

CLX 350
CLX 450
CLX 550
CLX 750

UNIVERSAL TURNING CENTRES

CLX series



**WORLD
PREMIERE
EMO 2019**

A circular graphic with a red and green border. Inside, the text 'WORLD PREMIERE EMO 2019' is in bold. A small '3D' icon is visible on the right side of the circle.

Machine highlights

Modularity

- › Technology and applications
- › Customisation and solutions
- › Control technology

Technical data

CLX SERIES

The new benchmark in universal turning!

4 Models, 2 Controls, in all versions!

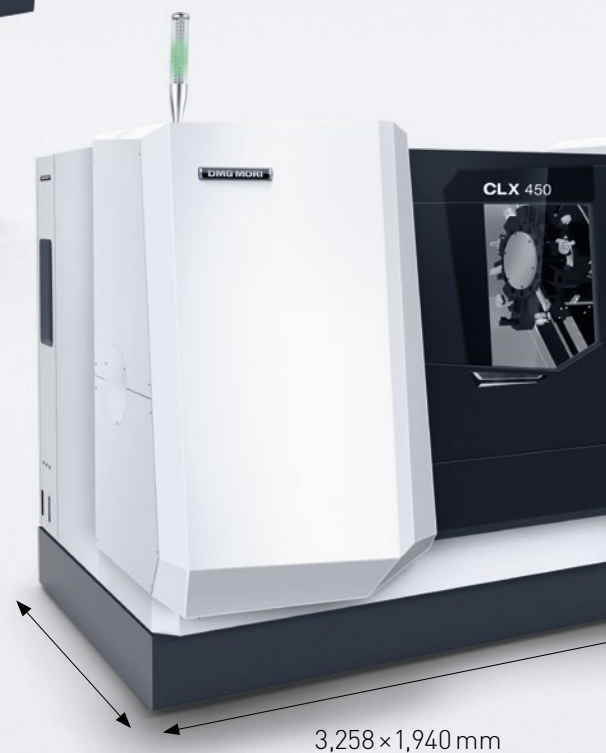
A modern CNC turning centre must be productive, flexible and easy to operate.

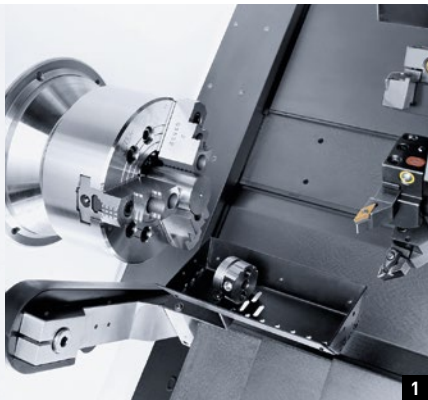
The overall machining performance and the entire range of leading technological performance of DMG MORI opens up with the CLX series – available in four sizes with each 2 different 3D controls. This applies to the modularity and possibility to build up “your own machine” with wide range of options on hardware and software side as well as technological solutions.

CLX 350



NEW:
FANUC
CONTROL
ON TOUCH
PANEL

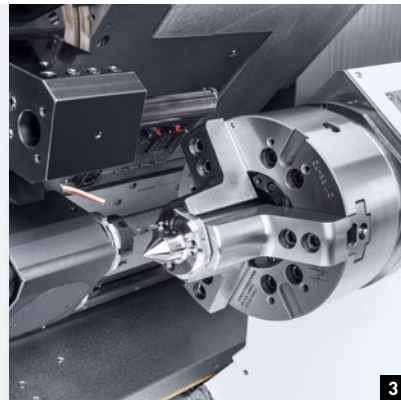




1



2



3



03





- 1: Technology: Variety of applications (p. 4 – 11)
- 2: Automation solutions (p. 12 – 13)
- 3: Customization: Broad range of options (p. 12 – 21)
- 4: Controls technology (p. 22 – 25)

