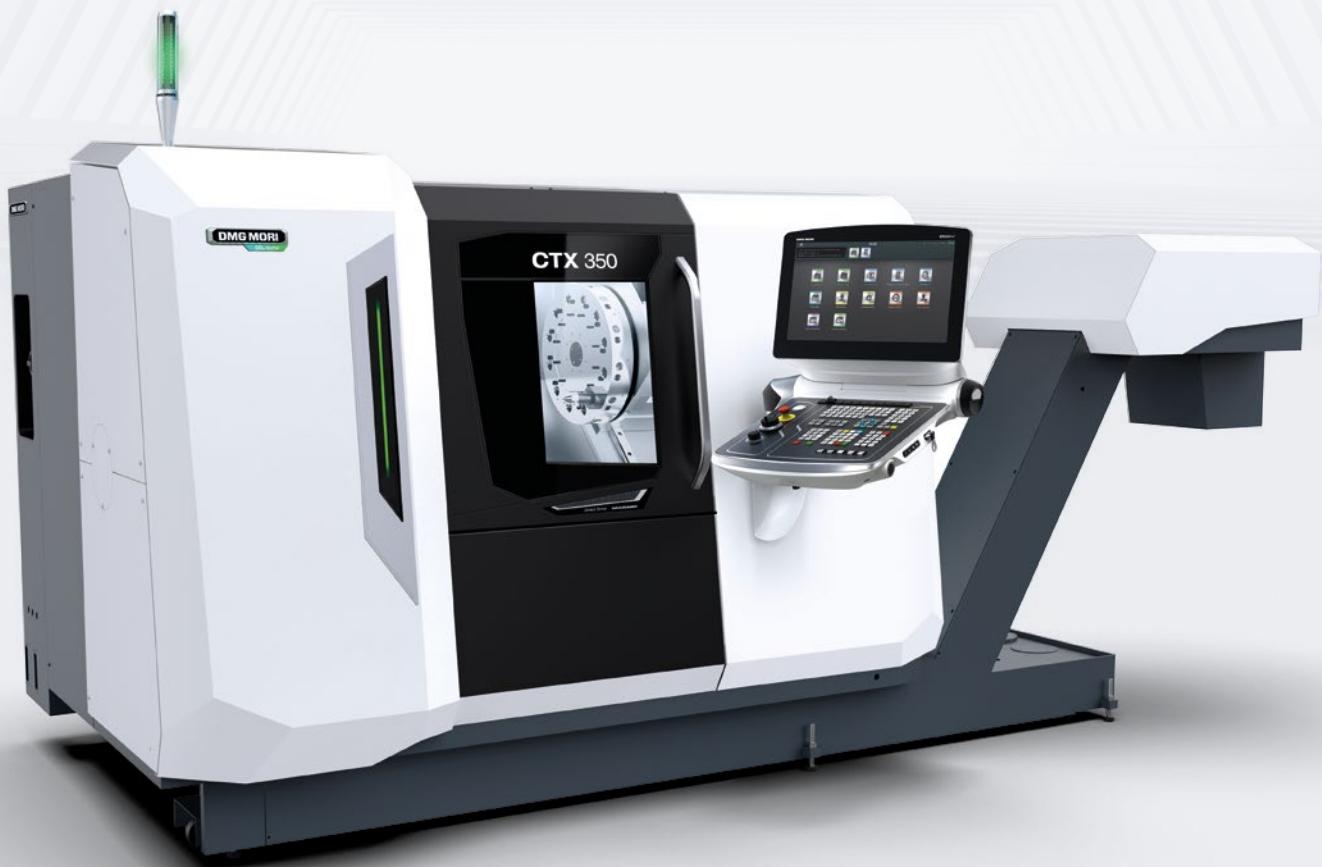


**DMG MORI**

CTX 350

UNIVERSAL TURNING

## CTX 6<sup>th</sup> Generation



**Highlights**

Machine and Technics

Machine components

CNC technology

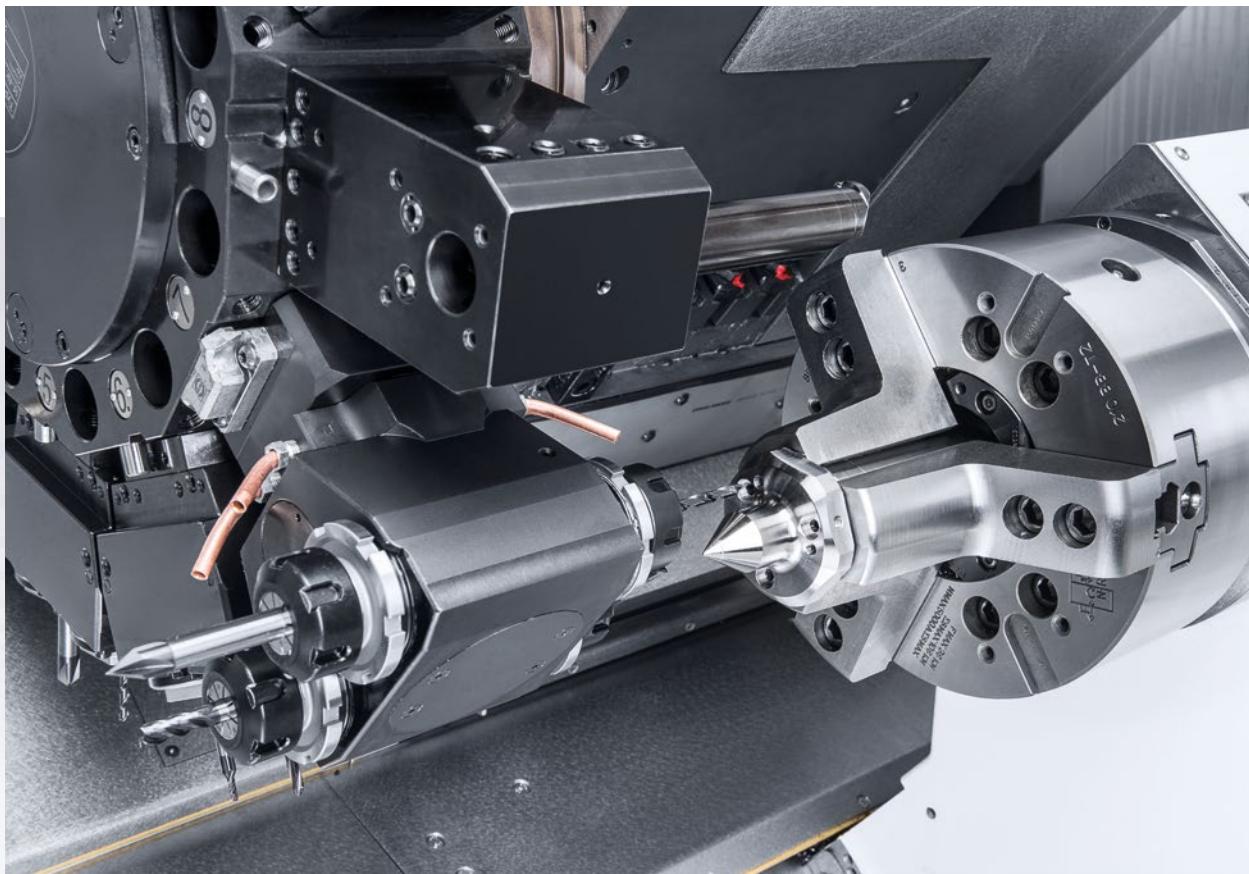
Automation

Technical data and options

CTX 350

## The first step into the CTX 6<sup>th</sup> generation





## HIGHLIGHTS

- + Max. turning diameter 320 mm and 540 mm length; **65 mm bar machining capacity**
- + Y-axis with  $\pm 50$  mm: the largest in its class
- + **6 sided complete machining** with left spindle (5,500 rpm/max 192 Nm) and optional right spindle (6,000 rpm/62 Nm)
- + **12 positions VDI 30 Turret**, up to 12,000 rpm fully ready for high pressure coolant (40 bar in std)
- + **Best Energy Efficiency** due to **integrated spindle motors** with synchro technology and inverters for all motor pumps
- + **Long lasting accuracy** due to linear scale direct measuring system and liquid cooled spindle drives
- + **DMG MORI** multi-touch control panel with SIEMENS or touch panel for FANUC

CTX 6<sup>TH</sup> GEN. SERIES

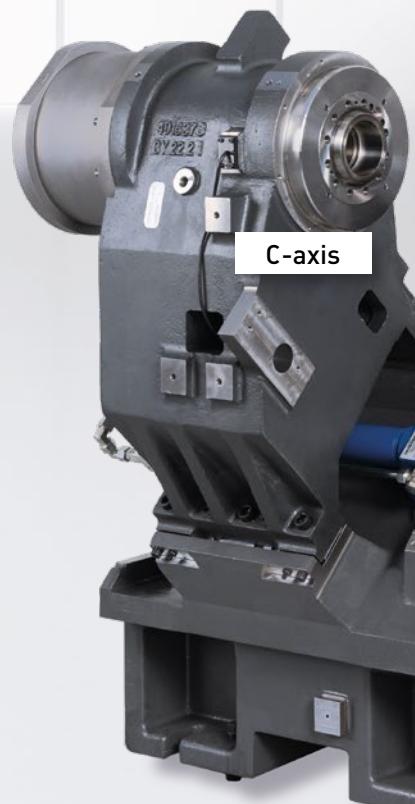
## Rigid cast iron bed with high quality ball screws and linear guideways meets high production standards

The CTX series is based on an FEM optimized High quality, compact and torsion-resistant cast iron bed, for the best stiffness and vibration dumping characteristics.

The four-guideway design allows collision-free movement of the Z-axis and tailstock or back-spindle. Metal covers in working area through inclination of 45° optimize chip fall and increases operational safety and machine service life.

Highest quality ball screws and width dimension linear guideways in the X/Y and Z-axes were combined to support heavy duty cutting, guarantee machine dynamics to meet the best standards in production.

- + **Highly dynamic spindle drive**  
with up to 5,500 rpm, 192 Nm and counter-spindle drive  
with 6,000 rpm, 67 Nm
- + **Dynamic and precise C-axis control**  
by using of the Magnescale measuring system  
on front bearing
- + **VDI 30 interface turret,**  
with increased stiffness by large and unified footprint  
allows the machining of large range of workpieces
- + **Synchronization of the main spindle**  
**and counterspindle indexing** permits the machining  
of complex workpieces



