

CNC AUTOMATIC TURNING

## SPRINT 20 SPRINT 32

SPRINT 20|5  
SPRINT 20|8  
SPRINT 32|5  
SPRINT 32|8



SPRINT 2015/SPRINT 2018 | SPRINT 3215/SPRINT 3218

# Highly productive automatic turning with minimum space requirements.

- + **Highest stability and consistent precision**—highly dynamic drive in all axis for short machining time and minimal idle time
- + **Up to 8 axes and 10 driven tools** for machining complex workpieces
- + Chip to chip time of under 0.2 second
- + STEALTH design for **optimised production** environment

## DISC | ENGINEERING

Material: CK45  
Machining time: 78 sec.  
ø19 × 42 mm



## SHAFT | AUTOMOTIVE

Material: AISI 304  
Machining time: 38 sec.  
ø6 × 65 mm



## BODY | ENERGY

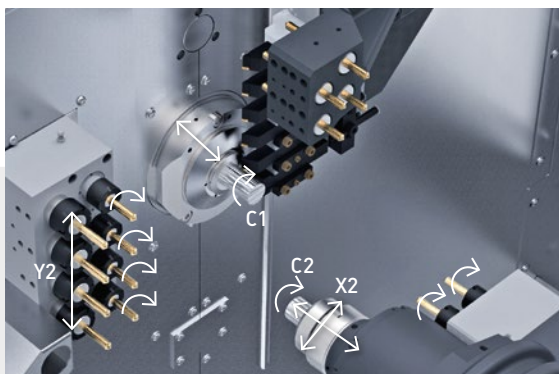
Material: Stainless Steel AISI 316  
Machining time: 330 sec.  
ø30 × 80 mm



## SPOOL | HYDRAULICS

Material: Steel C45  
Machining time: 260 sec.  
ø30 × 160 mm

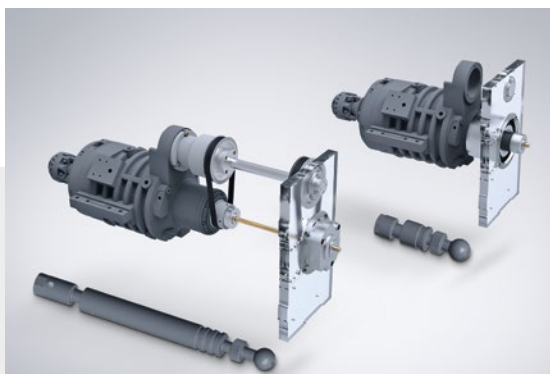




## UP TO 10 DRIVEN TOOLS FOR THE MAIN AND COUNTER SPINDLES

- + 4+2\* driven tools for use with the main spindle
- + 4 optional driven tools for use with counter spindle

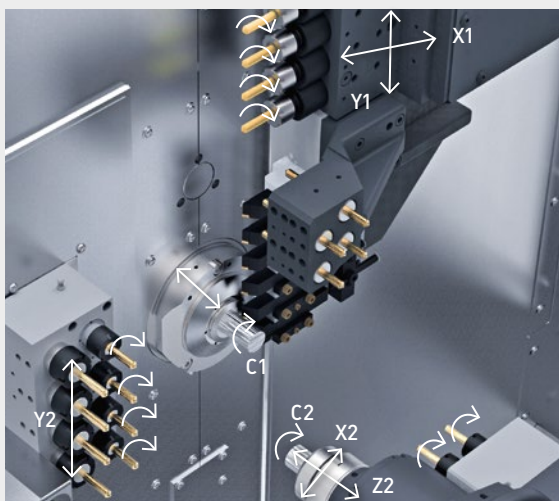
\* Optional



## SWISSTYPEkit\* FOR SHORT AND LONG PART TURNING ON ONE MACHINE

- + SPRINT 20|5 and SPRINT 20|8 with extended spindle travel from 60 to 180 mm
- + SPRINT 32|5 and SPRINT 32|8 with extended spindle travel from 100 to 240 mm
- + Changeover time between short and long part turning in less than 30 minutes

\* Optional



## FASTER CYCLE TIME WITH 4-AXIS MACHINING

- + Simultaneous turning at the main spindle (4-axis machining) for 8 axis version
- + SPRINT 32|8 with 2\* driven tools for use with the counter spindle