PERFECT
3D CONTROLS:
**SIEMENS OR
FANUC**



CLX 750



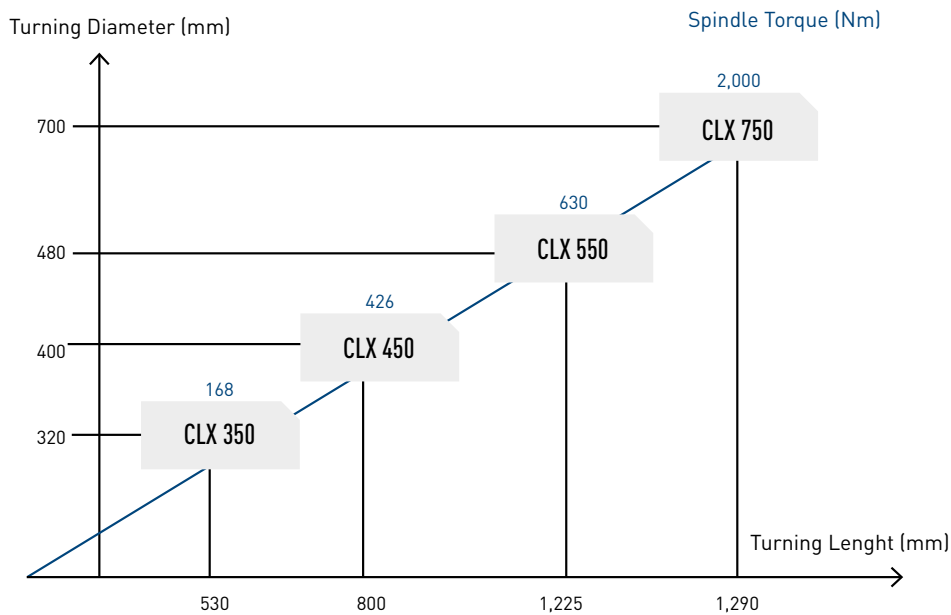
PERFECT 3D CONTROL TECHNOLOGY

- + 19" DMG MORI SLIMline multi-touch control panel and **SIEMENS**
- + 19" DMG MORI SLIMline touch control panel and **FANUC**

HIGHLIGHTS

- + **4 models and sizes – with 2 controls** – for any kind of application – as turning, milling, y-axis and sub-spindle specification!
- + **Direct measuring system in standard** for the highest precision: in X-axis for V1 and V3 version
in X/Y-axis for V4 and V6 version
- + **IoTconnector in standard** – ready for digitized and connected production processes
- + **Compact design** with large working area for the machining process of wide parts variety
- + **Bar capacity:**
 - CLX 350 – $\varnothing 65$ mm in standard
 - CLX 450 – $\varnothing 80$ mm in standard
 - CLX 550 – $\varnothing 80$ mm in standard ($\varnothing 102$ as an option)
 - CLX 750 – $\varnothing 127$ mm partial in standard (complete as option)
- + **Easy to automate** thanks to the optional robot or bar feeder interface according to DMG MORI standard
- + **Flexible and easy to operate automation solutions** from one hand with **gantry loader GX 6** or **Robo2Go**

FULL MODULARITY – The Powerful CLX Series from DMG MORI



Customize your machine with a huge variety of hard- and software options as well as innovative technology cycles!

		CLX 350	CLX 450	CLX 550	CLX 750
Highly dynamic spindle					
Maximum power (40 % DC)	kW	16.5	25.5	33	46
Maximum torque (40 % DC)	Nm	168	426	630	2,000
Maximum spindle speed	rpm	5,000	4,000	3,250	2,000

TECHNICAL DATA

		CLX 350	CLX 450	CLX 550	CLX 750
Highly dynamic spindle					
Swing over bed – ø	mm	580	700	700	950
Max. turning diameter – ø	mm	320/250***	400/300***	480/425*	700
Travel in Z-axis	mm	540	830	1,240	1,300
Bar passage – ø	mm	65	80	80/102**	127
Nominal chuck size** – ø	mm	210	250	210–315	400/ 500
Tool interface		12×VDI 30	12×VDI 40/6×BT	12×VDI 40/6×BT	12×VDI 50/6×BT/ 12×VDI 40 (V6)
Compact footprint	m²	4.9	7.3	7.4	8.9

*V4 version with Y axis ** Optional *** Recommended

CLX SERIES

The CLX – New machining dimensions thanks to a wide range of technologies

High productivity and broad technological possibilities of CLX series allow the complete machining process of complex parts and all that thanks to the counter spindle and Y axis. A compact design with a big working area and a wide range of options and technological solutions allow to configure the machine according to specific customer requirements. Wide selection of chucks enable to meet all technological needs. The CLX series offers the possibility to assemble chucks in the diameter range from 7 to 16 inches for the main spindle depending on the machine size. A combination with the counter spindle creates a diverse spectrum of configuration of the CLX machines. Furthermore, there is a possibility of adjusting of the clamping system to the specific requirements of the customer.