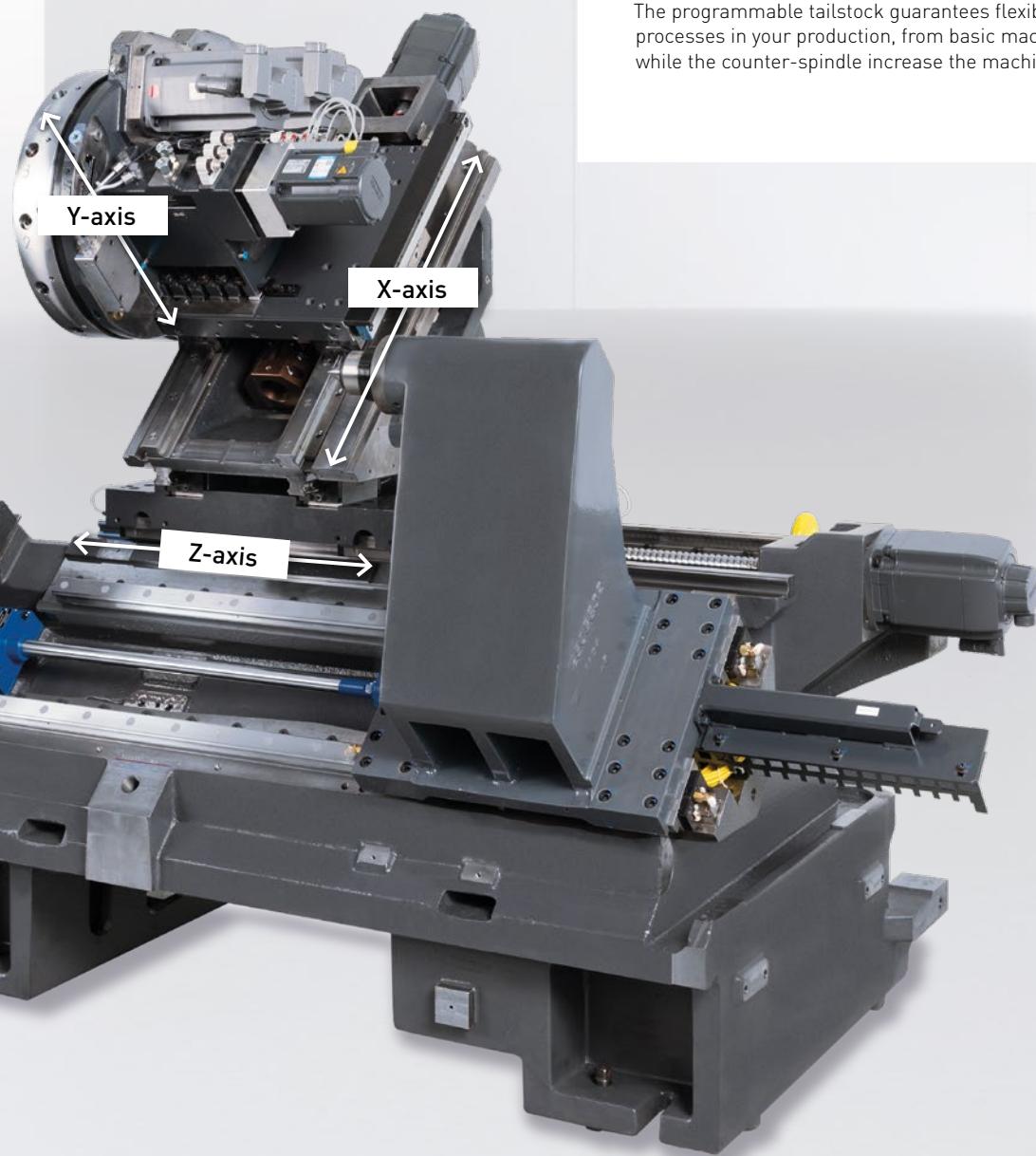
## CONSTRUCTION AND DESIGN BENEFITS

The thermal stable headstock with long life lubricated high-quality bearings, ensures high rotational precision and long-lasting service.

The high-power synchro motors allows both dynamic and high torque machining, with a large bar capacity, improving productivity.

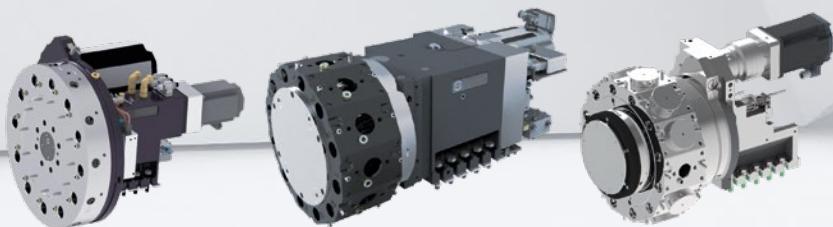
The low connected load, efficient power consumption and energy recovery ensure efficient use of energy.

The programmable tailstock guarantees flexibility and rapid processes in your production, from basic machine version while the counter-spindle increase the machine flexibility.



CTX 350

## Dedicated Turrets for any application



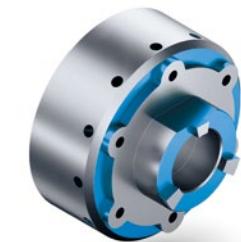
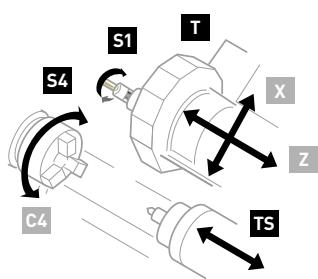
Model	Disc type turret HPT VDI 30 Gear Drive	Star type turret HPT Gear Drive VDI 30	Star type turret Direct Drive VDI 30
Power/torque (kW/Nm)	6,000/6.6/14	6,000/6.6/14	12,000/6.6/14
Rotary speed (rpm)	7,000/8,000 (opt)	6,000/7,000 (opt)	12,000
Machine Version	V3/V4 std	V6 std	V6 optional
Ready for 40 bar coolant pressure	•	•	80 bar
Air oil lubricated for 100 % duty cycle in milling	•	•	liquid cooled

• Standard

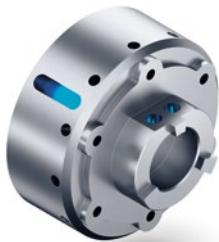
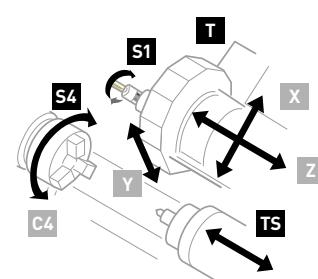
### Assures high machine flexibility with more machine version

