each spindle as standard
- + Easiest machine retooling with modular toolingsystem
- + Machining of chuck parts and long turning parts
- + SWISSTYPEkit for long parts production up to 170 mm length
- + Modularity for fitting every customer's desire

## **ENHANCED TECHNOLOGY FEATURES**

- + Double rear machining for up to 35 % reduced cycle time
- + Out-of-center and back-side machining

MULTISPRINT platform is based on the same technology of SPRINT SWISSTYPE production ramp-up on single spindle SPRINT machine (batch <50,000), then easy and smooth shift of mass production (batch >50,000) on new MULTISPRINT.

## SPRINT AND MULTISPRINT: ALWAYS THE RIGHT MACHINE FOR SWISSTYPE MACHINING

### EXAMPLE SPLINE SHAFT

Sector	Automotive
Dimensions	$\varnothing 21 \times 129$ mm
Material	Steel (45S20)
Machining time	SPRINT 32 8: 62.5 Sec. MULTISPRINT 36: 14.1 Sec.

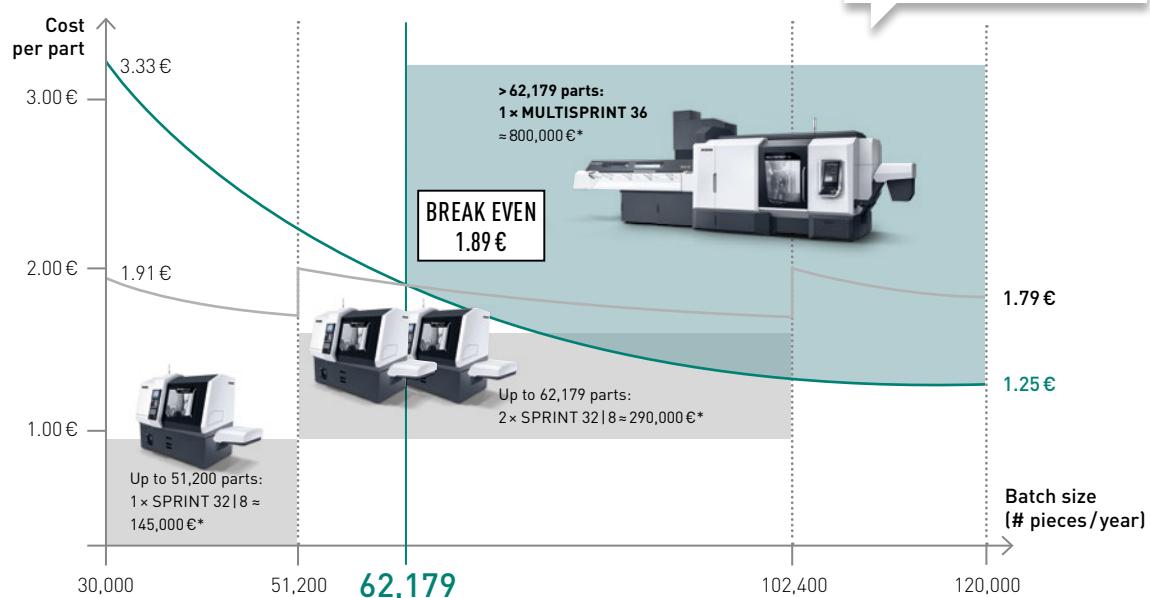


- + Production launch: 1× SPRINT 32|8
- + Medium batch size up to 50,000 pieces per annum: 2× SPRINT 32|8
- + Series production over 50,000 pieces per annum: change to 1× MULTISPRINT 36

### MULTISPRINT

The most cost-effective solution for large batch production/  
cost per piece reduction up to 50% or more

**MULTISPRINT 36:**  
Unique: Y-axes on all  
6 spindles as standard



\*Machine(s) including automation, tooling, etc.

Highlights

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MULTISPRINT

# Highest Flexibility for batch production of parts up to ø 50 mm on < 22 m<sup>2</sup>

## HIGHLIGHTS

### Full manufacturing center

- + Y-axis in all positions
- + SWISSTYPEkit for long and short turning
- + Double counter spindle
- + Up to 28 tools – 24 driven tools possible

### More Flexibility, less complexity

- + One concept for both, bar and chuck machining:
  - Bar machining from ø 4 to 36 × 170 mm
  - Bar machining with SWISSTYPEkit with 170 mm stroke
  - Chuck parts up to ø 50 mm
- + Up to 7,500 rpm spindle speed

**21.9 m<sup>2</sup>**  
WITH BAR  
LOADER AND  
HP UNIT

### New Generation CNC

- + New Generation FANUC Series 30i

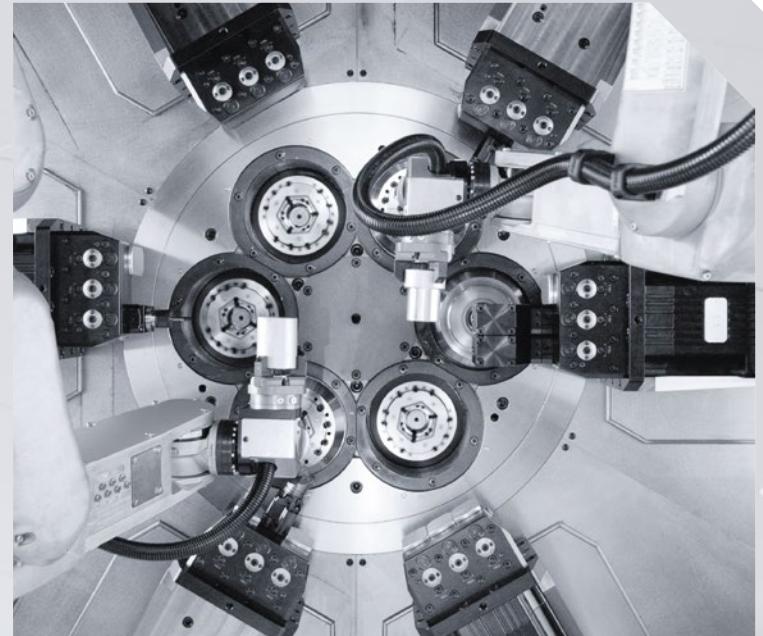
### Easy machine changeover

- + -35% retooling time
- + Quick change collets
- + Presettable toolholder
- + Fast bar change pusher guided channels



## WORKPIECE HANDLING 1 OR 2 ROBOTS

- + Fast loading/unloading operations – time < 6 seconds
- + Useful for part unloading for bar machining
- + Necessary for complete machining of chuck parts on multispindle manufacturing center
- + Easy workpiece handling
- + Single robot application is possible with any configuration of counter spindles
- + Two robot configuration mainly used without counter spindles, but possible also with
- + Second robot for simultaneous loading/unloading or part over-turning
- + Fit on every process cycle: simple cycle, double cycle, double pick-up