CHUCK SIZES FOR THE CLX MACHINES

Size	CLX 350		CLX 450		CLX 550		CLX 750	
	main spindle	counter spindle	main spindle	counter spindle	main spindle	counter spindle	main spindle	counter spindle
169		•						
175		•						
210	•			•		•		
215	•		•					
225	•		•					
250			•			•		
255			•		•	•		
260			•		•			
275					•			
315			•		•	•	•	•
320					•			
400							•	
500							•	

Optional part catcher for parts up to:

CLX 350 – ø 65 × 200 mm
and weight 3 kg

CLX 450 – ø 80 × 200 mm
and weight 4 kg

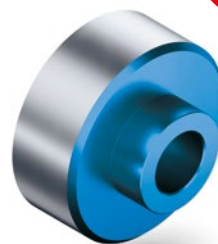
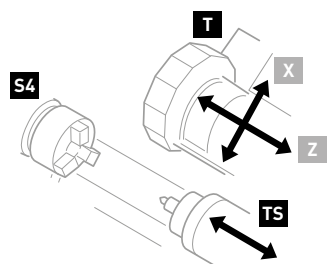
CLX 550 – ø 80 × 200 mm
and weight 4 kg

CLX 750 part catcher as
[special option]

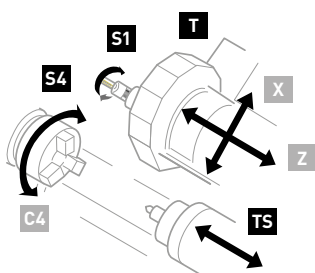
SPECIFICATIONS ACCORDING TO MACHINING

4 CLX MODELS,
2 CONTROLS, IN
ALL VERSIONS!

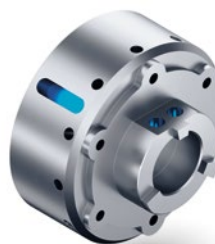
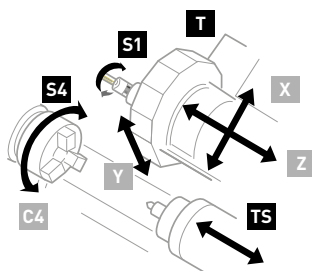
V1 version = turning



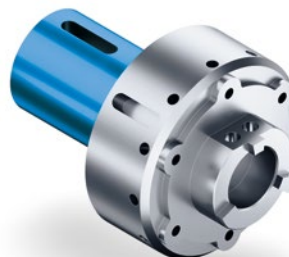
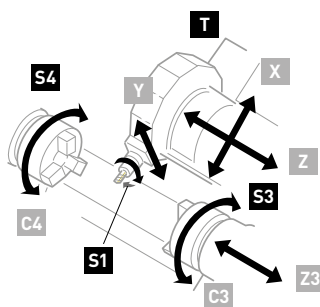
V3 version = turning + milling



