



# SYSTEM 3

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**VERTICAL MACHINING CENTERS**  
WITH 180°-WORKPIECE CHANGER



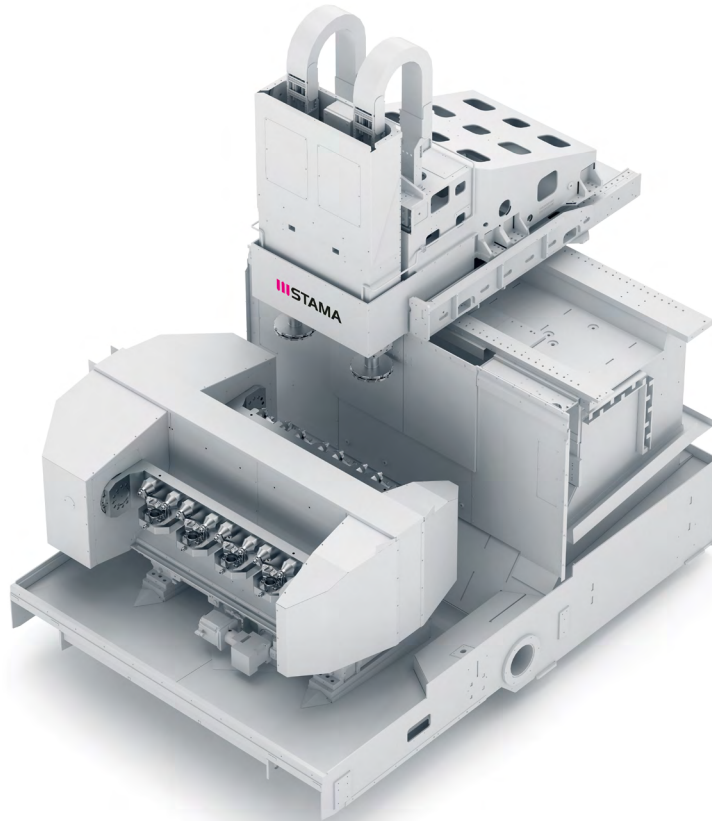
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## SERIES PRODUCTION WITH 2 PLUS 4 CONCEPT

### **Workpiece: Caliper**

300 days of operation  
3-shift operation  
4 finished parts pro cycle  
Annual production:  
500000 parts