\* Optional

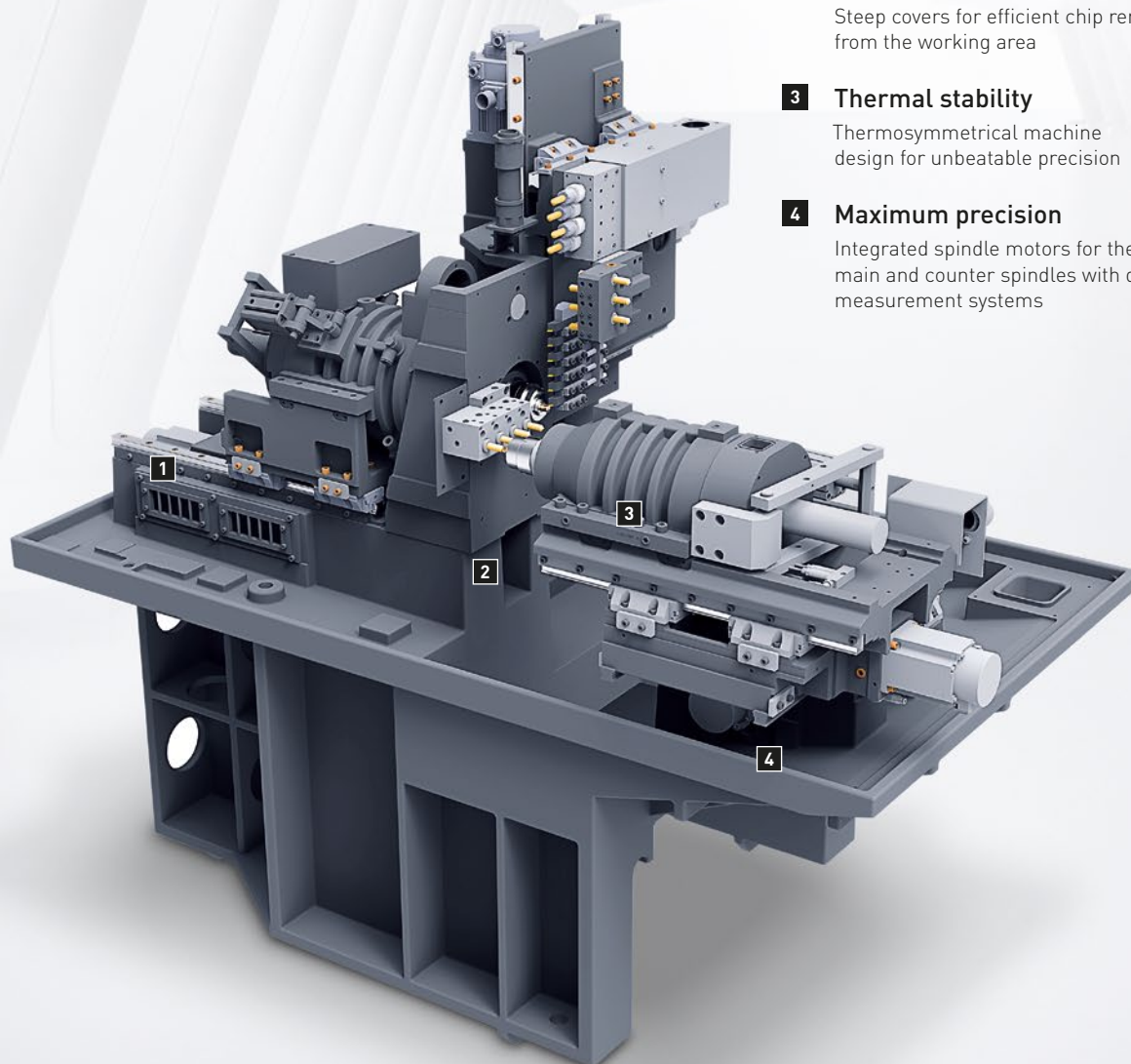


## ENERGY REQUIREMENTS

- + 30 % less total power required than the previous series thanks to the new technological configuration

SPRINT 2015/SPRINT 2018 | SPRINT 3215/SPRINT 3218

# 100 % production-optimised design with maximum stability and long-term precision.



**1 Maximum stability**

Constant stiffness thanks to robust, widely spaced, linear ball bearing guideways

**2 Optimum chip removal**

Steep covers for efficient chip removal from the working area

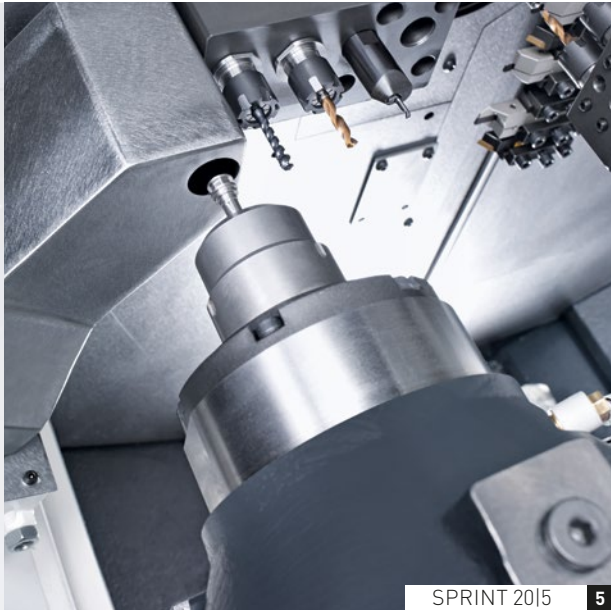
**3 Thermal stability**

Thermosymmetrical machine design for unbeatable precision

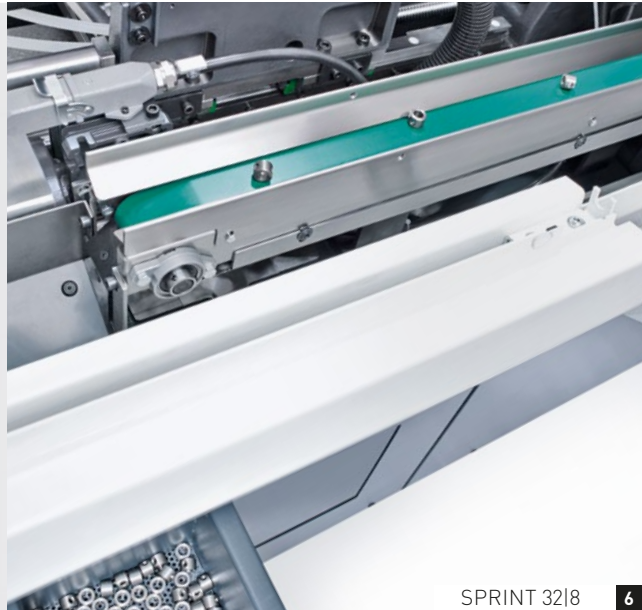
**4 Maximum precision**

Integrated spindle motors for the main and counter spindles with direct measurement systems





SPRINT 20|5 **5**



SPRINT 32|8 **6**



SPRINT 32|5 **7**

## WORKPIECE REMOVAL

### **5 Automatic workpiece removal**

for workpieces up to 100 mm long  
as standard for SPRINT 20|5 and 20|8;  
for workpieces up to 130 mm long as standard  
for SPRINT 32|5 and 32|8;  
for workpieces up to 600 mm long as an option

### **6 Workpiece conveyor belt**

standard for SPRINT 32|5 and SPRINT 32|8;  
optional for SPRINT 20|5 and SPRINT 20|8