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

Modularity

› Technology and applications

› Customisation and solutions

› Control technology

Technical data

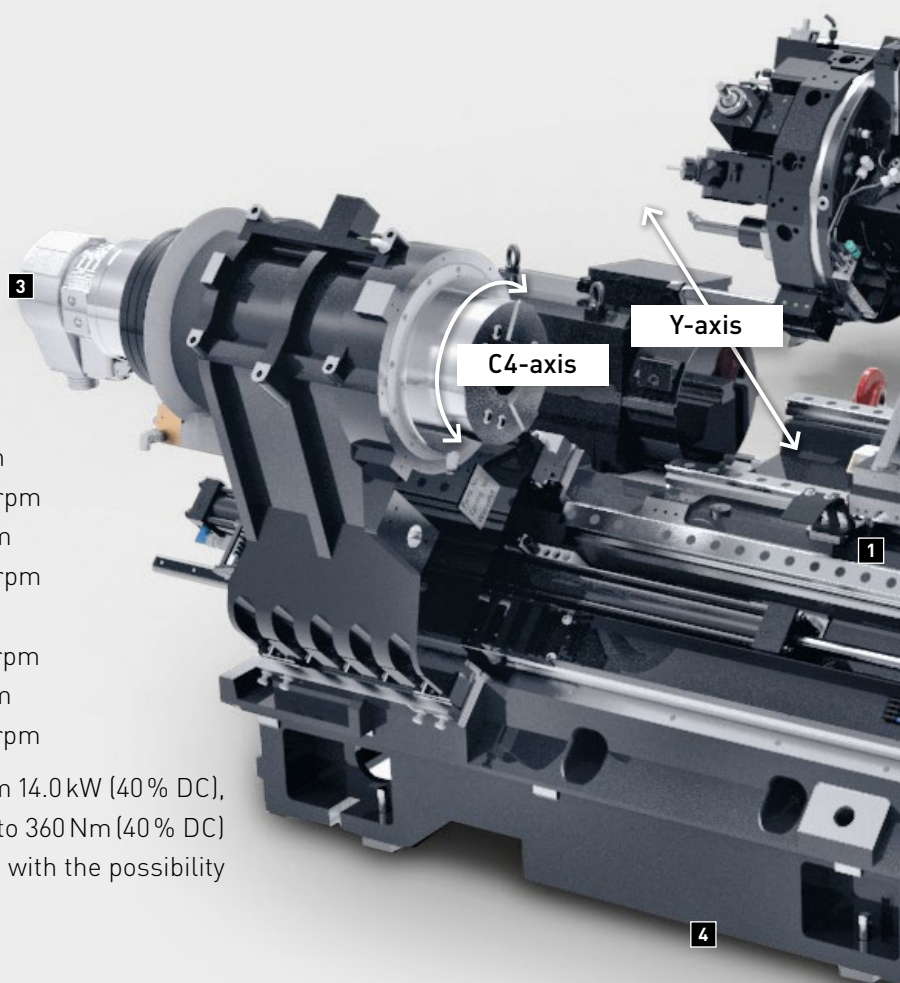
CLX SERIES

Rigid cast iron bed with thermally stable headstock and linear guideways

The CLX series is based on an FEM optimised cast iron bed for the best stiffness and vibration characteristics. Ball screws of the highest quality and linear guideways were combined to meet the highest standards in production. The dynamic main spindle supported by three bearings, with a high bar capacity, ensures high rotational precision and long service life. The programmable tailstock guarantees flexibility and rapid processes in your production. The low connected load, efficient power consumption and energy recovery ensure efficient use of energy.