**MC 338 TWIN with HSK-A100**



# MULTIPLE BENEFITS

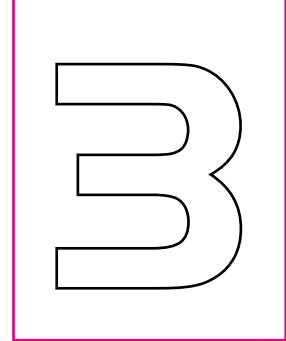
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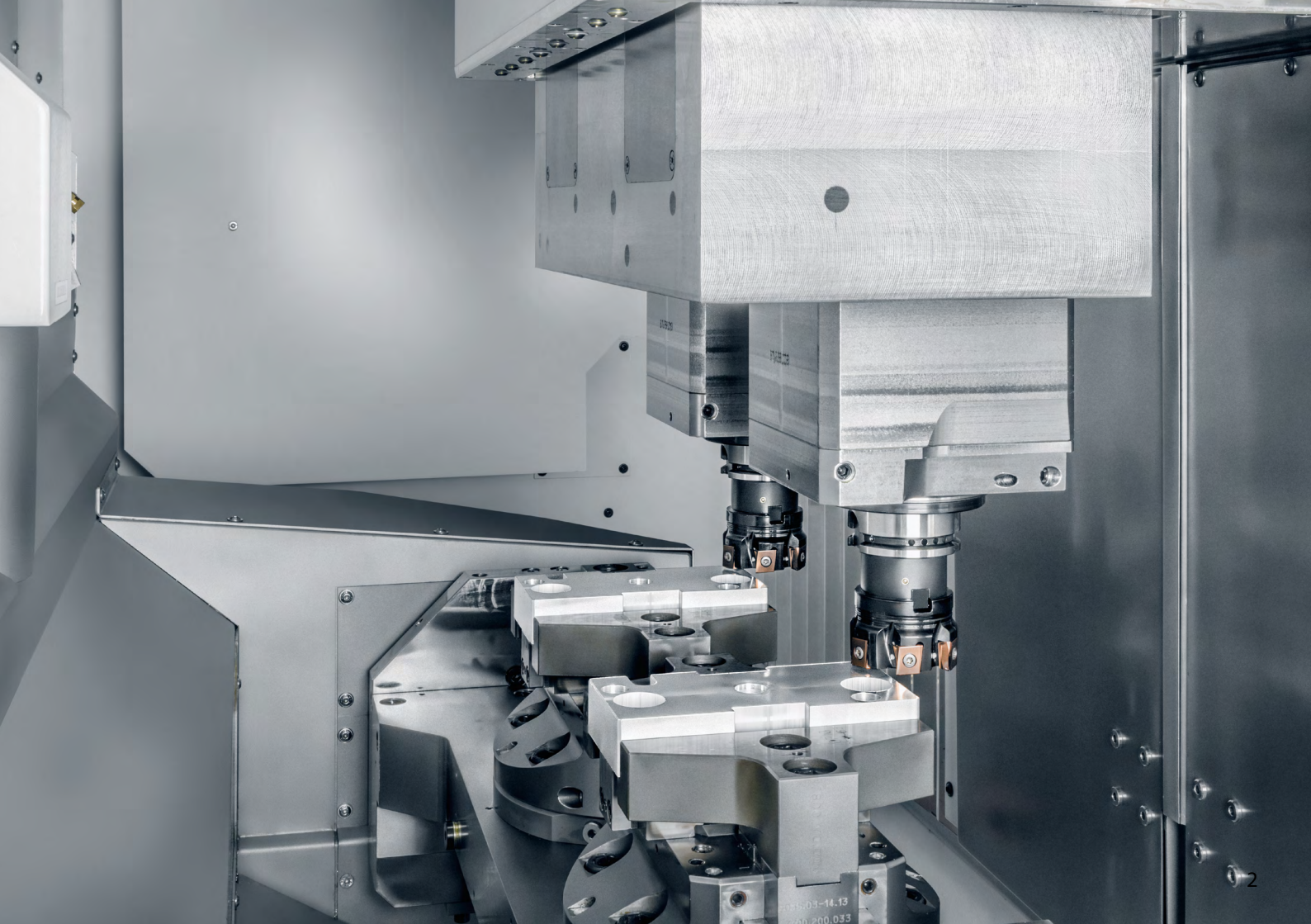
## TWO WORK-SPACE MC FOR SERIES MANUFACTURING HIGHLY PRODUCTIVE COMPLETE MACHINING

Today's products are more custom-tailored and their lifecycles are shorter. The quality level increases, production volumes vary and process changes determine the everyday business flow. Large series manufacturers find themselves confronted with a special challenge: They have to combine highly productive manufacturing with flexibility.

STAMA's System 3 centers provide the features and qualities needed to meet this requirement.

The aim is to ensure that by using innovative manufacturing solutions, you can continue to deliver on time at attractive costs per part in a constantly changing production world.





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# SERIES PRO

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## COMPLETE MACHINING IN TWO CLAMPINGS **MAIN TIME PARALLEL WORKPIECE HANDLING**

With their integrated 180°-workpiece changer, STAMA's System 3 centers offer two separate work spaces within a small footprint. Each work space can be configured for 3, 4 or 5 axes for the complete machining of the workpiece in two clamping positions – OP10 and OP20.