## CHIP DISPOSAL

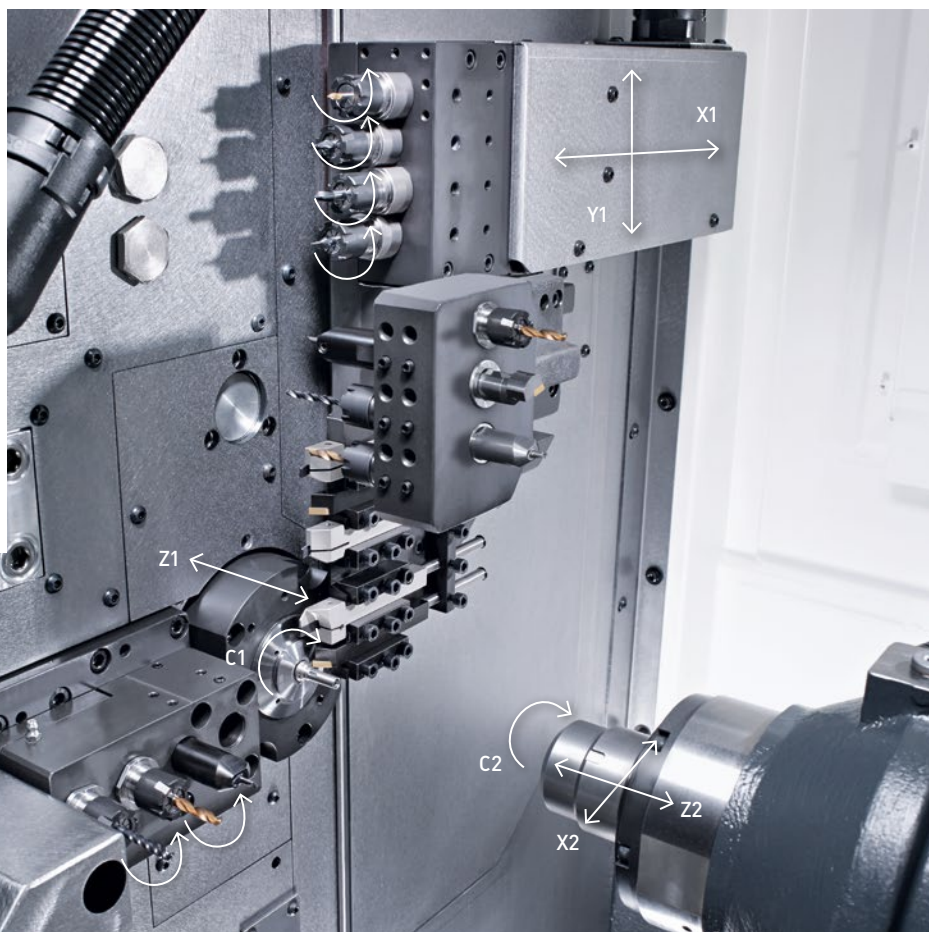
### **7 Optimal chip removal**

with steep or vertical steel covers in the  
working area; chip tray standard and  
chip conveyor optional

## SPRINT 2015 HIGHLIGHTS

- + **23 tool positions** on 2 independent linear carriers
- + **5 linear axis** and 1 C-axis + 1\* C-axis for counter spindle
- + **Up to 6 driven tools**  
(nominal power 1.3 kW)  
2 on slide 1, 6,000 rpm  
2 on slide 1, 3,450 rpm  
2\* on station for back working, 6,000 rpm

\* Optional



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## SPRINT 2018 HIGHLIGHTS

- + **25 tool positions** on 2 independent linear carriers
- + **6 linear axis** and 2 C-axis
- + **8 driven tools**,  
(nominal power 1.3 kW)  
2 on slide 1, 6,000 rpm  
2 on slide 1, 3,450 rpm  
2 on slide Y2 station for back working, 3,450 rpm  
2 on slide Y2 station for back working, 6,000 rpm





SPRINT 2015/SPRINT 2018

## Machining of workpieces up to ø 20 × 600 mm long.

- + **Optimal flexibility** thanks to the large working area and 750 mm wide door
- + **Footprint of under 2 m<sup>2</sup>**
- + **Long workpieces up to 600 mm** are discharged through the counter spindle (optional)
- + **Optimal chip removal** thanks to steep covers in the working area



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		SPRINT 2015	SPRINT 2018
Bar diameter	mm	20	20
Z1 travel	mm	60 (180)*	60 (180)*
Number of linear axes + C-axes		5 + 1(2)**	6 + 2

\*Optionally with SWISSTYPEkit, \*\* Optional package: "Driven tools for back-working including C-axis for the counter spindle"

SPRINT 32|5 / SPRINT 32|8

# Machining of workpieces up to $\varnothing 32 \times 600$ mm long.

- + **Optimal flexibility** thanks to the large working area and 840 mm wide door
- + **Footprint of under 2.8 m<sup>2</sup>**
- + **Long workpieces up to 600 mm long** are discharged through the counter spindle (optional)
- + **Optimal chip removal** thanks to steep covers in the working area



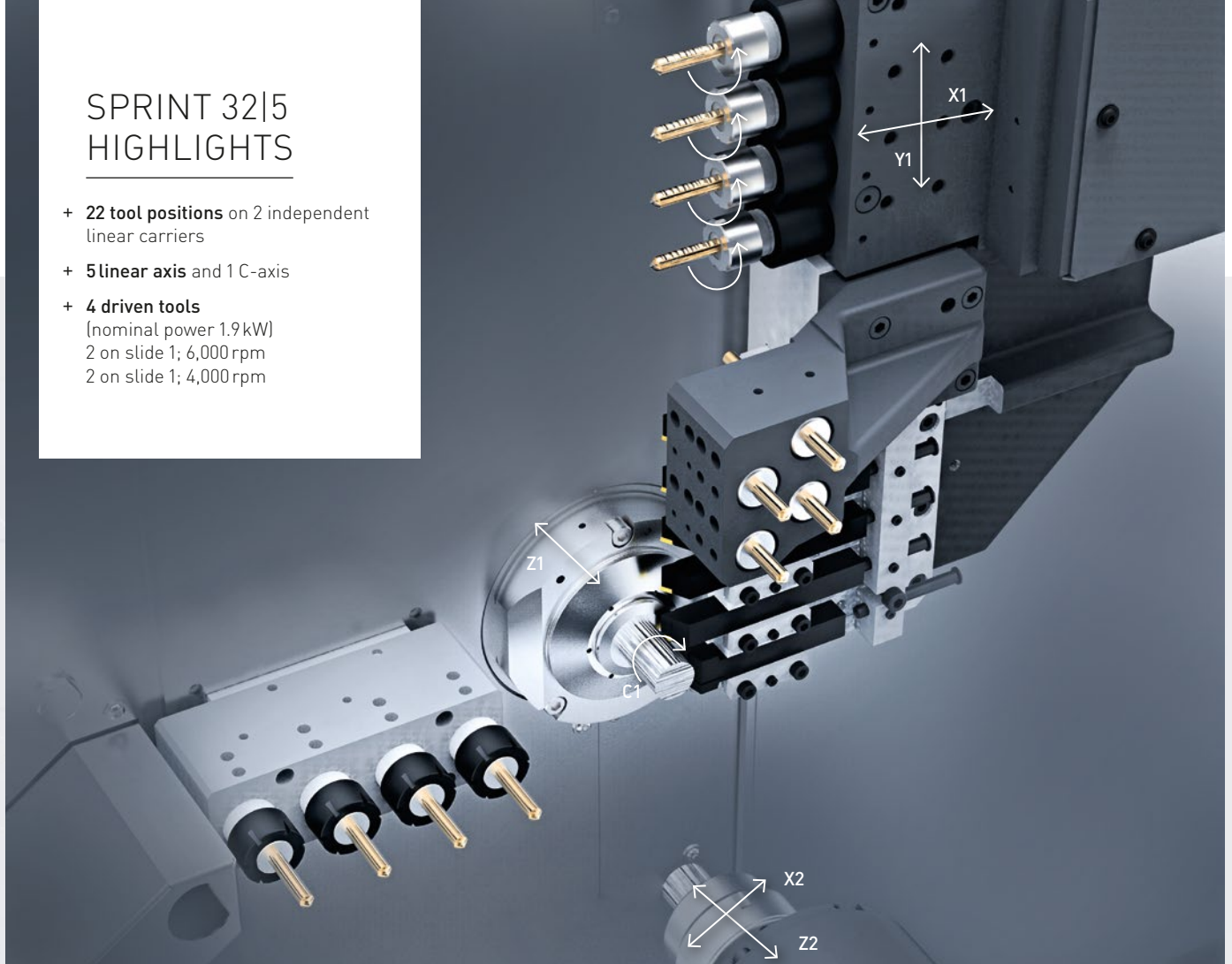
		SPRINT 32 5	SPRINT 32 8
Bar diameter	mm	32	32
Z1 travel	mm	100 (240)*	100 (240)*
Number of linear axes + C-axes		5 + 1	6 + 2