06

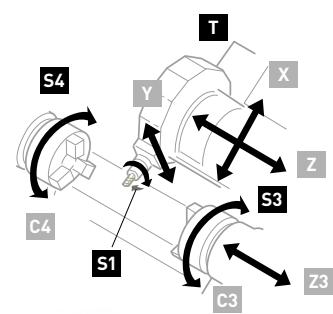
**V3** version = turning + milling



**V4** version = turning + milling + Y-axis

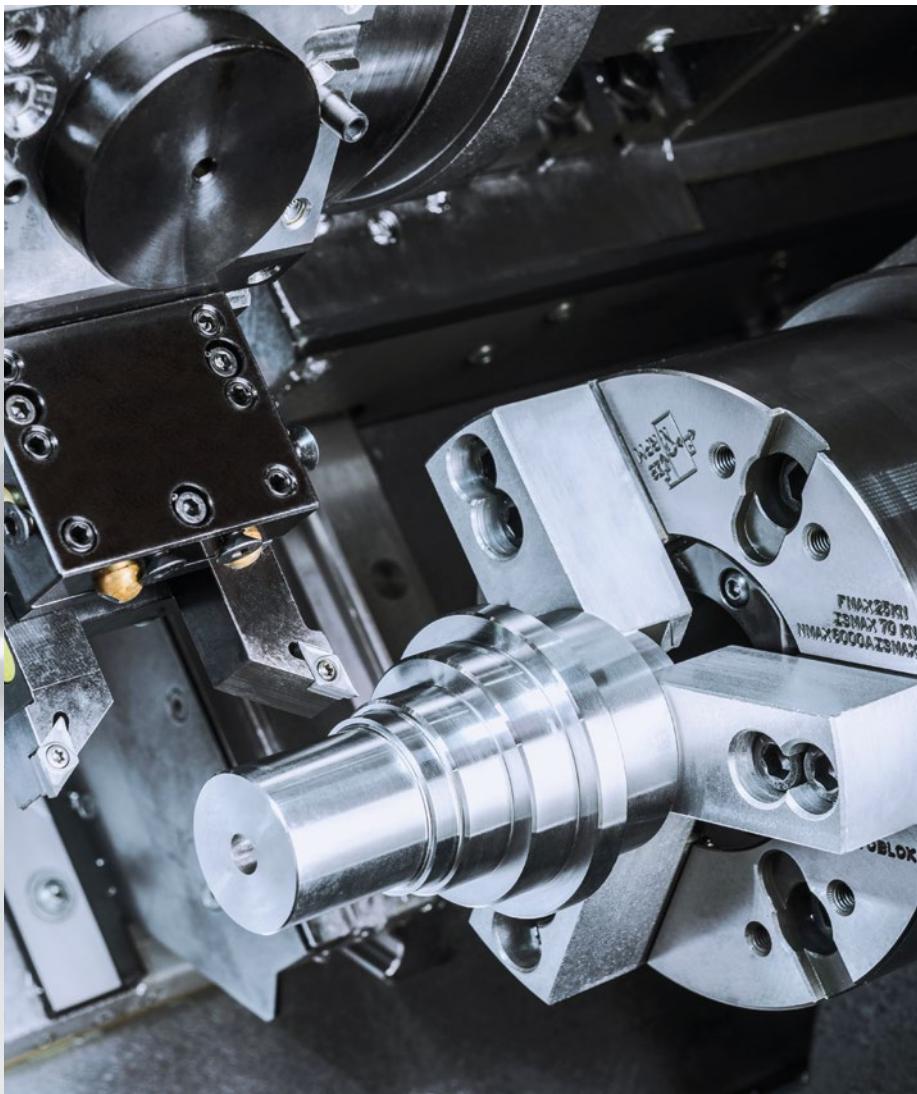


**V6** version = turning + milling + Y-axis + counter spindle



**S4** Main spindle   **S3** Counter spindle (auxiliary tailstock function as an option)   **T** Turret   **TS** Tailstock   **S1** Driven tool

**X** X-axis   **Y** Y-axis   **Z** Z-axis   **Z3** Travel of counter spindle   **C4** C-axis of main spindle   **C3** Positioning of counter spindle



## TRIFIX®: ACCURATE AND QUICK SET UP WITH VDI

07

- + Common for all star turrets
- + Tool set-up time of < 30 seconds
- + Maximum stability and long-term precision:  
play-free and spring-loaded double centring and  
increased rigidity thanks to large interface with  
bolt hole pattern
- + < 6 µm repeatability (same tool, same position)
- + < 10 µm positioning accuracy from one station to the next
- + Fully aligned driven tools
- + VDI holders can be used
- + Up to 4:1 gear reduction tool holders for torque  
demanding milling
- + Faster turret tooling set up VS Block Tool System

CTX 350

## CELOS – From the idea to the finished product

### Simple

- + Simple machine operation for all new high-tech machines from DMG MORI

### Continuous

- + CELOS simplifies and accelerates processes from the idea to the finished product
- + Intuitive and simple user interface
- + Faster, more effective and error-free production processes
- + Networking option of the machine with the company organization
- + Complete multi-machine management
- + High process reliability and structured processes

### Compatible

- + Compatible with PPS and ERP systems
- + Can be networked with CAD/CAM products
- + Open to pioneering CELOS APP extensions

### ERGOline CONTROL WITH 21.5" MULTI-TOUCH-SCREEN AND SIEMENS CONTROL

- + Dialogue-based programming
- + 3D graphics including real-time simulation
- + Ample diagnosis for all drives
- + Simplest graphical programming
- + User diagrams for quick set-up





DMG MORI SLIMline touch control with FANUC  
Reliable, secure, user-friendly for high performance machining

\*FANUC iSeries – 2 MB

09

## 19" DMG MORI SLIMline TOUCH and FANUC iSERIES with IHMI

- + 3D machining simulation for easy contour verification
- + Conversational automatic programming function with process menu
- + Manual Guide and interactive programming
- + File display and note function for accessing operating instructions, drawings and texts
- + User – friendly operator guidance screen with clear machine status display

- + 19-inches touch display
- + 45° swivel range
- + Expanded memory capacity\*
- + 3D control technology

## 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 SMART KEY

Personalized authorization and additional  
8 GB 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

### + 3D CONTROL TECHNOLOGY

Workpiece and machining simulation with touch operations

DMG MORI TECHNOLOGY CYCLES

# Exclusiv Technology Cycles – Complex machining easily realized!

DMG MORI exclusive technology cycles are the true assistants of the production-oriented programming to increase productivity and safety as well as to extend machine capability.

- + Proper program structure
- + Program up to 60 % faster
- + Error minimization by dialog-guided programming
- + Technology know-how stored in the program



## **EXCENTRIC TURNING AND MILLING**

Eccentric geometries easy to manufacture

- + Superposition of the turning movement by additional X- and Y-traverses
- + Applicable for turning and milling
- + Exact axis coupling and synchronization in the background



## **COUNTER SPINDLE TIP**

Perfect combination of 6-sided complete machining and tailstock function

- + Automatically load and unload a tailstock centre into the chuck of the main spindle or counter spindle via the milling spindle and into the magazine
- + Support of long and slender workpieces on the main spindle thanks to the synchronous counter spindle tip
- + Higher component accuracy due to automatic change without opening the door (heat flow constant)



## **POLYGON TURNING**

Highly productive without milling the individual surfaces

- + Machining also on machines without Y-axis
- + Dialog-guided programming thanks to the technology cycle
- + Productivity, especially with small components
- + Chamfering possible in the same process
- + Simple and fast programming minimizes errors



## **ALTERNATING SPEED**

Avoiding vibrations of tools by means adaptation of the speed

- + Easy to operate through three parameters and without additional sensors
- + No manual intervention by the operator
- + Identical repeatability for all components
- + Increased process safety for special applications by avoiding vibrations
- + Both for SIEMENS and FANUC controls



## **EASY TOOL MONITOR 2.0**

Drive load monitoring of the tools during the machining process to prevent damage to the machine and equipment

- + Save the monitoring limits for each tool and every cutting edge in the program
- + NEW: User interface on CELOS SideScreen
- + NEW: Powerful algorithm for efficient monitoring after the first workpiece
- + Both for SIEMENS and FANUC controls



## **MULTI THREADING 2.0**

Trapezoidal, buttress and knuckle thread easily programmable at the machine

- + Screw conveyor with any profile geometry
- + Free definition of contours, pitches and number of starts possible
- + NEW: On-Point Threading – Position oriented thread production



## **Y-AXIS PARTING**

The new highly productive Y-axis parting method is amazingly easy to use with the technology cycle

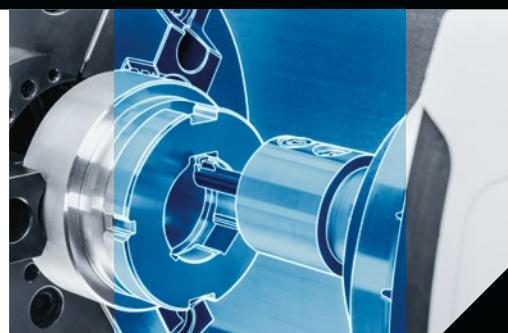
- + Compatible with the standard cycle CYCLE92 (Part off cycle), so that the operator can program as usual (ShopTurn and DIN/ISO)
- + Up to three times higher productivity possible (3x feed) with simultaneously improved chip control
- + Both for SIEMENS and FANUC controls



## **KEYWAY BROACHING**

High flexibility in creating grooves according to DIN6885 or DIN138, inside or outside, narrow or wide, short or long with standard tools on standard machines