MULTISPINDLE MANUFACTURING CENTER

# Outstanding versatility and modularity

- + **Driven tools and Y-axis machining** in all positions
- + **Chuck or SWISSTYPE machining** in one concept
- + **Out of center and back side machining** with double counter spindle (-25 % cycle time)
- + **Parallel processes: cycle time reduction up to 75 %** compared with single-spindle machine

## Handling systems

- + **Robot handling systems** for part unloading (bar machining) or chuck specification
- + Up to two robots for **simultaneous loading/unloading** and part over-turning

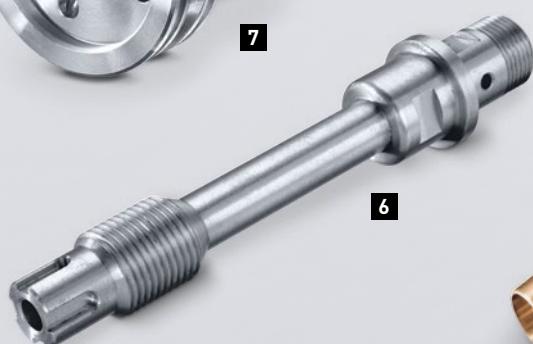


2

3



7



6



5



4

1: Engineering: Joint ( $\varnothing 16 \times L 45$ )

2: Medical: Dental Implant ( $\varnothing 5 \times L 13$ )

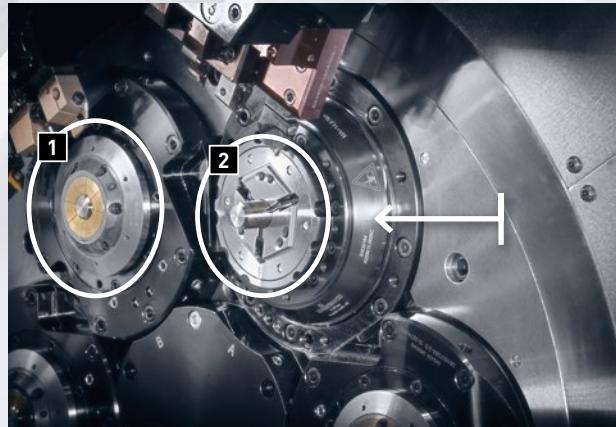
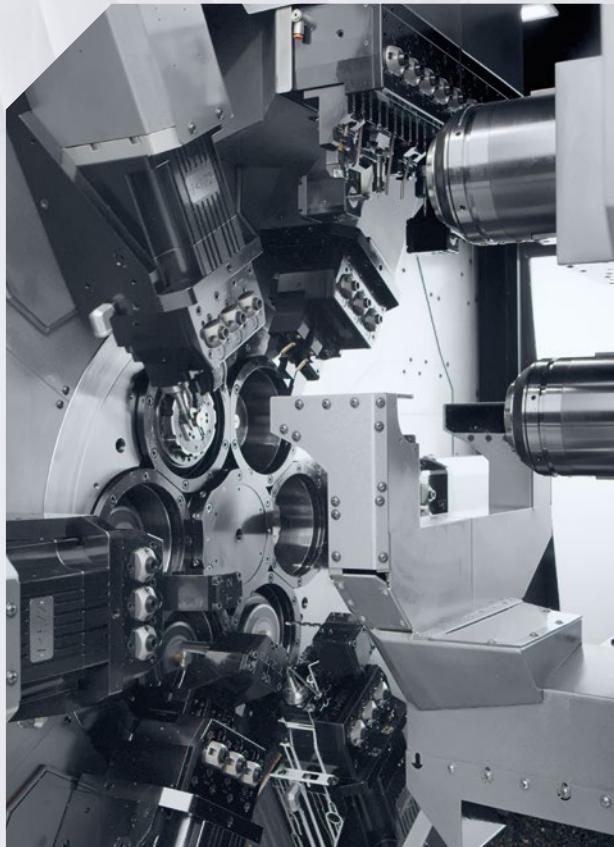
3: Automotive: Steering Shaft ( $\varnothing 21 \times L 129$ )

4: Electronics: SIM Housing ( $4 \times 20 \times 14$ )

5: Fluid: Nipple ( $\varnothing 22 \times L 48$ )

6: Hydraulics: Shaft ( $\varnothing 16 \times L 140$ )

7: Automotive: Bush ( $\varnothing 30 \times L 85$ )



1: with SWISSTYPEkit 2: without SWISSTYPEkit

### SWISSTYPEkit\*

**For short and long part turning on one machine**

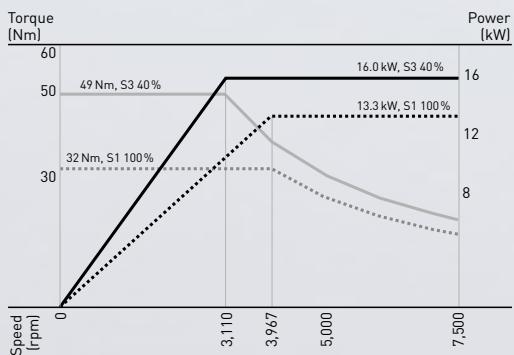
- + Possibility to machine workpiece length longer than 4 times the diameter
- + Fast changeover between long turning configuration and short turning configuration
- + The highest flexibility in production management

\* Optional

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## Main spindle

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Highlights

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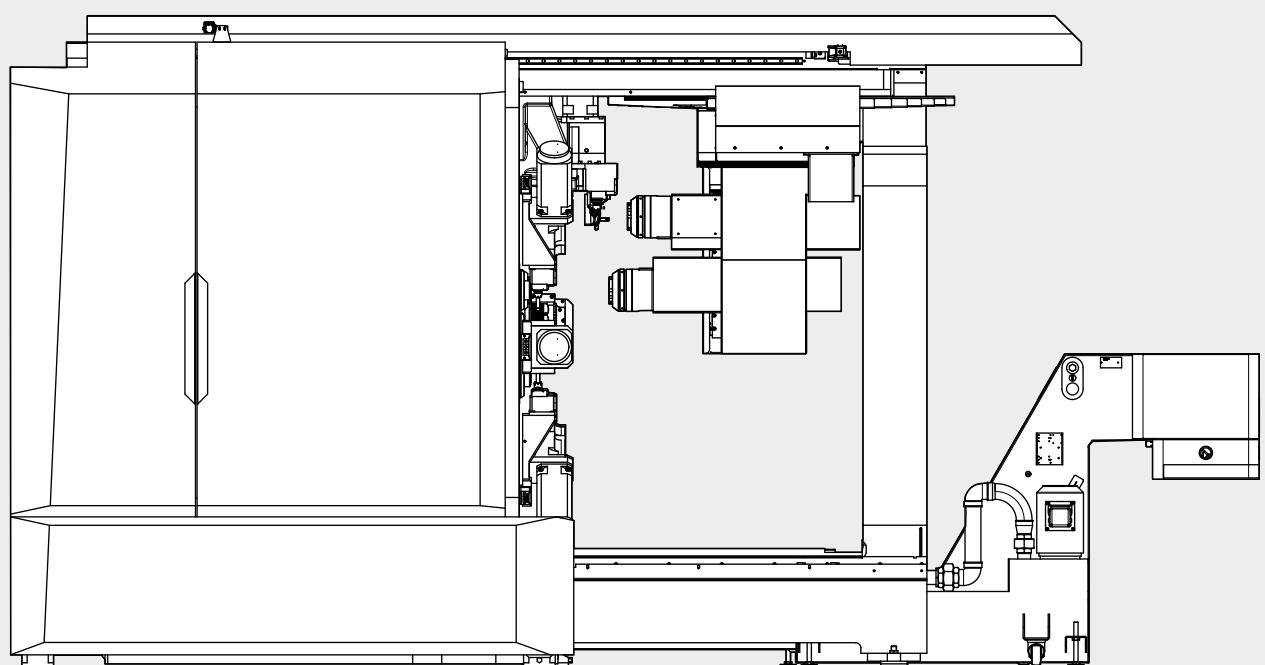
Technical Data