While the machining process is underway in work space 1, the machine operator or an automated workpiece handling have complete access to work space 2 to simultaneously load and unload during the main time process. This eliminates unproductive ancillary times by up to 90%. Users also benefit from reduced WIP.



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# INVESTMENT INTO **ADDED VALUE**

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THE ELIMINATION OF UNPRODUCTIVE ANCILLARY TIMES DELIVERS  
**MORE PARTS AND ADDED VALUE – A SAMPLE CALCULATION**

Making the additional investment into the set up of the second work space allows users to attain two objectives: Increased output per footprint and consequently, a significant cost advantage per part. Moreover, complete machining in two clamping positions on one machine reduces the WIP.

Series components with short cycle times are the target workpieces for the System 3 machining centers.





MC with  
fixed table/  
bridge  
1 work space  
**100%**

MC with  
workpiece  
changer  
2 work spaces  
**125%**

more investment  
**25%**

Investment

Productive  
cycle time  
**50%**

Loading and  
unloading time  
**50%**

Productive  
cycle time with  
time parallel  
loading and  
unloading  
**90%**

Loading and  
unloading time  
**10%**

more parts  
**40%**

Time

Added value  
**15%**

Result

# TWO-SPACE TABLE

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AMPLE ROOM FOR LARGE WORKPIECES OR MULTIPLE CLAMPING PROCESSES  
**APPROACH PROCESS AND PRODUCTION CHANGES FLEXIBLY**

Complete production of one, two or four workpieces in two clamping positions: The flexible design of the two work spaces allows users to cost effectively implement manufacturing processes with different machining operation requirements in a highly productive manner.