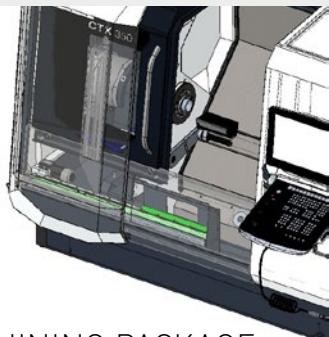
- + Structured input parameters for the groove geometry, the tool and the machining strategy
- + Advantages of rigid machine guidance for better groove quality
- + Both for SIEMENS and FANUC controls



CTX 350

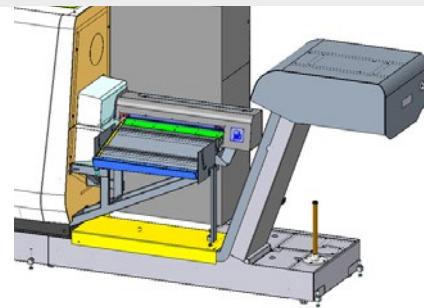
# Increase efficiency of the machine with tailor-made automation solutions

## Basic incorporated automation options for loading and unloading



BAR MACHINING PACKAGE WITH PART CATCHER

- + Handling of the bars up to 65 mm
- + DMG MORI standard interface getting along with the majority bar loaders/bar loading magazines available in the market
- + Workpiece unloading device integrated in the machine with pneumatic part catcher for workpieces 65×200 mm, 4 kg



INTEGRATED SHAFT UNLOADING DEVICE THROUGH COUNTERSPINDLE

- + **Long shaft** parts with machining at both ends (for example shock dampers)
- + Parts dimension up to Ø40 mm and 500 mm length
- + **Compact** solution for small diameter shaft unloading
- + Shafts are unloaded in a frontal tray

## Integrated automation with 6-axis robot

### PLUG AND PLAY CELL TO HANDLE THE PART FROM START TO FINISH

The automation device integrated in the machine allows quick and easy loading/unloading of the machine without opening loading hatches or doors.

- + For workpieces Ø100×125 mm
- + Customized workpiece tray
- + Personalized grippers

**Customer benefits:**

- + Quick loading and unloading
- + Small space requirement

## DMG MORI flexible workpiece loading and unloading systems

### READY FOR DMG MORI AUTOMATION SOLUTIONS

- + Interface for Robo2Go: Handling of shafts Ø20 – 170 mm and chuck parts Ø20 – 175 mm
- + Interface for MATRIS Light:  
Workpieces up to 5 kg or 2×2 kg  
with double gripper



## Energy efficiency

- + Low friction guideways
- + Low consumption lubrication system
- + Synchron motor technology
- + LED workspace lighting
- + Hydraulic unit with inverter technology
- + Frequency controlled coolant pumps motors
- + Clocked chip conveyor
- + Energy recovery from brake energy
- + 3-Phase motors class IE3
- + Energy efficient cooling of electrical cabinet
- + Linear scales without pressurization
- + DMG MORI Autoshutdown in standard
- + Energy certificates for all CTX machines
- + Specific CELOS APP's (for SIEMENS control)



Highlights

Machine and Technics

Machine components

CNC technology

Automation

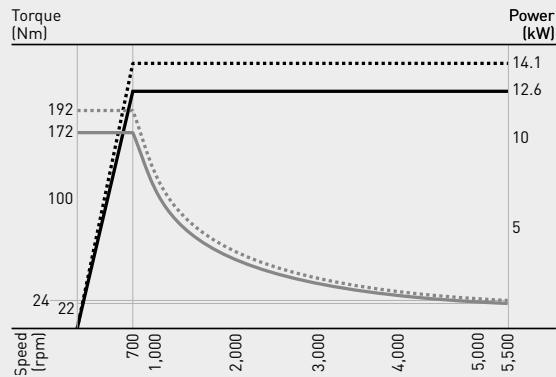
Technical data and options

CTX 350

# Power/Torque Diagrams

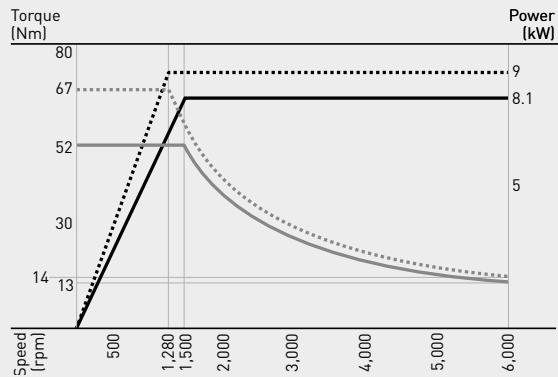
## Main spindle

ISM 65



## Counter spindle

ISM 50



## Turrets

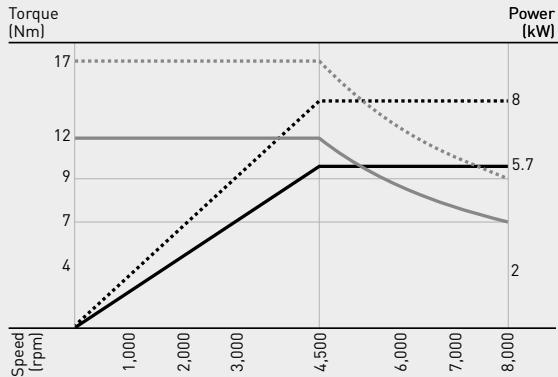
### Gear drive 6,000 rpm

standard



### Gear drive (8,000 rpm) increased speed

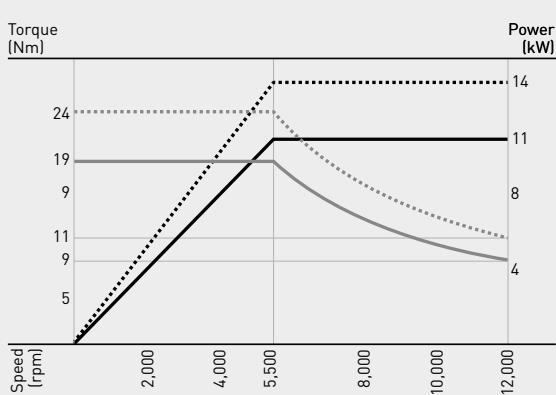
option



Key:  
1. radial  
2. axial

### Direct drive 12,000 rpm

option



..... 40% DC (S6) — 100% DC (S1)