\*Optionally with SWISSTYPEkit



## SPRINT 32|5 HIGHLIGHTS

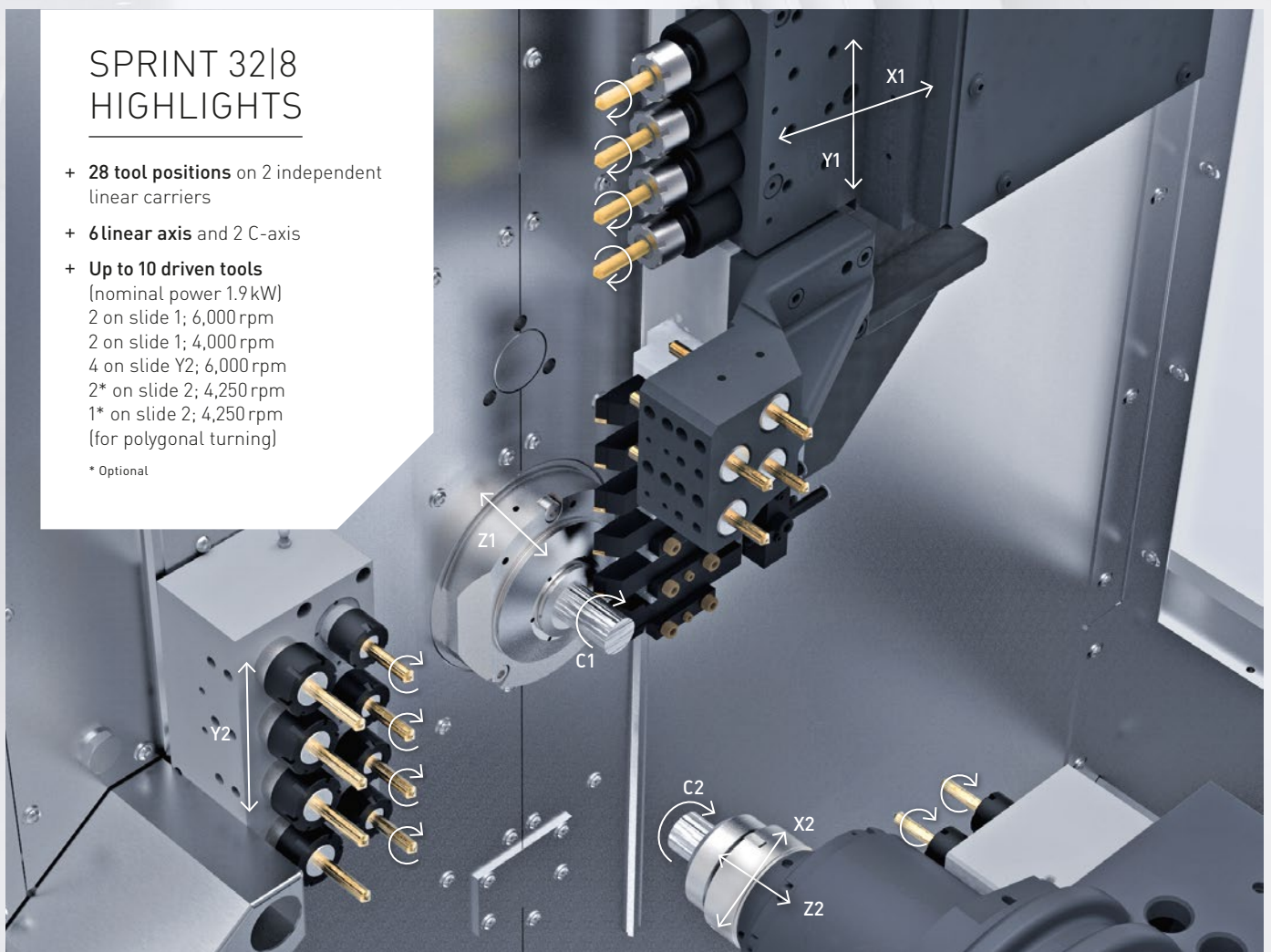
- + **22 tool positions** on 2 independent linear carriers
- + **5 linear axis** and 1 C-axis
- + **4 driven tools**  
(nominal power 1.9 kW)  
2 on slide 1; 6,000 rpm  
2 on slide 1; 4,000 rpm



## SPRINT 32|8 HIGHLIGHTS

- + **28 tool positions** on 2 independent linear carriers
- + **6 linear axis** and 2 C-axis
- + **Up to 10 driven tools**  
(nominal power 1.9 kW)  
2 on slide 1; 6,000 rpm  
2 on slide 1; 4,000 rpm  
4 on slide Y2; 6,000 rpm  
2\* on slide 2; 4,250 rpm  
1\* on slide 2; 4,250 rpm  
(for polygonal turning)