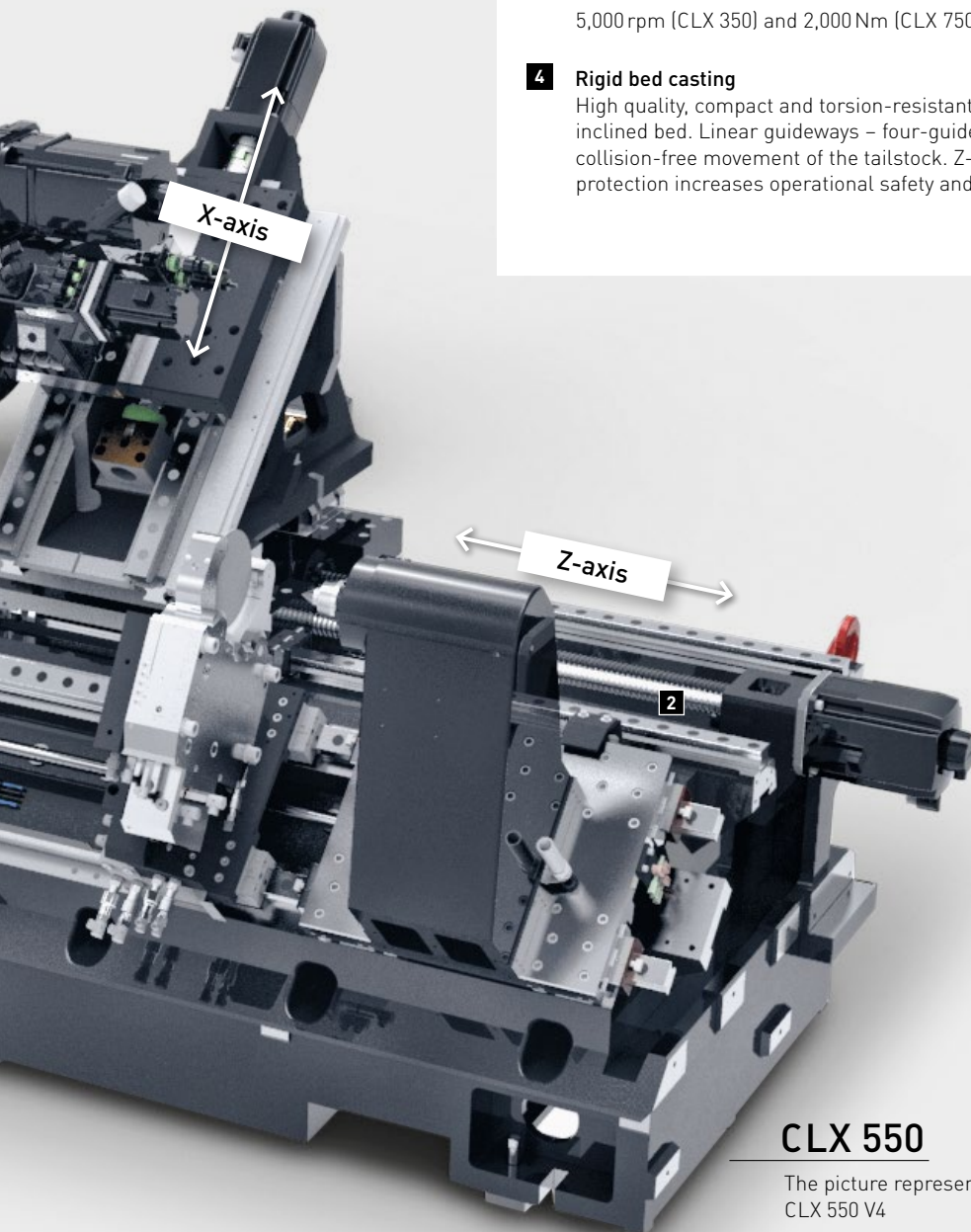
HIGHLIGHTS

- + Complete machining of complex parts thanks to **Y-axis and sub spindle**
- + **Highly dynamic main spindle drive:**
 - CLX 350 – 16.5 kW (40 % DC) and 168 Nm (40 % DC) with max. speed up to 5,000 rpm
 - CLX 450 – 25.5 kW (40 % DC) and 426 Nm (40 % DC) with max. speed up to 4,000 rpm
 - CLX 550 – 33 kW (40 % DC) and 630 Nm (40 % DC) with max. speed up to 3,250 rpm
 - CLX 750 – 46 kW (40 % DC) and 2,000 Nm (40 % DC) with max. speed up to 2,000 rpm
- + ISM 36, ISM 52, ISM 76 with power from 14.0 kW (40 % DC), to 32 kW (40 % DC), torque from 62 Nm to 360 Nm (40 % DC) and speed from 3,250 rpm to 5,000 rpm with the possibility for rear-face machining



CONSTRUCTION AND DESIGN BENEFITS

- 1 Optimized chip fall**
through 45° covering in working area
- 2 Linear guides**
in the X/Y and Z-axes to guarantee high machine dynamics
- 3 Highly dynamic spindle drive** with up to
5,000 rpm (CLX 350) and 2,000 Nm (CLX 750)
- 4 Rigid bed casting**
High quality, compact and torsion-resistant 45° cast iron
inclined bed. Linear guideways – four-guideway design allows
collision-free movement of the tailstock. Z-axis guideway
protection increases operational safety and service life.