3-AXIS

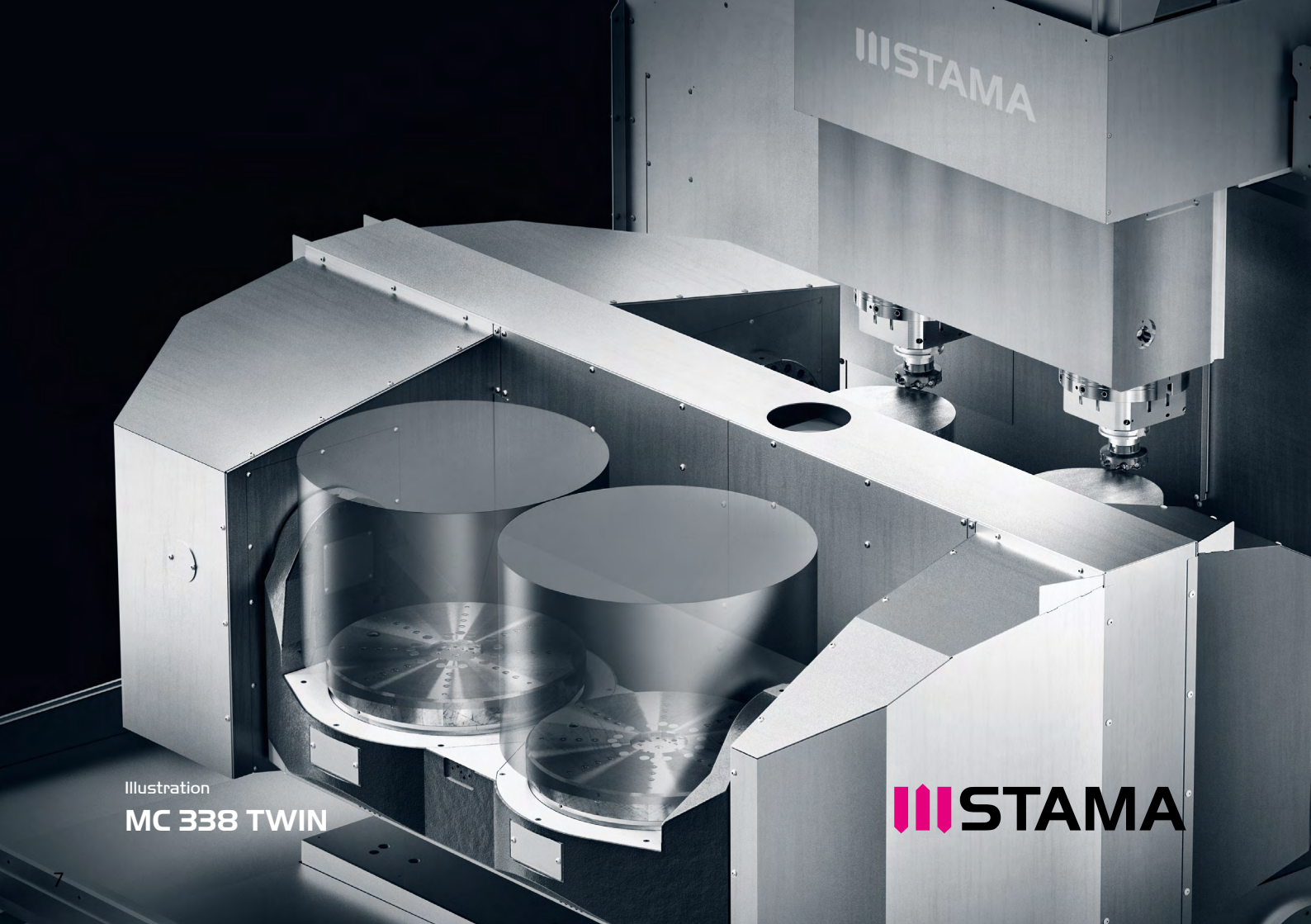


4-AXIS



5-AXIS





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Illustration  
MC 338 TWIN

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# MC 331 TWIN R

FAST: DELIVERED, RETROFITTED, MANUFACTURED  
**WORKPIECE SIZES TWIN UP TO 400 mm**



## Performance

Spindle distance	mm	400
Milling spindles	kW	2 x 22
Torque	Nm	2 x 140
Spindle speeds	x 1000 r.p.m.	12

## Tools

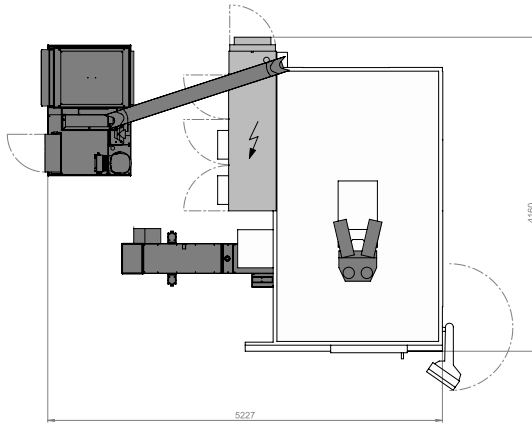
Tools	HSK-A63	2 x 35
Weight	kg	5
Diameter	mm	78/140
Length	mm	300
Chip-to-chip time	s	3.0

## Traverse paths

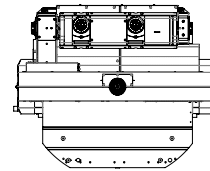
X-axis	mm	620
Y-axis	mm	400
Z-axis	mm	400
Rapid motion	m/min	75
Acceleration	g	up to 1.2

## Control

Fanuc 31i-B5



**MC 331 TWIN R  
with standard  
equipment  
Available ex works  
in 4–6 weeks**



Swiss precision for the 4<sup>th</sup> and 5<sup>th</sup> axis with Lehman tables. On site retrofitting in just 4 weeks.

Dimension/weight		
Width	mm	2990
Depth	mm	4160
Height	mm	3250
Weight TWIN R	kg	7800

#### Data workpiece TWIN 400, 5-axis machining

Workpiece Ø	mm	390
Height	mm	195
Weight	kg	67

#### Data workpiece changer 3-axis option

Clamping weight	kg	2 x 450
Swivel time 0°–180°	s	≈ 3,5
Clamping surface	mm	2 x 1100 x 495

Subject to technical changes.  
Version July 2019.