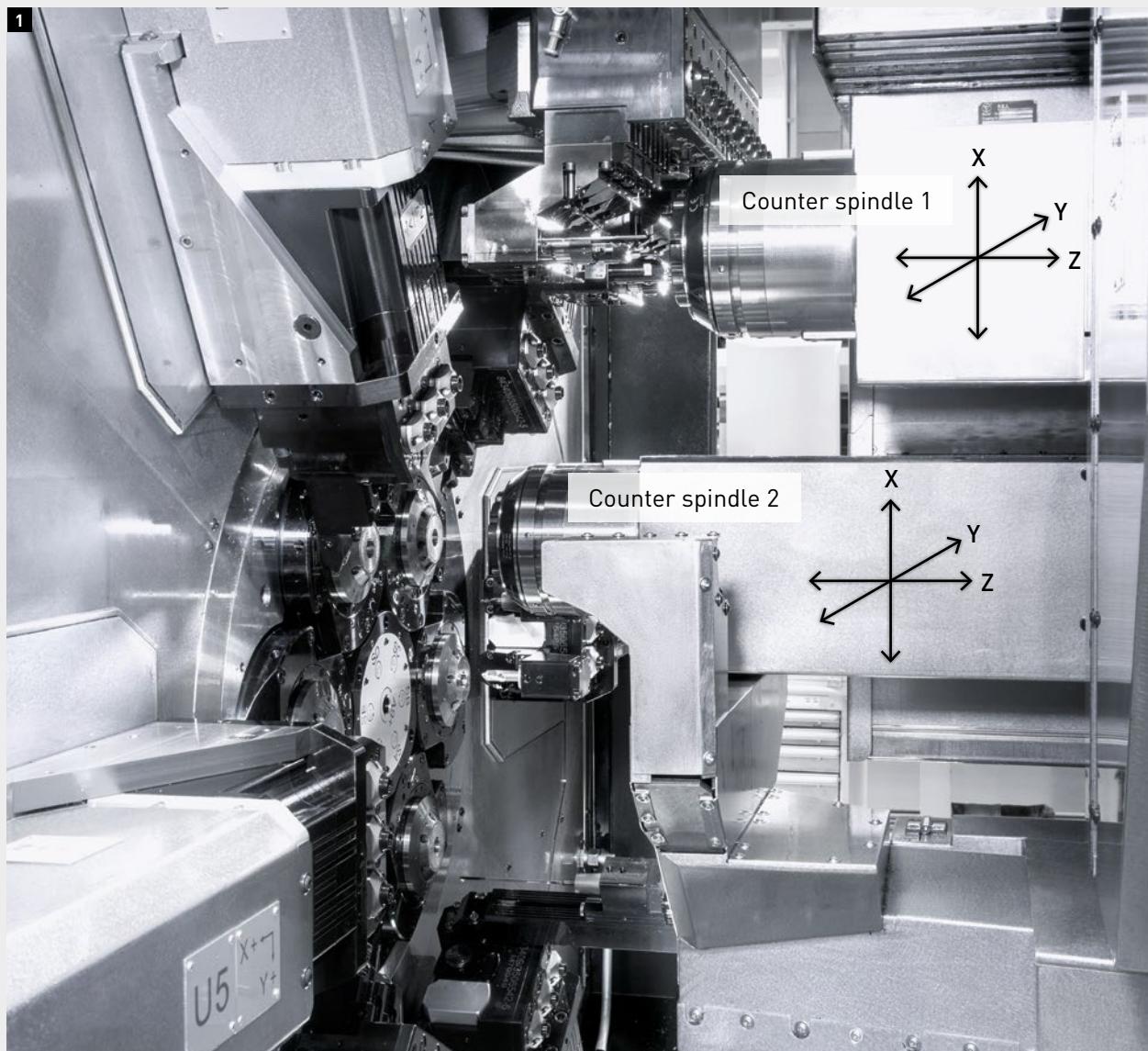
COUNTER-SPINDLE SOLUTIONS

## Counter spindle or double counter spindle for back side machining

### OPTIONAL (DOUBLE) COUNTER SPINDLES

- + Built-in motor with high out-put torque same as main spindles
- + NC X-axis, Y-axis and Z-axis movement
- + Part ejector and collet cleaning
- + Angular synchronism between main and counter-spindle
- + Back-working tool-holders for counter-spindle operations with 5 junctions for fixed tools including 3 driven tools (option)
- + Up to 7 tools in contemporary machining  
(up to 8 tools for the double counter spindle version)