\* Optional



SPRINT 20|5 / SPRINT 20|8 | SPRINT 32|5 / SPRINT 32|8

## SWISSTYPEkit: Changeover between short and long part turning in under 30 minutes.

- + **Maximum flexibility** due to short and long part turning on one machine
- + **Economical production**, use **bar stock quality as required**:
  - + **Short turning**:
    - medium quality bars H11
    - rest piece length min 70 mm for SPRINT 20
    - rest piece length min 81 mm for SPRINT 32
  - + **Long turning**:
    - high quality bars H9
    - rest piece length min 171 mm in for SPRINT 20
    - rest piece length min 203 mm in for SPRINT 32
- + **Vibration-free machining** with driven guide bush with spindle synchronisation
- + **Easy to convert**: Install the guide bush and switch the control system through the menu
- + Extended spindle travel from 60 to 180 mm on SPRINT 20,  
from 100 to 240 mm on SPRINT 32



### SHORT TURNING

#### MEDICAL | DENTAL IMPLANT

- +  $\varnothing 6 \times 11$  mm, titanium alloy
- + 160 seconds per workpiece
- + 11 tools
- + Machining with driven tools
- + 4-axis interpolation turning (X, Y, Z and C)
- + High-speed milling at 6,000 rpm at the counter spindle\*
- + Surface finish of 16  $\mu$ m

\* Optional



### LONG TURNING WITH SWISSTYPEkit\*

#### AUTOMOTIVE | INJECTOR

- +  $\varnothing 12.2 \times 34.5$  mm, AISI 303
- + 95 seconds per workpiece
- + 13 tools
- + Machining with SWISSTYPEkit
- + Front machining with 6 tools
- + Milling with Y-axis
- + Chip removal facilitated by high-pressure coolant\*

\* Optional

# Expertise in technology – short and long part turning with **SWISSTYPEkit**.



1	Short turning	Screw (medical)
	Workpiece material	Titanium
	Bar diameter	4 mm H11
	Workpiece dimensions	ø 4 × 20 mm
	Machining time	66 seconds
	Highlight	Thread whirling at the main spindle with Direct Drive Technology



2	Short turning	Fitting (hydraulics)
	Workpiece material	Steel (95MnPb28)
	Bar diameter	30 mm H9
	Workpiece dimensions	ø 30 × 65 mm
	Machining time	160 seconds
	Highlight	Simultaneous 4-axis machining



3	Long turning with <b>SWISSTYPEkit</b>	Axis (hydraulics)
	Workpiece material	Steel (CK45)
	Bar diameter	16 mm H9
	Workpiece dimensions	ø 16 × 95 mm
	Machining time	250 seconds
	Highlight	Deep-hole drilling



4	Long turning with <b>SWISSTYPEkit</b>	Bone screw (medical)
	Workpiece material	Titanium
	Bar diameter	12 mm H9
	Workpiece dimensions	ø 12 × 80 mm
	Machining time	224 seconds
	Highlight	Thread whirling at the main spindle with Direct Drive Technology