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# MC 331

WORKPIECE SIZES SINGLE UP TO 700 mm  
**WORKPIECE SIZES TWIN UP TO 320/400 mm**



<b>Performance</b>		Single	TWIN
Spindle distance	mm	–	320/400
Milling spindles	kW	22/51	2 x 22/51
Torque	Nm	140/170	2 x 140/170
Spindle speeds	x 1000 r.p.m.	10/12/15*	10/12/15*

<b>Tools</b>		Single	TWIN
HSK-A63	number	48/60/120	2 x 32/68**
Weight	kg	5/10	5/10
Diameter	mm	88/140	78/140
Length	mm	300	300
Chip-to-chip time	s	2.9	3.0

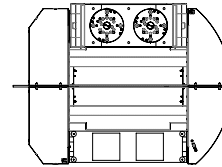
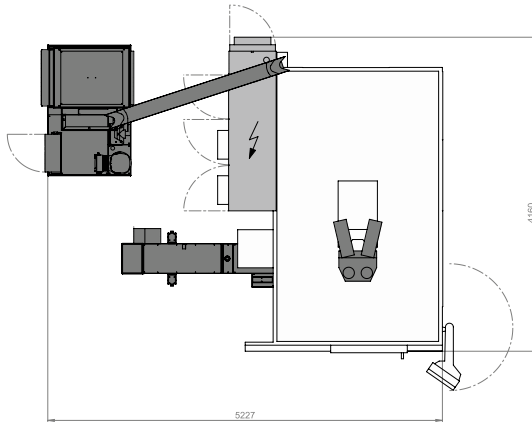
<b>Traversal paths</b>		
X-axis	mm	700***
Y-axis	mm	400
Z-axis	mm	400
Rapid motion	m/min	75
Acceleration	g	up to 1.8 (S)/1.5 (TWIN)

**Control**  
 Fanuc 31i-B5/Siemens 840D sl

\*15000 r.p.m. with 140 Nm

\*\*2 x 35 for TWIN spindle distance 400 mm

\*\*\*620 mm for TWIN spindle distance 400 mm



**MC 331 – for  
innovative turnkey  
solutions in series  
production**

<b>Dimension/weight</b>		
Width	mm	2990
Depth	mm	4160
Height	mm	3250
Weight single	kg	7600
Weight TWIN	kg	7800

**Data workpiece** TWIN 320, 5-axis machining

Workpiece Ø	mm	310
Height	mm	275
Weight	kg	75

**Data workpiece changer** 3-axis option

Clamping weight	kg	2 x 450
Swivel time 0°–180°	s	≈ 3,5
Clamping surface	mm	2 x 1100 x 495

Subject to technical changes.  
Version July 2019.

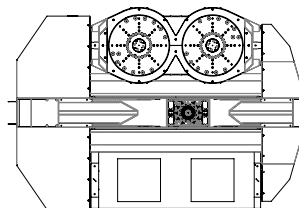
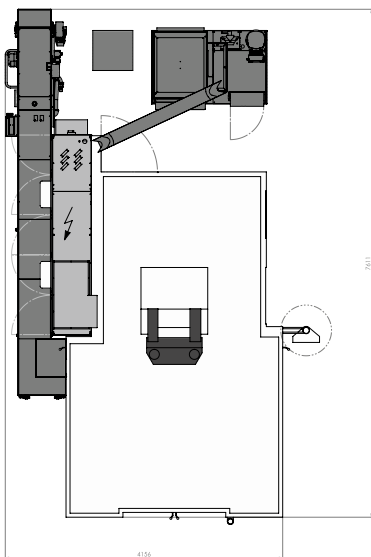