## MACHINING PARAMETER\*

CTX 350		
<b>Rough turning</b>		
Cutting speed Vc	m/min	250
Feed	mm/rev	0.4
Cutting depth ap	mm	3.5
<b>Finishing turning</b>		
Cutting speed Vc	m/min	320
Feed	mm/rev	0.12
Surface roughness Ra	µm	0.8
Tool radius	mm	R 0.8
<b>Drilling</b>		
Cutting speed	m/min	160
Feed	mm/rev	0.16
Tool diameter	ø mm	45

\*for material Steel C45

### 1: Chain Wheel

Industry: Machinery  
Material: Steel 15CrNi6  
Dimensions: ø 100 × 115 mm  
Machining time: 14.5 min

### 2: Balancing flange adapter

Industry: Machinery  
Material: Steel C45  
Dimensions: ø 160 × 70 mm  
Machining time: 30 min

### 3: V-Pulley

Industry: Machinery  
Material: Steel ETG88  
Dimensions: ø 150 × 150 mm  
Machining time: 23 min

### 4: Chuck adapter

Industry: Machinery  
Material: Steel C45  
Dimensions: ø 260 × 60 mm  
Machining time: 35 min

### 5: Nozzle

Industry: Engineering  
Material: Steel 1.4305  
Dimensions: ø 36 × 35 mm  
Machining time: 25 min

### 6: Connector

Industry: Automotive  
Material: Steel C45  
Dimensions: ø 80 × 95 mm  
Machining time: 9 min

Highlights
Machine and Technics
Machine components
CNC technology
Automation
<b>Technical data and options</b>

CTX 350

# Technical data

CTX 350		
<b>Bed</b>		
Bed inclination	mm	45°
Bed material	mm	Cast iron
Number of guideways	mm	3 (4 op. Y)
<b>Working area</b>		
Swing diameter over bed	mm	650
Swing diameter over cross slide	mm	370
Max. turning diameter	mm	320
Recommended Turning diameter	mm	200
Distance between centers (V3-V4)	mm	715
Max. turning length (V3-V4)	mm	540
Travel X-axis (V3-V4)	mm	250
Travel Y-axis (optional)	mm	100 ( $\pm 50$ )
Travel Z1-axis (V3-V4)	mm	550
Travel Z3-axis (V3-V4)	mm	550
Spindle axis height from ground	mm	1,017 (987 + 30)
<b>Main spindle</b>		
Spindle nose	type	A2-6"
Chuck (diameter)	mm	$\varnothing 210 / 250$
Bar passage	mm	65
Spindle hole diameter	mm	73
Clamping pipe diameter	mm	66
Frontbearing diameter inside	mm	120
Lubrication of spindle bearings	type	Grease
Power, max. 100 % ED (40 % ED)	kW	12.6 (14.1)
Speed range 100 % ED	rpm	120
Speed range 40 % ED	rpm	5500
Rated speed	rpm	0-700
Torque, max. 100 % ED (40 % ED)	Nm	172 (192)
Type of voltage, no. of range		AC/1
Type of motor		ISM65 syn.
Speed range C-axis	rpm	0-700
Torque of C-Axis	Nm	192
Least input increment C-Axis	Grad	0.001
Max. weight between the centers	kg	250
Max. overhanging weight	kg	50/80
Max. center of gravity distance from spindle nose	mm	120
<b>Backspindle version (V6)</b>		
Distance between centers between the 2 spindle noses	mm	800
Travel X-axis	mm	185
Travel Z1-axis	mm	520
Travel Z3-axis	mm	570
Max. turning length	mm	485
Spindle nose	type	A2-5"
Backspindle chuck diameter	mm	170

		CTX 350
Bar diameter	mm	50
Spindel hole diameter	mm	60
Clamping pipe diameter	mm	53
Frontbearing diameter inside	mm	100
Lubrication of spindle bearings		Grease
Power, max. 100 % ED/40 % ED	kW	8,1/9
Speed range 100% ED	rpm	6,000
Speed range 40% ED	rpm	6,000
Rated speed	rpm	1,500/1,280
Torque, max. 100 % ED/40 % ED	Nm	52/67
Type of voltage, no. of range		AC/1
Type of motor		ISM50 syn.
Speed range C-axis	rpm	0-1280
Torque of C-Axis	Nm	57
Least input increment C-Axis	Grad	0,001
Rapid traverses Z3	m/min	30
Max. overhanging weight	kg	20
Max. center of gravity distance from spindle nose	mm	100
<b>Slide</b>		
Rapid traverses X/Y/Z	m/min	30/22.5/36
Feed force X/Y/Z 100 % ED	kN	3.5/3.5/6
Feed force X/Y/Z 40 % ED	kN	4.5/4.5/7.5
Least input increment X/Y/Z	mm	0.001
Measuring system X-axis		Absolute linear scale
Measuring system Y-axis		Absolute linear scale
Measuring system Z-axis (opt.)		Absolute rotary (absolute linear scale)
Ballscrew X/Y/Z-axis, d x h	mm	ø32x10
<b>Turret</b>		
Tool taper Standard	VDI (DIN 69880)	30
No. of tools (opt.)		12 (16)
Tool size	mm x mm	20x20
No. of driven tools (opt.)		12 (8)
Power max. 4,500 rpm (opt.)	kW	6.6 (8) [14/5,500 rpm]
Torque 100 % ED (opt.)	Nm	11 (12) (11)
Torque 40 % ED (opt.)	Nm	14 (17) (14)
Speed range (opt.)	rpm	6,000 (7,000; 8,000; 12,000)
Indexing time 30/180 Grad	s	0.25/0.5
<b>Tailstock version</b>		
Tailstock travel	mm	550
Max. tailstock thrust	daN	400
Morse taper	MK	4
Tailstock handling		Hydraulic
Rapid Z-axis	n/min	4

Highlights
Machine and Technics
Machine components
CNC technology
Automation
<b>Technical data and options</b>

CTX 350

# Technical data

	CTX 350	
	ISM65	ISM50
<b>Cooling</b>		
Cooled units liquid cooled motors	•	•
Cooling system	Heat exchanger	Heat exchanger
Tank capacity	l	7.5
Cooling capacity	kW	1.7
Pump capacity	l/min	16
Pressure	bar	0.7
Viscosity cooling fluid	Stk	1
<b>Cooling (option)</b>		
Options	Package for increased environment temperature	
Cooled units	Mainspindle/Backspindle/Direct Drive Turret	
Cooling system	Active chiller	
Tank capacity	l	17
Cooling capacity	kW	3.3
Pump capacity	l/min	20
Pressure	bar	5
Viscosity cooling fluid	Stk	1
<b>Conveyor</b>		
Tank capacity	l	170
Pump power	kW	0,85 50 Hz
Pump capacity	l/min	20
Pump pressure	bar	5
<b>Coolant (option)</b>		
Typ	Paper filter	Paper filter
Tank capacity	l	600
Pump standard power (vers. 50 Hz)	kW	0.75 (0.75/2.2)
Pump pressure	bar	8 (8/40)
Pump capacity	l/min	20 (20/24)
Filter capacity	um	40
Cooling capacity for option with refrigerator	kW	-
<b>Hydraulic unit</b>		
Tank capacity	l	18
Pump power	kW	2.8
Max. working pressure	bar	55
Pump capacity	l/min	28.5
<b>Pneumatic</b>		
Pressure	bar	6
Capacity	m³/h	10 (max 70)
<b>Axis Lubrication</b>		
Lubrificant type	Grease 000	
Tank capacity	l	2