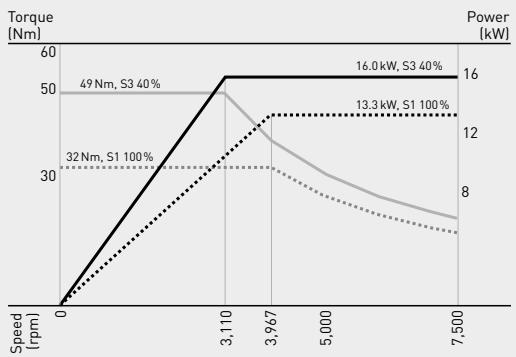


**1:** Double counter spindles

**2:** Double-toolstation for back side machining

## Counter spindle

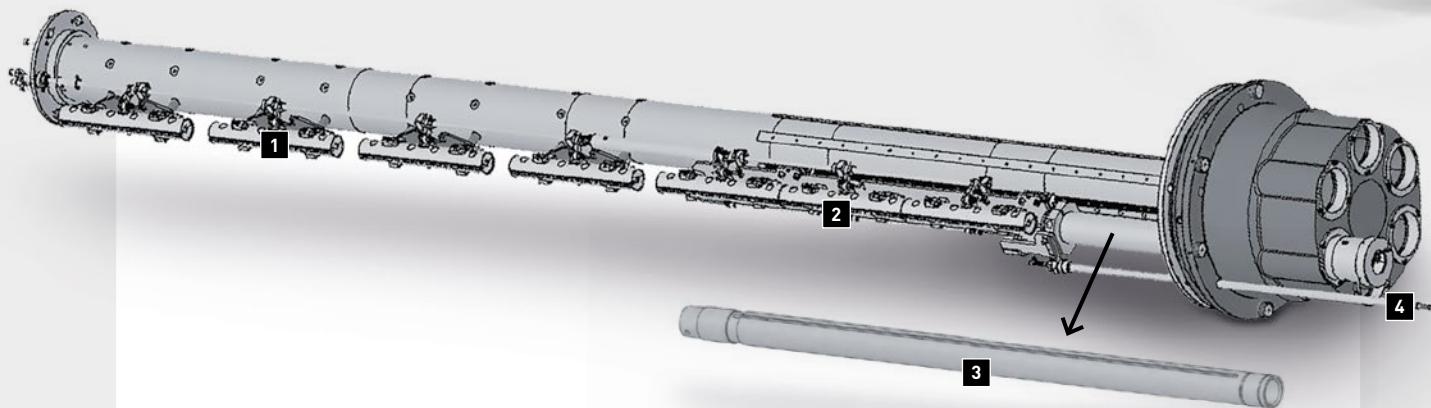
MULTISPINT 36



DMG MORI LOADER

# New barloader for multisindle manufacturing center

- + Easy DMG MORI concept (patent pending) for independent feeding of each spindle
- + Sliding guide channel on linear recirculating balls guarantees perfect bar guidance and vibration control
- + Integrated recovery of cutting fluids from the working area
- + Automatic collection of remnant on the front, significantly faster than other systems
- + Change of guide ways <2 hours
- + Perfect Solution for the MULTISPRINT-Series



## TECHNICAL DATA

		Loader		Bundle	
		NEXT 42/33	NEXT 42/43	CADDY 33	CADDY 43
Max. bar lenght	mm	3,300	4,300	3,200*	4,200*
Min. bar lenght	mm	2,450	2,850	2,450	2,850
Stock capacity	kg	450	450	1,000	1,300
Max. bar bundle ø	mm	-	-	250	250
Max. bar ø	mm	36	36	36	36
Min. bar ø	mm	4	4	12	15

\*safe dimension to ensure bundle handling

**1 4 Fixed elements**  
back side, 6 couples each

**2 3 Mobile elements**  
front side, 6 couples each

**3 Tube for guiding**  
6 couples

**4 Synchronization Rod**



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**1** Bar loader



**2** Pneumatic and lubrication



**3** Hydraulic tank



**4** Part handling

**5** Operation door

**6** Chip conveyor

**7** Electrical cabinet

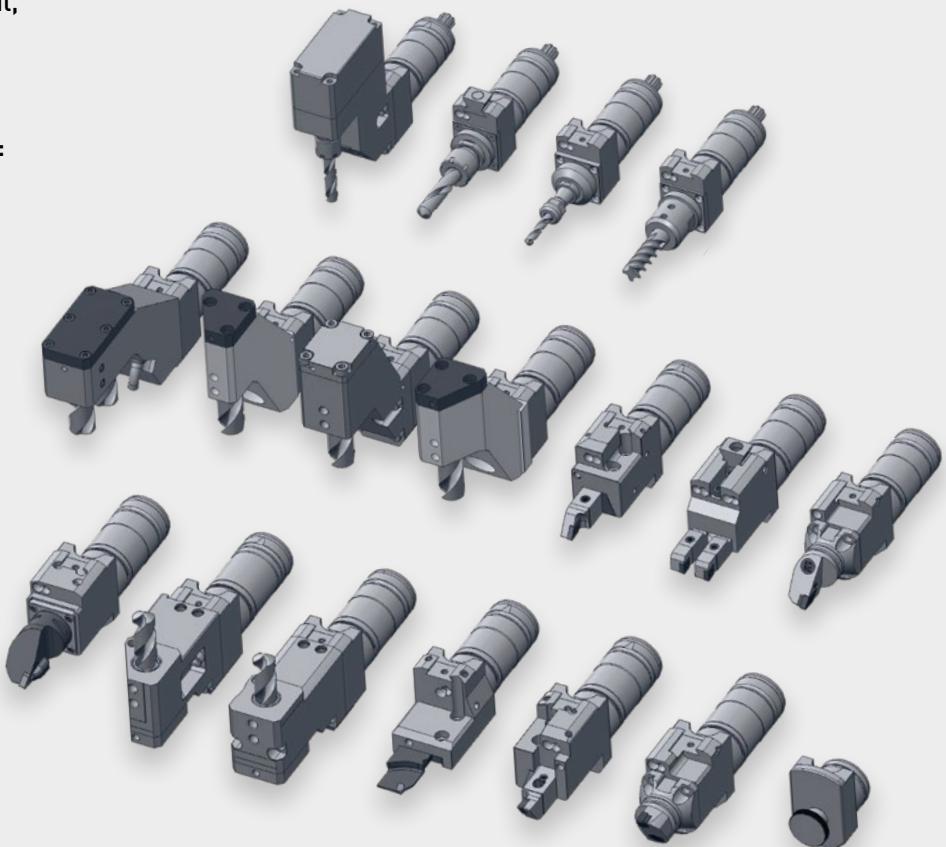
**8** Filtration system

DRIVEN TOOLS

# The right tool for each situation

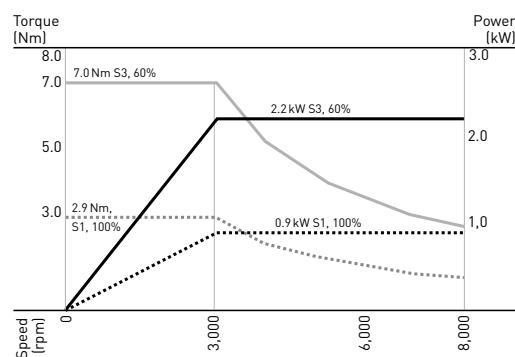
## FULLY MODULAR RADIAL SLIDES

- + Pre-settable, modular, powerful, with high rigidity
- + Manual tool unlocking system
- + Easy interchangeable interface:
  - from fixed to driven tools and viceversa
  - from axial to radial tools and viceversa
- + Up to 28 tools, 24 of which can be driven
- + Single tool holder exchange time < 1 min.