CLX 550

The picture represents the
CLX 550 V4

CLX SERIES

Highest productivity for any kind of application and industry

The new generation of the basic turning centres with wide range of options presents a new dimension in possibilities to equip the machines relevant for any production demand. Variety of these unique options with the new CLX series increases the range of fields for different applications.



HIGHEST LEVEL OF PRECISION AND ACCURACY THANKS TO **DIRECT MEASURING SYSTEMS IN STANDARD**

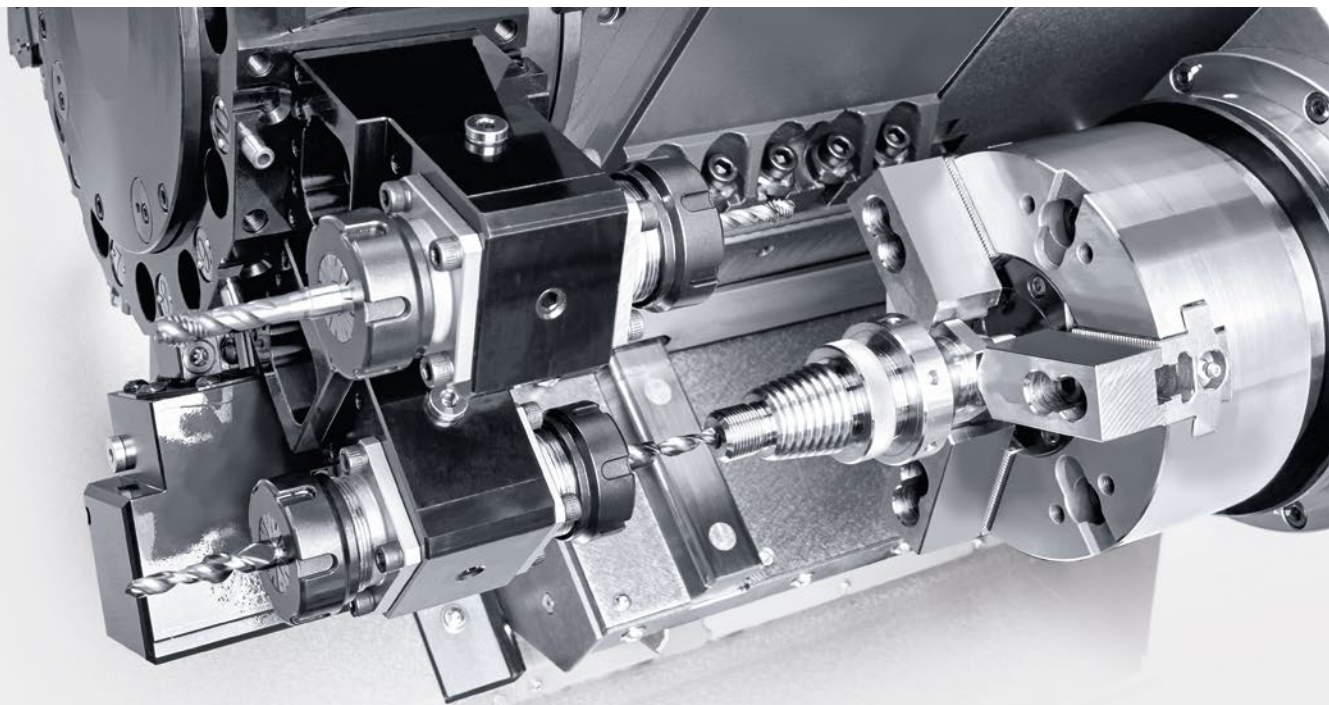
To meet increasing expectations of our customers, all CLX machines are now equipped with direct measuring system on the X and Y axes as a standard. Implementation of reliable solutions from MAGNESCALE guarantees enhanced accuracy of the machining process as well as improvement of the process stability. The use of the MAGNESCALE which has the thermal expansion coefficient equivalent to the machine casting ensures high-accuracy machining.