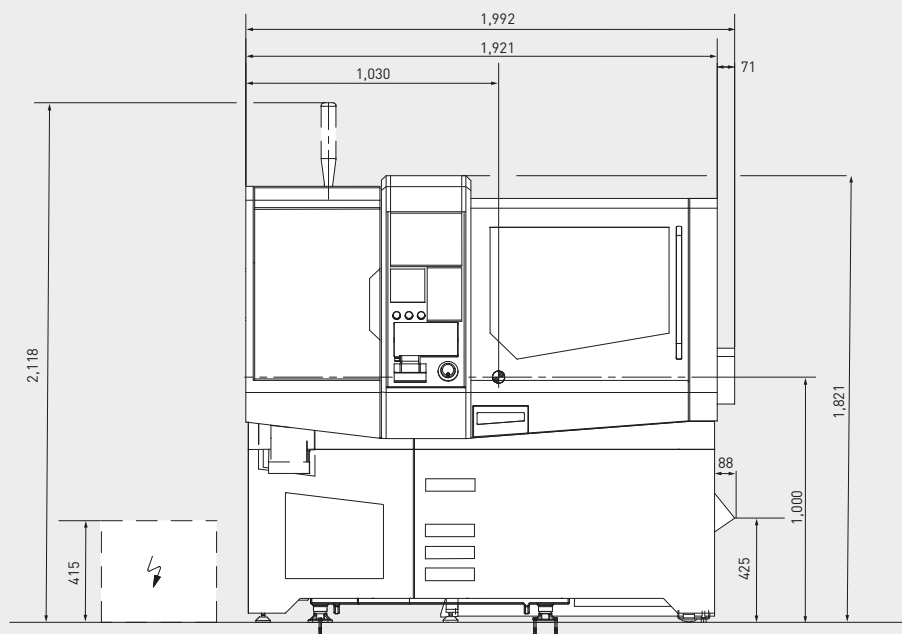
SPRINT 20

# Layout plans

**SPRINT 20|5/SPRINT 20|8**

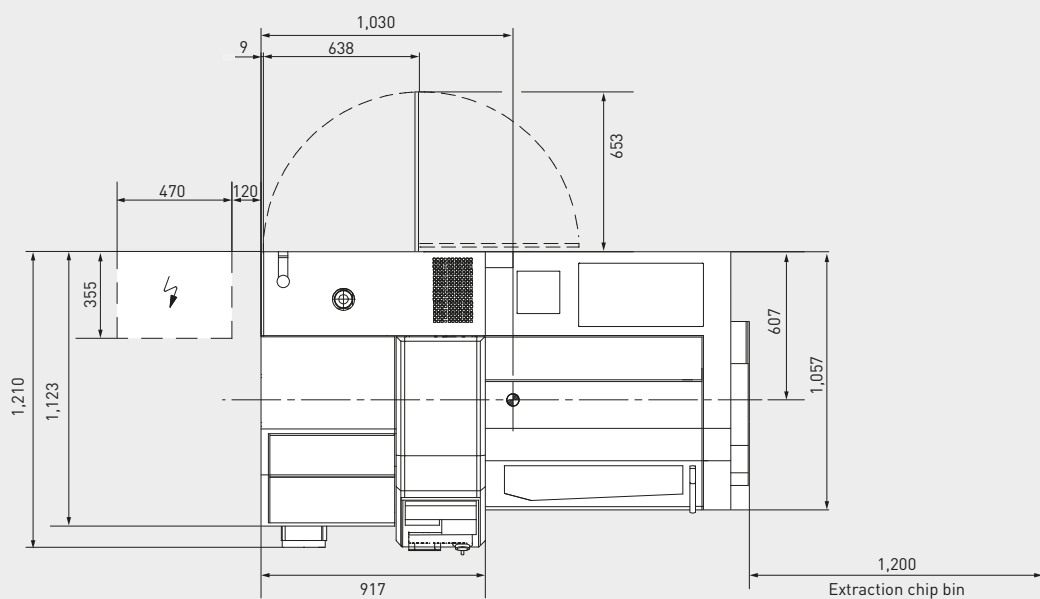
Front view

mm



Side view

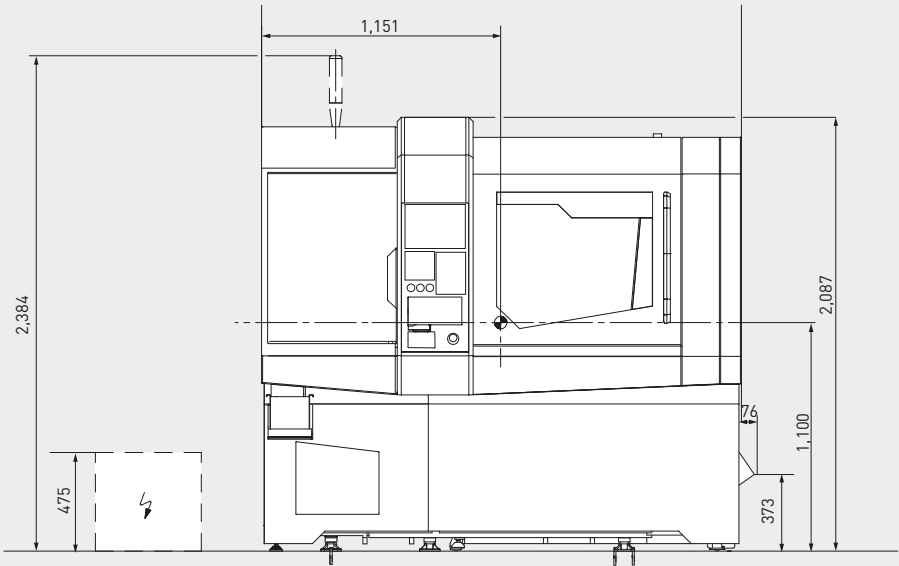
mm



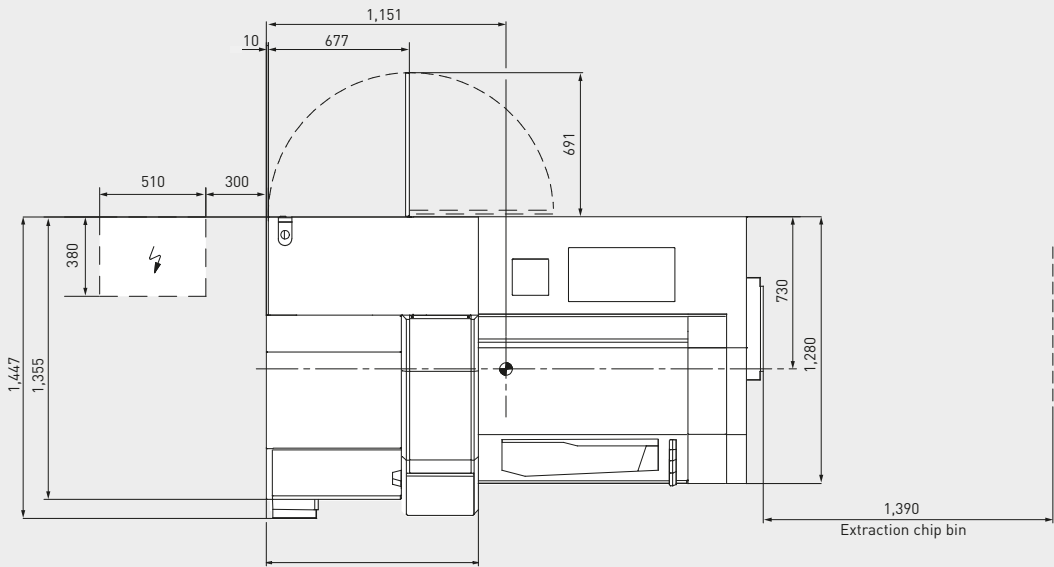
# Layout plans

SPRINT 32|5/SPRINT 32|8

Front view  
mm



Side view  
mm



SPRINT 20|5/SPRINT 20|8 | SPRINT 32|5/SPRINT 32|8

# Main drives with Direct Drive technology for maximum performance.

		SPRINT 20 5/20 8 Main spindle	SPRINT 20 5/20 8 Counter spindle	SPRINT 32 5/32 8 Main spindle	SPRINT 32 5/32 8 Counter spindle
Maximum speed	rpm	10,000	10,000	8,500	8,500
Power [S2 30 min/S1]	kW	3.7/2.2	2.2/1.5	*7.5/5.5	3.7/2.2
Torque [S2 30 min/S1]	Nm	23.6/14	7/4.8	*51.9/40.4	23.6/14
Maximum cutting diameter	Nm	20	20	32	32
<b>High-performance turning [95MnPb28   20/32 mm bar diameter]</b>					
Material removal rate	cm <sup>3</sup> /min	130	85	220	130
Depth of cut	mm	2.5	1.5	3.5	2.5
Feed	mm/rev	0.3	0.3	0.35	0.3
Spindle speed	rpm	3,200	3,200	2,000	2,000
Material removal rate	cm <sup>3</sup> /min	115	80	115	115
Depth of cut	mm	3.5	3	4.5	3.5
Feed	mm/rev	0.2	0.15	0.2	0.2
Spindle speed	rpm	3,200	3,200	2,000	2,000
<b>High-performance boring [95MnPb28   20/32 mm bar diameter]</b>					
Solid drill	mm	12	10	15	12
Feed	mm/rev	0.2	0.2	0.25	0.2
<b>Threads [95MnPb28   20/32 mm bar diameter]</b>					
Thread size	mm	M10 × 1.5	M8 × 1.25	M14 × 1.25	M10 × 1.5