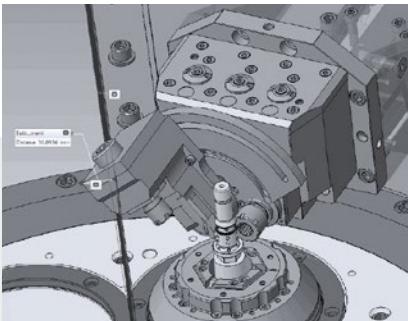
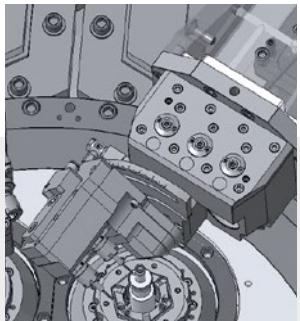


## DRIVEN TOOLS FOR EACH DEMAND

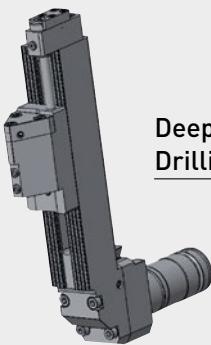
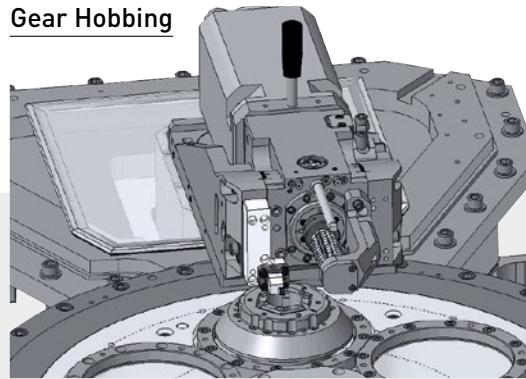
### 1 Standard



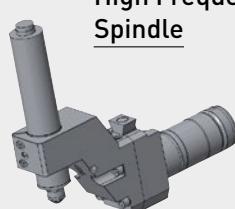
## Angular Heads



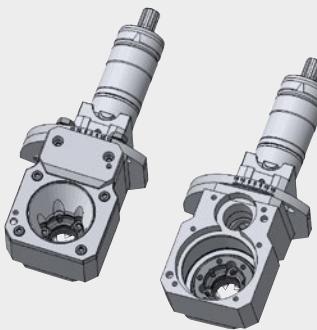
## Gear Hobbing



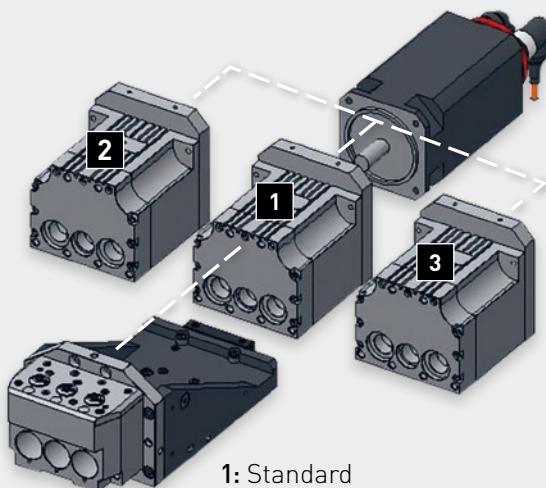
**Deep Hole  
Drilling Holder**



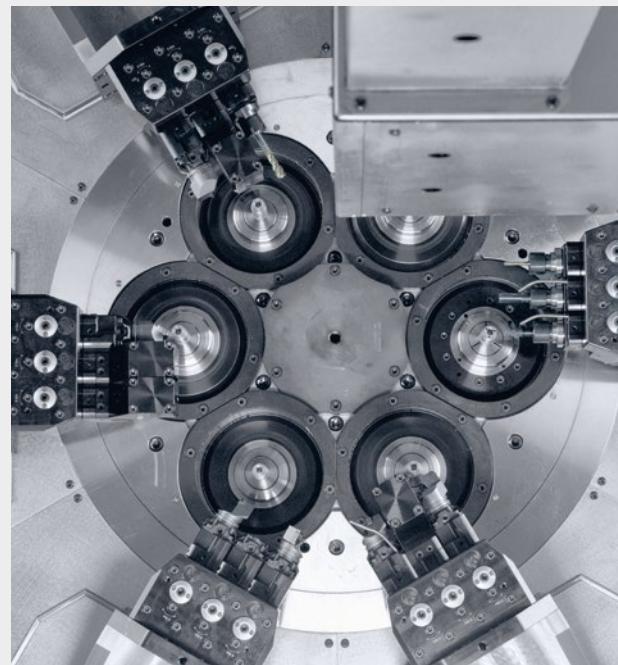
**High Frequency  
Spindle**



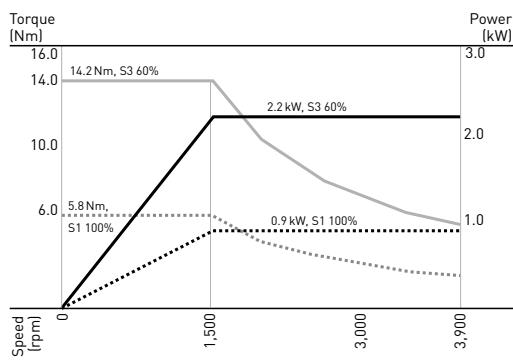
**Thread  
whirling**



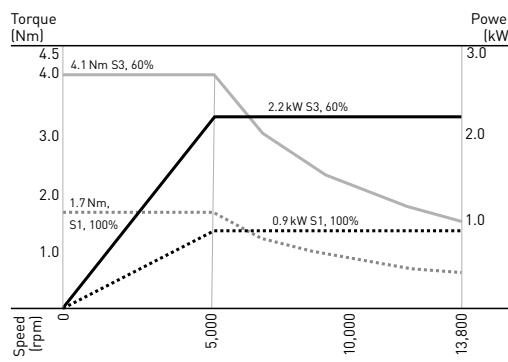
- 1: Standard  
2: High torque  
3: High speed