# MC 337 | MC 338

WORKPIECE SIZES SINGLE UP TO 800 mm  
**WORKPIECE SIZES TWIN UP TO 600 mm**



		MC 337		MC 338			
		Single	TWIN	Single	TWIN		
<b>Performance</b>						<b>Traversal paths</b>	
Spindle distance	mm	–	600	–	600	X-axis	mm 800
Milling spindles	kW	31	2 x 31	65	2 x 65	Y-axis	mm 550
Torque	Nm	115	2 x 115	400	2 x 400	Z-axis	mm 550
Spindle speeds	x 1000 r.p.m.	16	16	10	10	Rapid motion	m/min 65
<b>Tools</b>						Acceleration	g up to 1
HSK-A63	number	60/96	2 x 30/48	–	–	<b>Control</b>	
HSK-A100	number	–	–	40/64	2 x 20/32	Fanuc 31i-B5/Siemens 840D sl	
Weight	kg	10	10	18	18		
Diameter	mm	98/200	98/200	148/250	148/250		
Length	mm	400	400	400	400		
Chip-to-chip time	s	3.3	3.4	3.3	3.4		



MC 338 with  
HSK-A100  
for materials  
that are difficult  
to machine

### Dimension/weight

		MC 337	MC 338
Width	mm	3640	3640
Depth	mm	5955	5955
Height	mm	3720	3720
Weight single	kg	17000	17100
Weight TWIN	kg	17400	17500

### Data workpiece TWIN 600, 5-axis machining

Workpiece Ø	mm	590
Height	mm	380
Weight	kg	350

### Data workpiece changer 3-axis option

Clamping weight	kg	2 x 1500
Swivel time 0°-180°	s	≈ 5.0
Clamping surface	mm	2 x 1400 x 600

Subject to technical changes.  
Version July 2019.

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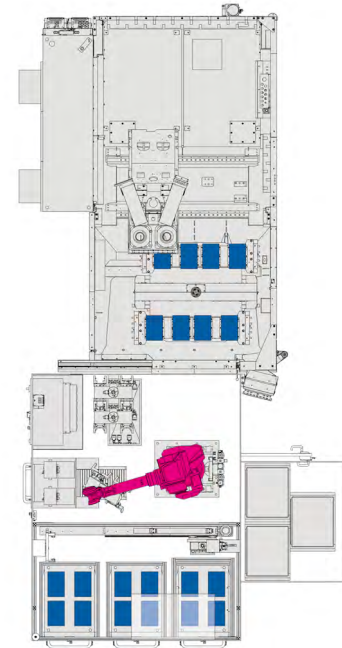
# WORKPIECE HANDLING

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HIGHLY PRODUCTIVE MANUFACTURING. **WHETHER AUTOMATED OR MANUAL LOADING**

The decision to use manual or automated workpiece handling is made on the basis of cost effectiveness and technical criteria.

The focus is always on the best process reliability and the lowest possible costs per part. Specific digitization to monitor or control the manufacturing process increases the level of autonomy.





TIME SAMPLE		OP10	OP20	TOTAL
<b>One-place center TWIN</b>	s			
Cutting time	s	150	60	210
Load/unload time	s	45	45	90
Total cycle time	s	<b>195</b>	<b>105</b>	<b>300</b>
<b>MC 331 TWIN</b>				
Cutting time	s	150	60	210
Swivel time System 3	s	3,5	3,5	7
Total cycle time	s	<b>153,5</b>	<b>63,5</b>	<b>217</b>
<b>Increased output</b>	%	<b>21,3</b>	<b>39,5</b>	<b>27,6</b>

To achieve this, it is not necessary to attain a balanced cycle time ratio of OP10 to OP20; the determining factor for maximum productivity is that the loading and unloading time does not exceed the cutting time.