\* S2 15 min/S1

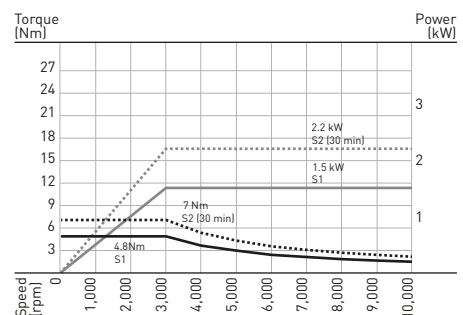
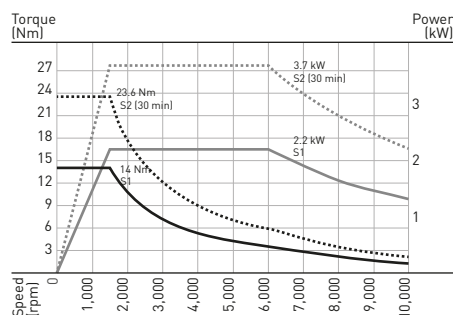
## SPRINT 20|5/SPRINT 20|8

Main Spindle

10,000 rpm

Counter Spindle

10,000 rpm

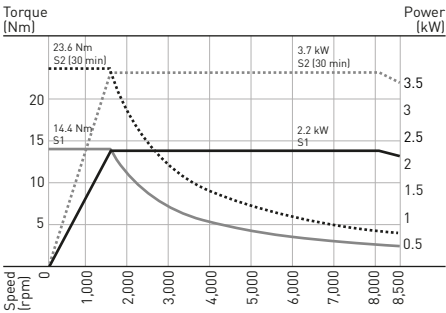
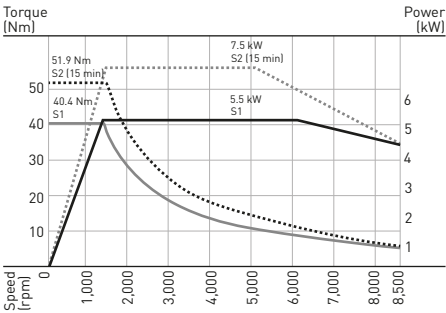




SPRINT 32|5/SPRINT 32|8

Main Spindle  
8,500 rpm

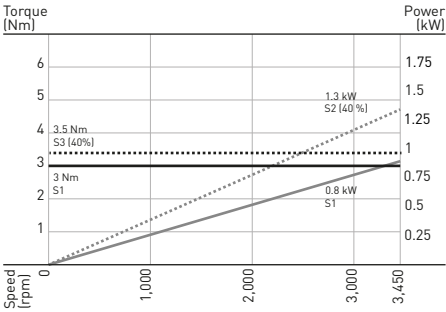
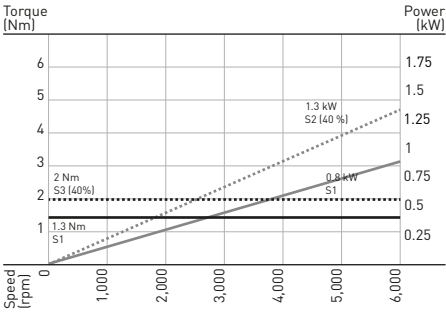
Counter Spindle  
8,500 rpm



SPRINT 20|5/SPRINT 20|8

Driven tool stations on slide 1  
6,000 rpm

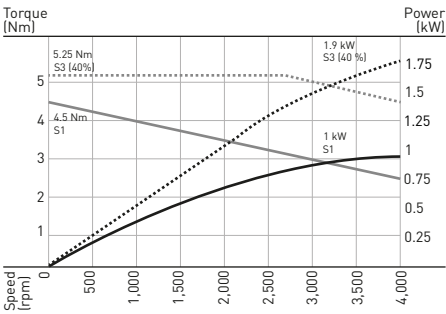
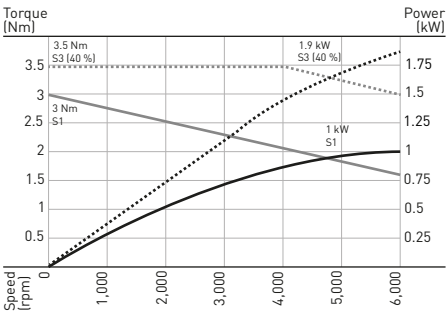
Driven tool stations on slide 1  
3,450 rpm