**2** High torque



**3** High speed



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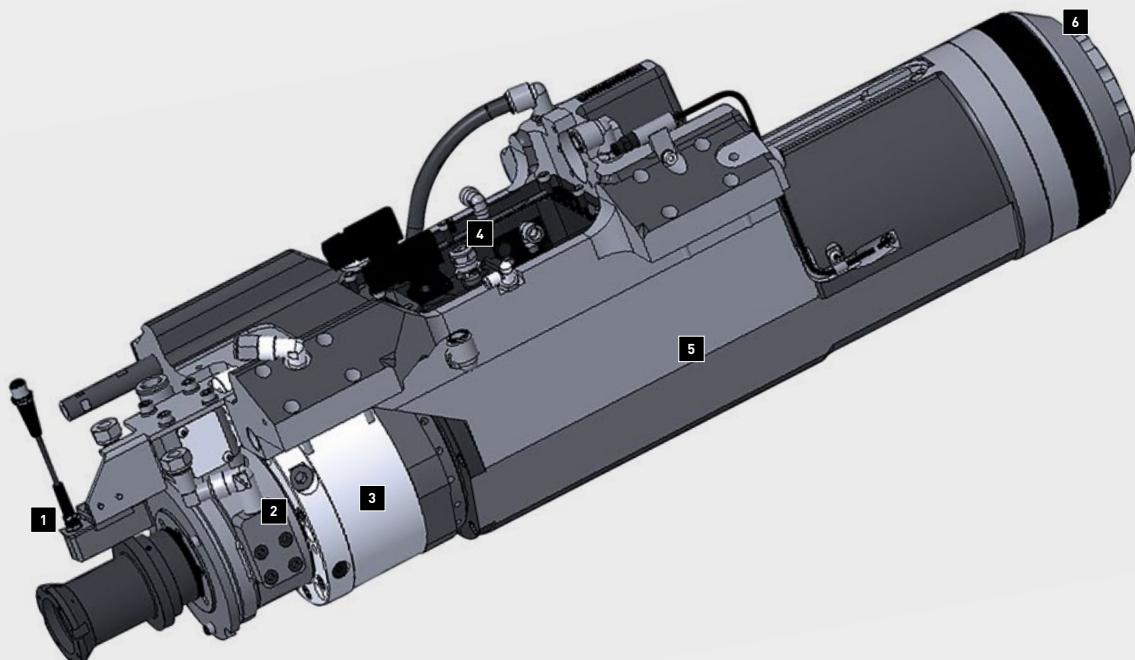
MAIN SPINDLE AND CLAMPING DEVICES

# Modularity is our key word

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HYDRAULIC CYLINDER – HIGHLIGHTS

- + Standard solution suitable **for all clamping systems**
- + **Positioning sensor** for reliable detecting of the clamping unit status
- + **Direct drive with** torque motor, water cooled
- + Rotation speed max. **7,500 rpm**
- + **Bearings air-oil lubrication**
- + **Integrated slide for Z-axes** in the spindle housing based on linear guideways



- 1** Analog position sensor  
**2** Rotary collector  
**3** Hydraulic cylinder (30 kN)

- 4** Incremental angular encoder  
**5** Synchronous built-in motor (water cooled)  
**6** Clamping options

## CLAMPING OPTIONS

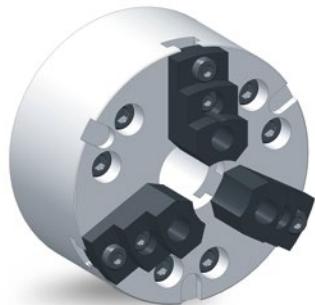
### Short turning



### Long turning with SWISSTYPEkit



### Chuck turning parts



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Highlights

Machine and Technology

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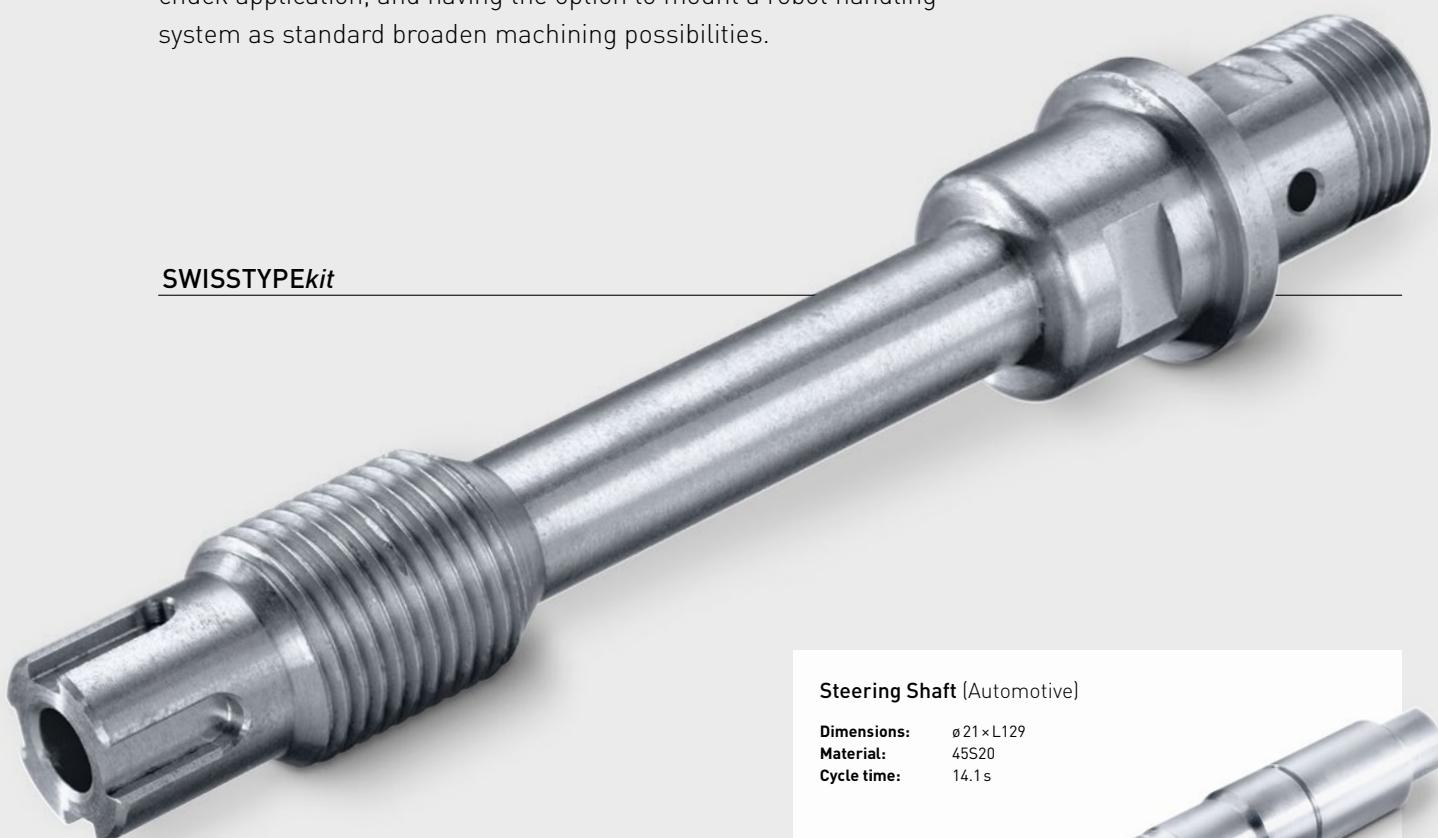
MULTISPRINT

## Demo part samples

Thanks to MULTISPRINT extreme flexibility it's possible to produce a wide range of workpieces for any field of application.