# SYSTEM 3

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## VERTICAL MACHINING CENTERS WITH 180°-WORKPIECE CHANGER

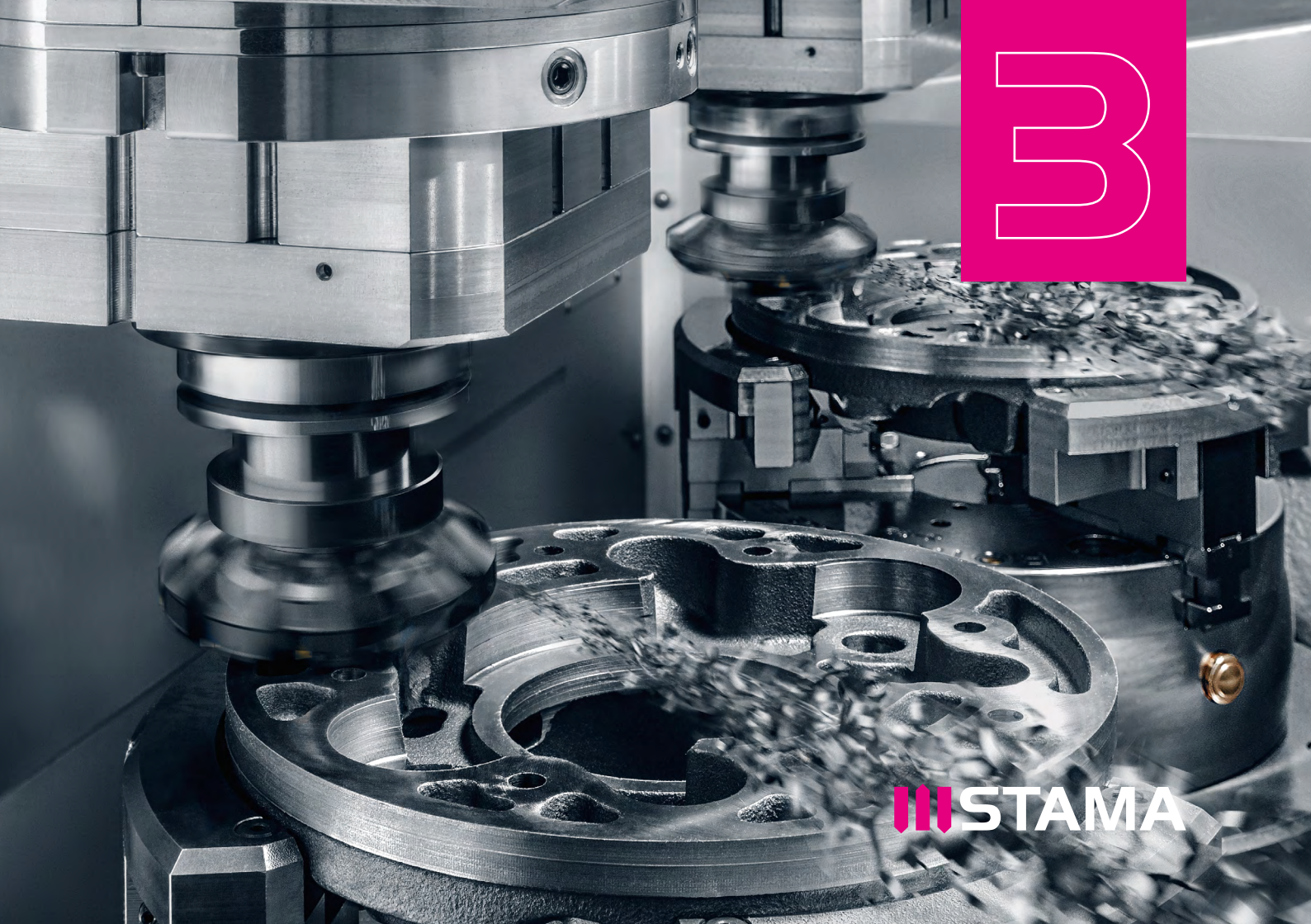


**MC 331**



**MC 337 | MC 338**





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