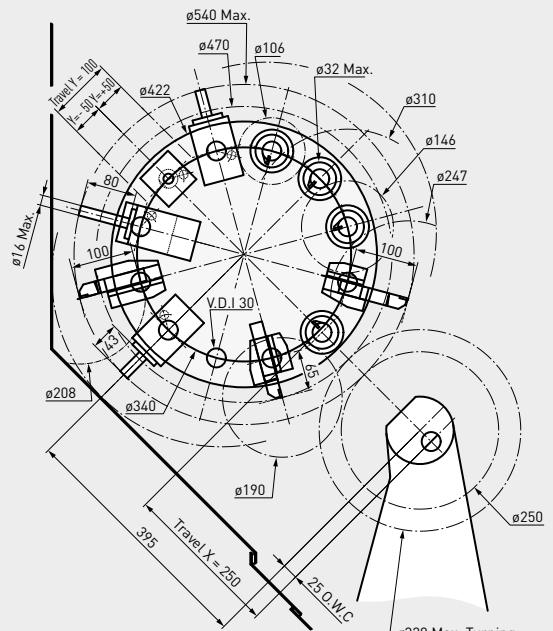
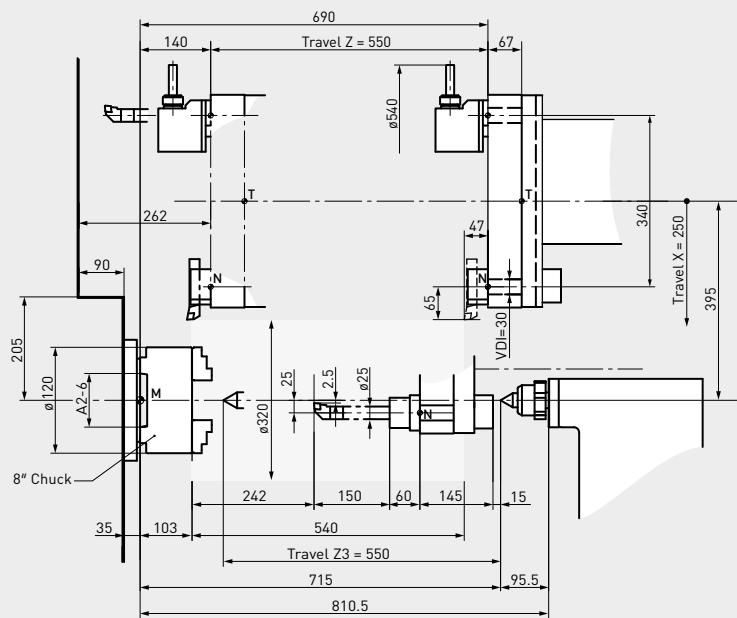
	CTX 350	
	ISM65	ISM50
Electric power	V3/V4	V6
Connection to the mains	L1, L2, L3, N, PE	L1, L2, L3, N, PE
Frequency	50/60	50/60
Apparent nominal power	28	30
Maximum current	40	43
Short circuit current	10	10
Thermal protection	63	63
Fuse protection	63	63
Connection cables	mm <sup>2</sup>	10
<b>Accuracy</b>		
According to ISO 230-2 (T=20+/-2°C)		-
Positioning accuracy A on X/Y/Z1	µm	8/8/10
Positioning accuracy A on C3/C4	arcsec	10
Positioning accuracy A on Z3	µm	-
<b>Machine dimensions</b>		
Main dimensions for setup L/W/H without chip conveyor	mm	2,565 × 2,459 × 1,870
Main dimensions for setup L/W/H with chip conveyor	mm	3,963 × 2,459 × 1,870
Main dimensions for transport L/W/H [on wooden pallet]	mm	4,150 × 2,150 × 2,200
Weight of the machine incl. electrical cabinet	kg	4,600
Noise (DIN 45635, ISO 3740-1980)	dB (A)	< 78

CTX 350

# Working area

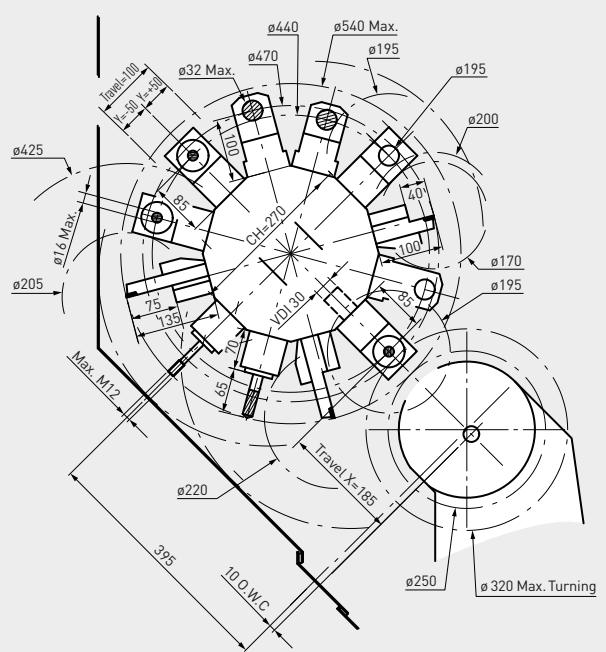
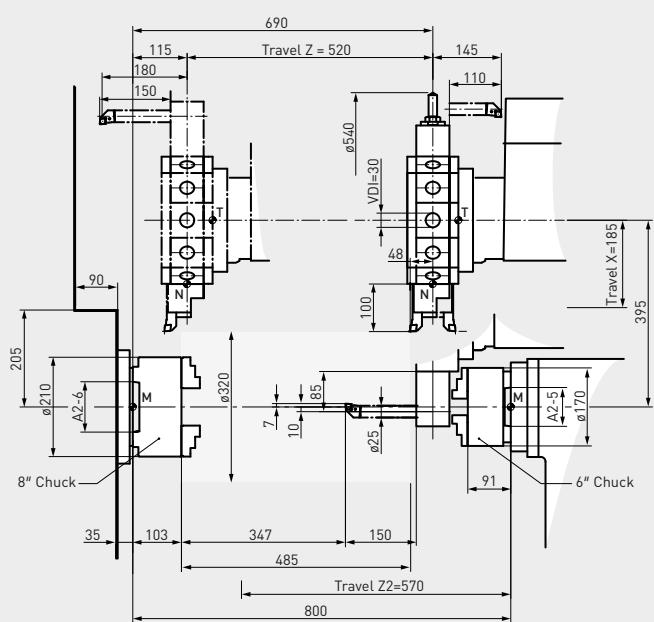
### **Tailstock version (V3-V4)**