Anything is possible using collet application, SWISSTYPEkit or 3-jaw chuck application, and having the option to mount a robot handling system as standard broaden machining possibilities.

SWISSTYPEkit



**Shaft (Hydraulics)**

**Dimensions:** Ø16 x L130  
**Material:** C45  
**Cycle time:** 21.0 s

**Steering Shaft (Automotive)**

**Dimensions:** Ø21 x L129  
**Material:** 45S20  
**Cycle time:** 14.1 s



**Spool (Hydraulics)**

**Dimensions:** Ø16 x L130  
**Material:** C45  
**Cycle time:** 21.0 s



**Bone screw (Medical)**

**Dimensions:** Ø12 x L77  
**Material:** Titanium alloy  
**Cycle time:** 35.0 s



## Short turning parts

**Bone screw** (Medical)

**Dimensions:**  $8\text{h}9 \times 40\text{ mm}$   
**Material:** AISI 316  
**Cycle time:** 85 s



**Valve body** (Pneumatics)

**Dimensions:**  $12 \times 28 \times 60$   
**Material:** Aluminum alloy  
**Cycle time:** 22.5 s



**Bush** (Automotive)

**Dimensions:**  $\varnothing 30 \times L85$   
**Material:** 44Mn28  
**Cycle time:** 25.1 s



**Distributor** (Energy)

**Dimensions:**  $\varnothing 30 \times L85$   
**Material:** AISI 316  
**Cycle time:** 38.0 s



## Chuck Parts

**Valve body** (Engineering)

**Dimensions:**  $120 \times 50 \times 30$   
**Material:** Casting AISI 316L  
**Cycle time:** 75.0 s



**Cover** (Pneumatics)

**Dimensions:**  $\varnothing 50 \times L50$   
**Material:** Forged Al. alloy  
**Cycle time:** 18.0 s



**Shaft** (Automotive)

**Dimensions:**  $\varnothing 35 \times L88$   
**Material:** Forged 100Cr6  
**Cycle time:** 24.0 s



**Connector** (Engineering)

**Dimensions:**  $\varnothing 43 \times L51$   
**Material:** AISI 303  
**Cycle time:** 39.0 s



MULTISPRINT

# The new revolutionary DMG MORI SLIMline touch-control with the CNC System FANUC iHMI

The new DMG MORI 19" SLIMline touch-control with FANUC iSeries with iHMI.

The practical and ergonomically optimized 19" touch display, with its maximized resolution and 45° swiveling range, offers decisive user benefits and represents the next advanced step for a modern user interface.

## HIGHEST FUNCTIONALITY

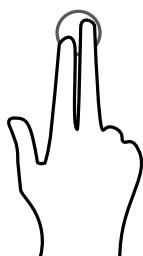
- + **IMPROVED OVERVIEW 19" SCREEN**  
19" Capacitive display with touch function
- + **STATUS CONTROL**  
Status Icon Application  
(DMG MORI Custom Application)
- + **ADVANCED INTERACTION**  
Standard FANUC CNC screen section (iHMI design)
- + **FLEXIBLE SOFTWARE KEYBOARD**  
ASCII touch keyboard – Switchable layouts
- + **DMG MORI SMARTkey**  
Personalized authorization and additional 8GB USB memory
- + **PROGRAM SELECTION**  
Expansion on local drive/USB/Network
- + **USER INTERFACE iHMI:**  
new user surface with better connectivity possibility
- + **EXECUTION FROM EXTERNAL STORAGE**  
Display and storage of additional file formats as HTML/PDF/BMP/JPEG/DXF and also the NC

## INTUITIVE USE FOR QUICK AND EASY OPERATION



### TAP WITH ONE FINGER

Window/object selection



### TAP WITH TWO FINGERS

Context menu, f.e. copy/paste



### TAP AND HOLD

Window/subject opening



- + 19-inches touch display
- + 45° swivel range
- + Expanded memory capacity\*

## 19" DMG MORI SLIMline Touch and FANUC iSeries with iHMI

- + Conversational automatic programming function with process menu
- + File display and note function for accessing operating instructions, drawings and texts
- + User – friendly operator guidance screen with clear machine status display

### DMG MORI SLIMline touch control with FANUC

Reliable, secure,  
user-friendly for high  
performance machining

\*FANUC iSeries ~ 2 MB

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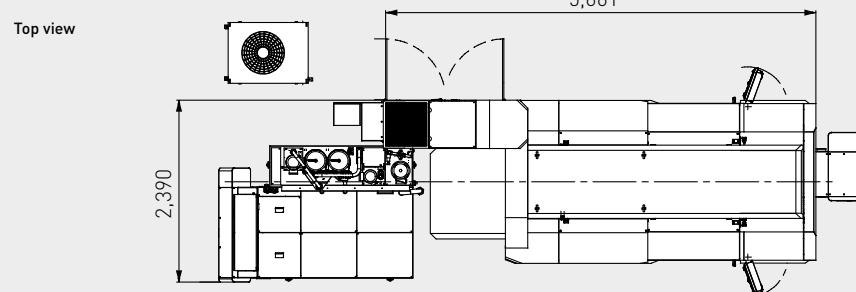
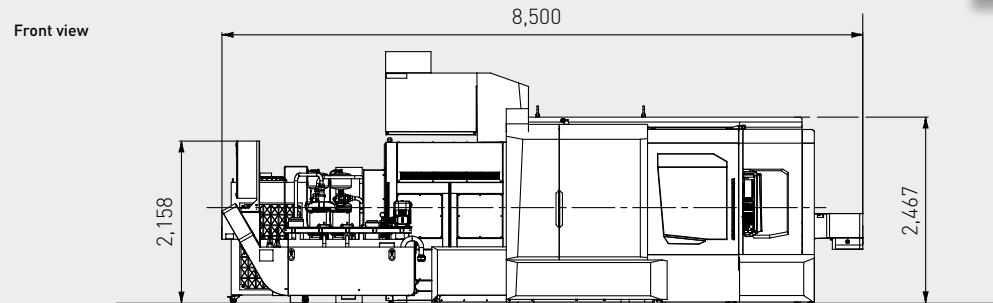
## MULTISPRINT