SPRINT 32|5/SPRINT 32|8

Driven tool stations on slide 1  
6,000 rpm

Driven tool stations on slide 1  
4,000 rpm



SPRINT 20|5/SPRINT 20|8 | SPRINT 32|5/SPRINT 32|8

# Technical data

		SPRINT 20 5	SPRINT 20 8	SPRINT 32 5	SPRINT 32 8
<b>Machine concept</b>					
Number of linear axes + C-axes		5 + 1	6 + 2	5 + 1	6 + 2
Number of spindles		2	2	2	2
Number of channels		2	2	2	2
<b>Main spindle</b>					
Maximum bar capacity	mm	20	20	32	32
Speed	rpm	10,000	10,000	8,500	8,500
Power [S2 30 min/S1]	kW	3.7/2.2	3.7/2.2	7.5/5.5 S2 15 min/S1	7.5/5.5 S2 15 min/S1
Torque [S2 30 min/S1]	Nm	23.6/14	23.6/14	51.9/40.4 S2 15 min/S1	51.9/40.4 S2 15 min/S1
<b>Counter spindle</b>					
Maximum bar capacity	mm	20	20	32	32
C-axis [0.001 °]		Optional	Standard	–	Standard
Speed	rpm	10,000	10,000	8,500	8,500
Power [S2 30 min/S1]	kW	2.2/1.5	2.2/1.5	3.7/2.2	3.7/2.2
Torque [S2 30 min/S1]	Nm	7.0/4.8	7.0/4.8	23.6/14	23.6/14
<b>Working area/travels</b>					
Z1 travel [spindle travel]	mm	60/180**	60/180**	100/240**	100/240**
Tool carrier 1: X1/Y1 travel	mm	50/325	50/325	70/405	70/405
Counter spindle: X2/Z2 travel	mm	220/170	220/170	300/200	300/200
Tool carrier 2: Y2 travel	mm	–	85	–	135
Rapid traverse speed on linear axes X1, Z1, X2, Z2/Y1, Y2	m/min	32/32	32/32	40/30	40/30
Acceleration in linear axes	m/s²	5	5	5	5
<b>Tool holder on slide 1</b>					
Fixed turning tools		6	6	6	6
Tools for front machining/back-working		6/3	3/3	4/4	4/4
Driven tools		2+2	2+2	2+2	2+2
Maximum speed	rpm	6,000	6,000	6,000	6,000
Power [S3 40%/S1]	kW	1.3/0.8	1.3/0.8	1.9/1	1.9/1
Maximum torque [S3 40%/S1]	Nm	2/1.3	2/1.3	3.5/3	3.5/3
Maximum speed	rpm	3,450	3,450	4,000	4,000
Power [S3 40%/S1]	kW	1.3/0.8	1.3/0.8	1.9/1	1.9/1
Maximum torque [S3 40%/S1]	Nm	3.5/3	3.5/3	5.25/4.5	5.25/4.5
<b>Tool holder on slide Y2</b>		<b>On station for back working</b>		<b>On station for back working</b>	
Fixed/driven tools for back-working		4/0 [2/2]***	3/2+2	4/0	4/4 [5/4]*
Maximum speed	rpm	6,000	6,000	–	6,000
Power [S3 40%/S1]	kW	1.2/1	1.3/0.8	–	1.9/1
Maximum torque [S3 40%/S1]	Nm	2.5/2	2/1.3	–	3.5/3
Maximum speed	rpm	–	3,450	–	–
Power [S3 40%/S1]	kW	–	1.3/0.8	–	–
Maximum torque [S3 40%/S1]	Nm	–	3.5/3	–	–
<b>Tool holder on slide 2</b>					
Fixed/driven tools for back-working		–	–	–	2/0 [0/2]* [0/1 for polygons]*
Maximum speed	rpm	–	–	–	4,250
Power [S3 40%/S1]	kW	–	–	–	1.9/1
Maximum torque [S3 40%/S1]	Nm	–	–	–	3.5/3

		SPRINT 20 5	SPRINT 20 8	SPRINT 32 5	SPRINT 32 8
<b>Machine</b>					
Footprint	m²	1.96	1.96	2.8	2.8
Machine height	mm	1.821	1.821	2.085	2.085
Machine weight (including coolant tank)	kg	2,300	2,500	3,450	3,550
<b>Control system</b>					
DMG MORI SLIMline Control with 10.4" monitor		FANUC 32i	FANUC 32i	FANUC 32i	FANUC 32i

\* Optional, \*\* Optional with SWISSTYPEkit, \*\*\* SPRINT 20|5 C-axis on the counter spindle when you choose driven tools for back-working, – not available

SPRINT 20|5/SPRINT 20|8 | SPRINT 32|5/SPRINT 32|8

## Options

	SPRINT 20 5	SPRINT 20 8	SPRINT 32 5	SPRINT 32 8
<b>Tools</b>				
2 driven tools on station for back working, including C-axis for the counter spindle	*	–	–	–
2 driven tools besides the counter spindle	–	–	–	*
Driven angle head drilling and milling attachment for slide 1	*	*	*	*
Driven angle head drilling and milling attachment for slide Y2	–	*	–	*
<b>Bar machining</b>				
SWISSTYPEkit: Short turning to long turning conversion kit, including driven guide bush	*	*	*	*
Bar loading magazine	*	*	*	*
Workpiece unload through counter spindle: maximum workpiece length 600 mm	*	*	*	*
Workpiece unload: through counter spindle maximum workpiece length 100 mm	**	**	**	**
<b>Coolant and chip disposal</b>				
Slat band conveyor with a chip ejection height of: 600 mm (compatible with workpiece unload through counter spindle)	*	*	*	*
12-bar internal coolant supply system, unit for oil and emulsion	*	*	*	*
Conversion kit for operating the machine with emulsion instead of oil	*	*	*	*
Conveyor belt for finished workpieces	*	*	**	**
Oil mist extraction system	*	*	*	*
<b>Control system</b>				
Tool wear monitoring system	*	*	*	*
Sister tool management system	*	*	*	*
DMG MORI Netservice	**	**	**	**
DMG MORI Messenger	*	*	*	*
DMG MORI Service Agent	*	*	*	*
<b>Miscellaneous</b>				
Signal lamp 4-colour	*	*	*	*
Machine adaptation for increased ambient temperatures of up to 50 °C (tropical package)	*	*	*	*

\* Optional, – Not available, \*\* Standard in base machine





DMG MORI SLIMline CONTROL

## Control panel with 10.4" colour display and FANUC 32i.

- + DMG MORI SMARTkey for user access
- + Dual Check Safety System for monitoring machine movements
- + Enhanced stock removal cycles for turning, external threading, boring, rigid tapping and hobbing
- + DMG MORI cycles for machine monitoring: feed thrust reduction, position monitoring and axial stopping
- + Programming of complex cycles using the external CAD-CAM system ESPRIT\*
- + USB interface
- + Tool Monitoring System\* with graphical tool load display
- + 2 MB NC RAM

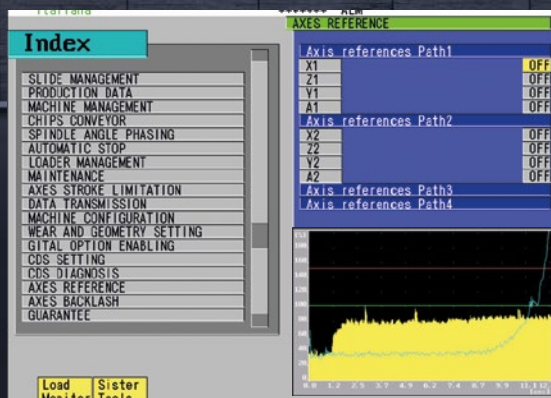
\*Optional

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### FANUC NC FOR OPTIMIZED PRODUCTION

- + 2 control channels, up to 6 linear axes and up to 2 C-axes
- + Multi-channel screen for displaying both control channels



### LOAD MONITOR AND SISTER TOOLS

- + Load monitor software as option analyzes current absorption to show tools wear
- + Tailor made pages for production control, according to Industry 4.0 requirements



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[service-hotline.dmgmori.com](https://service-hotline.dmgmori.com) 

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# DMG MORI