(mm)



### **Counter spindle version (V6)**

count  
(mm)

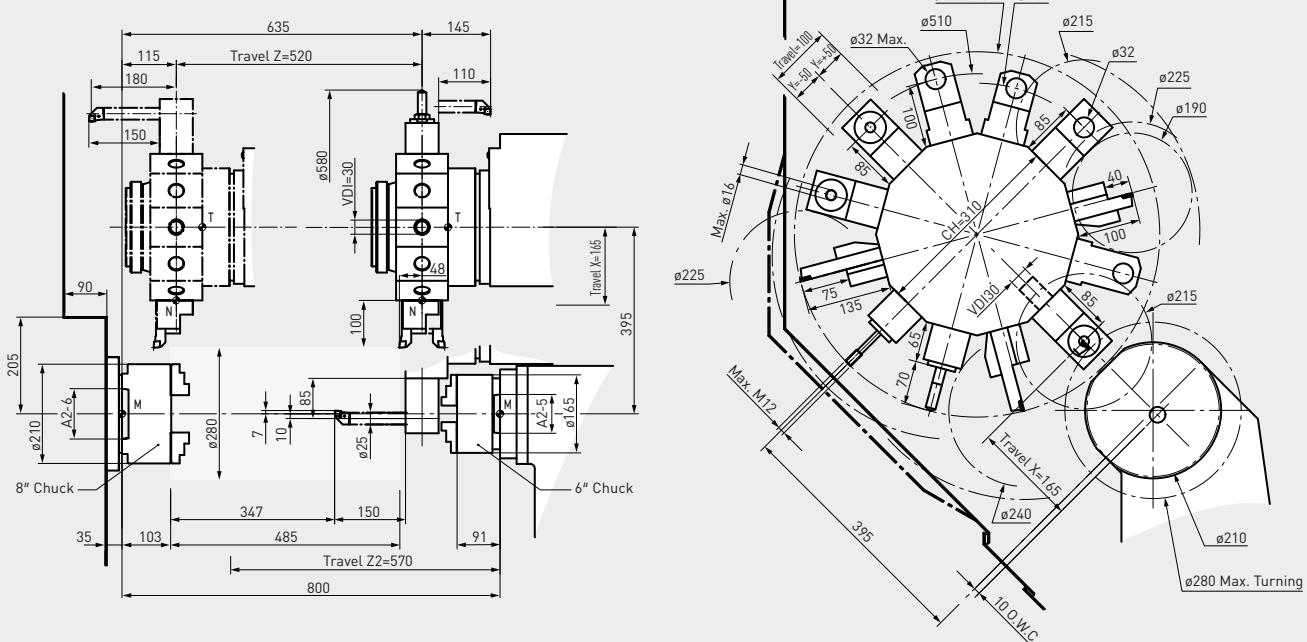


CTX 350

# Working area

## **Counter spindle version (V6) with Direct Drive Turret**

(mm)

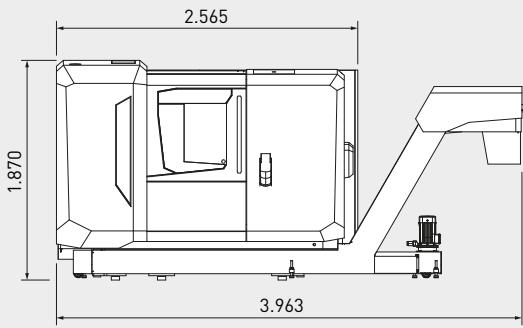


CTX 350

# Floor Plans

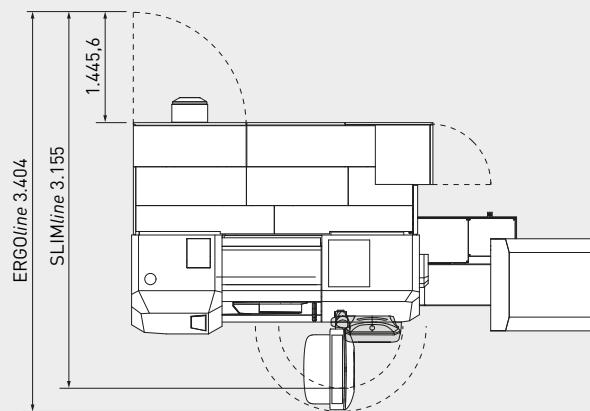
## Front view

(mm)



## Top view

(mm)



# YOUR ONLINE SERVICE MANAGER



## my DMG MORI

The customer portal for service optimization

### MORE SERVICE

Fast support and live status of your service requests

### MORE KNOWLEDGE

All relevant documents can be called up digitally

### MORE AVAILABILITY

The direct line to a service expert with guaranteed prioritized processing, registration in < 3 minutes

Every customer benefits – at no extra charge!

All countries in which myDMG MORI is available can be found at:  
[myDMGMORI.com](http://myDMGMORI.com)



You too can benefit!  
Register now for free:  
[myDMGMORI.com](http://myDMGMORI.com)

## Customer First – Our service promise!

Top quality at fair prices. It's a promise!



### Best Price Guarantee for Original Spare Parts.

Should you get a spare part offered by us at least 20 % cheaper elsewhere, we will refund the price difference up to 100%\*.

\*All information and price advantages for Customer First are available at: [customer-first.dmgmori.com](http://customer-first.dmgmori.com)



### Spindle service at best prices.

The highest level of competence from the manufacturer at new and attractive prices – DMG MORI spindle service!

**Export Control:** To prevent the illegal diversion of the equipment to individuals or nations that threaten international security, from 01/01/2023, every DMG MORI machine may be equipped with an RMS function (Relocation Machine Security). The RMS automatically deactivates the machine when the machine is moved or disassembled. Such deactivation does not take place during regular operation or maintenance.

If the equipment is so-disabled, it can only be re-activated by DMG MORI or some authorized representatives. Reactivation can be ordered via DMG MORI Service. If the machine is deactivated due to a substantial repair activity, this service is free of charge.

DMG MORI may refuse to re-activate the machine if it determines that doing so would be an unauthorized export of technology or otherwise violate applicable export restrictions. DMG MORI shall have no obligation to re-activate such machine and shall have no liability as a result thereof.