# Machine Layouts

**20.3 m<sup>2</sup>**

without bar loader; incl. filtration and coolant

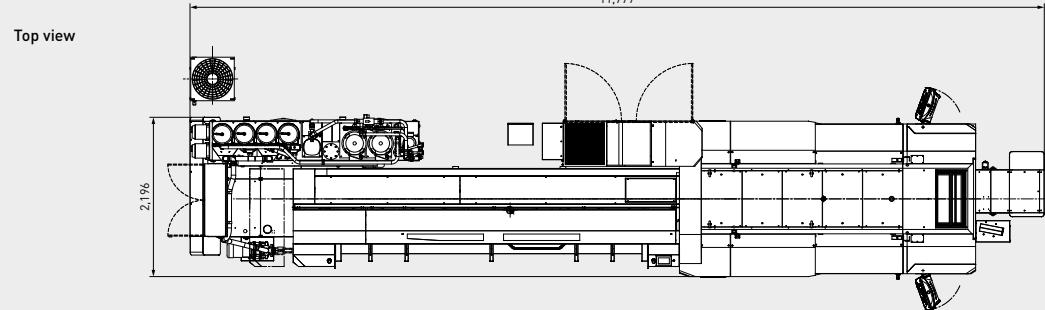
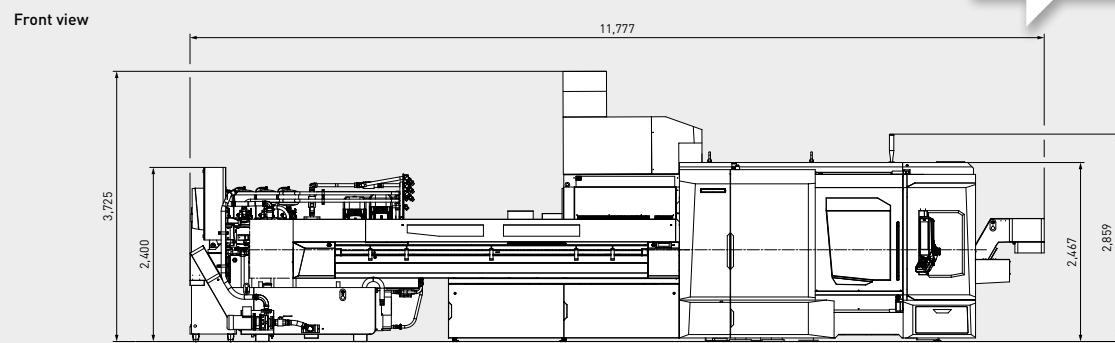
### MULTISPRINT 36 without bar loader\*



**21.9 m<sup>2</sup>**

incl. bar loader, filtration and coolant unit

### MULTISPRINT 36 with bar loader\*



\*Foot print dimensions might change based on peripherals selection.

**MULTISPRINT**

# Technical Data

**MULTISPRINT 36**

<b>Main spindles</b>		
Number of main spindles	#	6
Z1 – Z6 axes travel for each spindle (with SWISSTYPEkit)	mm	170 (170)
ø max bar passage	mm	40
Rotation	rpm	7,500
Power (100 % DC)	kW	13.3
Torque (100 % DC)	Nm	32
Drum indexing time	sec.	0.65
<b>Counter spindle</b>		
Max number of counter spindles (optional)	#	1 – 2
Through hole	mm	40
Rotation	rpm	7,500
Power (100 % DC)	kW	13.3
Torque (100 % DC)	Nm	32
Z7 – Z8 travel	mm	410
X7 – X8 / Y7 – Y8 travel	mm	277 (312)
X7 – X8 / Y7 – Y8 / Z7 – Z8 rapid traverse speed	m/min	40
<b>Tool holder on cross slides</b>		
Max. number of tools	#	3
Rotation	rpm	3,900 / 8,000 / 13,800
Power (100 % DC)	kW	0.9
Torque (100 % DC)	Nm	5.8 / 2.9 / 1.7
X1 – X6 / Y1 – Y6 axes travel	mm	50 / 100
X1 – X6 / Y1 – Y6 axes rapid traverse speed	m/min	20
<b>Back working operation slide</b>		
Max. number of tools (optional)	#	5 (3/2)
Rotation (U7 – U8)	rpm	3,900 / 8,000 / 13,800
Power (100 % DC)	kW	0.9
Torque (100 % DC)	Nm	5.8 / 2.9 / 1.7
<b>Machine</b>		
Max. number of axes		41
Footprint	m <sup>2</sup>	21.9 *
Machine weight	kg	12,000 **
Control display		15" color (#2)
Control type		FANUC 30i

\*with 3 meters bar loader and high-pressure unit    \*\*w/o bar loader and high-pressure unit

# IHR ONLINE SERVICE MANAGER



**my DMG MORI**  
Das Kundenportal  
zur Serviceoptimierung

## MEHR SERVICE

Schnelle Hilfe und Live-Status  
Ihrer Service-Anfragen

## MEHR WISSEN

Alle relevanten Dokumente  
digital abrufbar

## MEHR VERFÜGBARKEIT

Der direkte Draht zum Service-Experten  
mit garantierter priorisierter Bearbeitung,  
Registrierung in <3 Minuten

Jeder Kunde profitiert –  
und das kostenlos!

Alle Länder in denen myDMG MORI verfügbar ist finden Sie unter:  
[myDMGMORI.com](http://myDMGMORI.com)



## Customer First – Unsere Service-Versprechen!

Top-Qualität zu fairen Preisen. **Versprochen!**



**Best-Preis-Garantie für Original Ersatzteile.** Sollten Sie ein von uns angebotenes oder geliefertes Ersatzteil woanders mind. 20 % günstiger erhalten, erstatten wir Ihnen die Preisdifferenz zu 100%.\*



**Spindel-Service zu Best-Preisen.**  
Maximale Hersteller-Kompetenz zu neuen und attraktiven Preisen –  
DMG MORI Spindel-Service!

\*Alle Informationen und Preis-Vorteile für Customer First erhalten Sie unter: [customer-first.dmgmori.com](http://customer-first.dmgmori.com)

**Exportkontrolle:** Um die illegale Umleitung von Maschinen an Personen oder Nationen zu verhindern, die die internationale Sicherheit bedrohen, kann jede DMG MORI-Maschine ab dem 01.01.2023 mit einer RMS-Funktion (Relocation Machine Security) ausgestattet werden. RMS deaktiviert die Maschine automatisch, wenn die Maschine bewegt oder demontiert wird. Eine solche Deaktivierung findet während des regulären Betriebs oder der Wartung nicht statt.

Wenn die Maschine auf diese Weise deaktiviert wurde, kann sie nur von DMG MORI oder einem autorisierten Vertreter reaktiviert werden. Die Reaktivierung kann über den DMG MORI Service in Auftrag gegeben werden. Wird das Gerät aufgrund einer umfangreichen Reparaturmaßnahme deaktiviert, ist dieser Service kostenlos.

DMG MORI kann die Reaktivierung der Maschine verweigern, wenn festgestellt wird, dass es sich dabei um einen unerlaubten Export von Technologie handelt oder anderweitig gegen geltende Exportbeschränkungen verstößen würde. DMG MORI ist nicht verpflichtet, eine solche Maschine zu reaktivieren und übernimmt keine Haftung in diesem Zusammenhang.