MACHINING PARAMETER*

		CLX 350	CLX 450	CLX 550	CLX 750
Rough turning					
Cutting speed Vc	m/min	250	250	250	250
Feed	mm/rev	0.4	0.5	0.5	0.5
Cutting depth ap	mm	3.5	5	7	10
Finishing turning					
Cutting speed Vc	m/min	320	320	320	320
Feed	mm/rev	0.12	0.12	0.12	0.12
Surface roughness Ra	µm	0.8	0.8	0.8	0.8
Tool radius	mm	R 0.8	R 0.8	R 0.8	R 0.8
Drilling					
Cutting speed	m/min	160	160	160	160
Feed	mm/rev	0.16	0.16	0.16	0.16
Tool diameter – ø	mm	45	53	60	100

*for material Steel C45



1



2



3



4



5



6

1: Chain Wheel

Industry: Machinery
Material: Steel 15CrNi6
Dimensions: $\varnothing 100 \times 115$ mm
Machining time: 14.5 min

2: Balancing flange adapter

Industry: Machinery
Material: Steel C45
Dimensions: $\varnothing 160 \times 70$ mm
Machining time: 30 min

3: V-Pulley

Industry: Machinery
Material: Steel ETG88
Dimensions: $\varnothing 150 \times 150$ mm
Machining time: 23 min

4: Chuck adapter

Industry: Machinery
Material: Steel C45
Dimensions: $\varnothing 260 \times 60$ mm
Machining time: 35 min

5: Nozzle

Industry: Engineering
Material: Steel 1.4305
Dimensions: $\varnothing 36 \times 35$ mm
Machining time: 25 min

6: Connector

Industry: Automotive
Material: Steel C45
Dimensions: $\varnothing 80 \times 95$ mm
Machining time: 9 min

CLX SERIES

Automation solutions for CLX Series

Robo2Go 2ND GENERATION



CLX 350 with Robo2Go

With the Robo2Go solution, developed by DMG MORI, you can equip your CLX machines with an easy and flexible robot solution. The Robo2Go ensures easy programming via the control panel and has a high acceptance by modern working environment – a fenceless system with ergonomic access to the machine. It has easy teach-in functions for different workpieces and guarantees a flexible setup at multiple turning machines. The Robo2Go is available for maximum load capacities of 10, 20 and 35 kg*.

*max. workpiece weight depends on its length and gripper type

	Robo2Go	GX 6	Customized solutions
CLX 350	• ¹	• ²	•
CLX 450	•	–	•
CLX 550	•	–	•
CLX 750	–	–	•

1: CLX 350 can be integrated only with 10 and 20 kg version of Robo2Go

2: Available only for CLX 350 with SIEMENS control

GX 6



CLX 350 with GX 6

The GX 6 was developed inhouse and fits specifically and perfectly to the CLX universal turning machines from DMG MORI. With a stocker containing 10 pallets and each pallet up to 70 kg, combined 3-finger centric grippers with a rotary unit for perfect workpiece handling up to 6 kg, this gantry solution is the next step to increase your productivity of universal turning machines. It also includes optical workpiece detection sensors and an automated roof safety system securing perfect accessibility to the machining area.

[only with 19" DMGMORI SLIMline multi-touch control panel and SIEMENS]

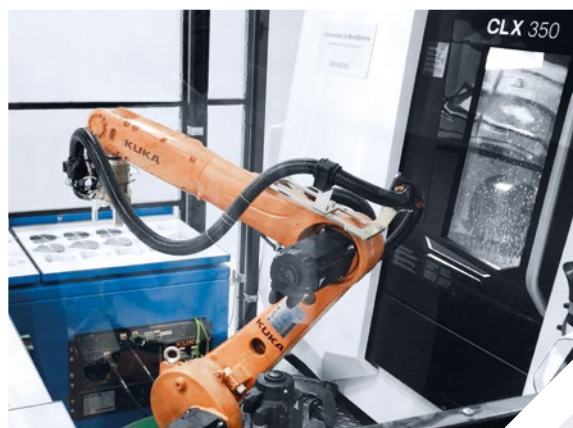
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CUSTOMIZED AUTOMATION SOLUTIONS

Our technical know-how and experience as well as its strong engineering department can create customer specific solutions – however you want to automate your CLX machines, or combine it with already installed DMG MORI machines (no matter if turning or milling). We will work out your customized solution, incl. peripherals, tooling, fixtures, measuring, etc.

Available for all CLX machines

CLX 350 with individual robot solution



CLX SERIES

Increase your productivity – with DMG MORI Technology Cycles!



ALTERNATING SPEED*

- + Easy application due to 3 parameters and without additional sensors
- + Vibration prevention by means of speed adaptation
- + Application for both the main and the counter spindle



RETRACTION CYCLE*

- + By pushing the associated key the X-axis and the Y-axis travel to the positive end positions for external machining
- + Ideally suited to prepare the working space for set-up; alternatively also as emergency

NEW



MULTI-THREADING 2.0*

- + On-Point Threading
- + Free definition of contours, pitches and gears possible
- + Creating large transmission or special threads, which cannot be produced with simple thread chasing

NEW



COUNTER SPINDLE TIP*

- + Perfect combination of 6-side complete machining and tailstock function
- + Automatically load and unload a tailstock centre into the chuck of the counter spindle via the turret
- + Support of long 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)
- + Position-locking the spindle with the tip leads to increased process safety

NEW

* only for SIEMENS control



EASY TOOL MONITORING 2.0*

- + Prevention damage due to breakage or tool overload
- + Sensorless with automated learning of load limits
- + For turning, milling and drilling
- + New: Powerful algorithm for efficient monitoring after the first workpiece
- + Save the monitoring limits for each tool and every cutting edge in the program

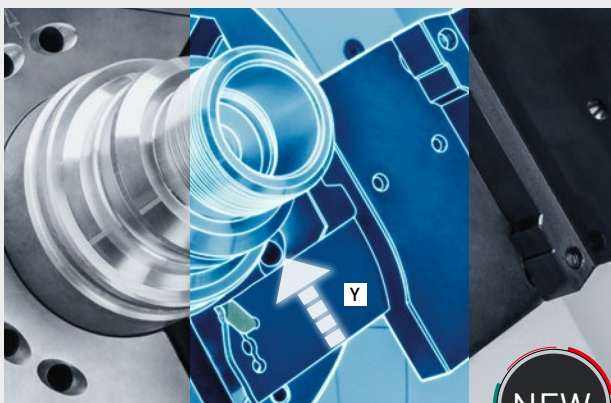


NEW

KEYWAY BROACHING*

- + Structured input parameters for the groove geometry, the tool and the machining strategy
- + Inner and outer grooves in any position and number freely adjustable
- + Easy compensation of tool displacement
- + Calculation of residual strokes based on selected machining strategy

15



NEW

Y-AXIS PARTING*

- + Higher stability due to optimal force transmission in the longitudinal direction of the tool holder
- + Generation of tool feed in the Y-direction for parting off components at a push of a button
- + Compatible with the standard cycle CYCLE92 (Part off cycle), so that the operator can program as usual (ShopTurn and DIN/ISO)



NEW

MULTITOOL*

- + Efficient use of multiple-tip turning tools with more than one cutting edge on Turn & Mill
- + Several twin tools on one main tool holder
- + Reduces tool change times
- + Saves tool magazine space

Modularity

- › Technology and applications
- › Customisation and solutions
- › Control technology

CLX SERIES

Ready for digitized production – with *IoTconnector* in standard!

IoTconnector:

- + In standard of all CLX/CMX machines
- + **DMG MORI NETservice and MESSENGER** preinstalled
- + **Quick and easy installation** in the control cabinet via LAN cable
- + Specially preconfigured for your machine prior to delivery via the machine's serial number
- + Standard interfaces allow a fast and efficient data exchange
- + **Integrated firewall** with automatic updates guarantees maximum protection for your machine

SERVICEcamera:

- + **Direct livestream** to hotline via *NETservice*
- + **Plug-and-Play function** thanks to preconfiguration for *IoTconnector*
- + **Quick and secure** 5G WiFi transmission
- + Splashproofed housing
- + Integrated magnet for mounting camera
- + Integrated light and laser pointer

NETservice

- + **Shorter waiting times**, as calls are directly routed to the next available staff member
- + **Higher resolution rate** due to access to IPC and NC
- + **Maximum data security**
- + Optional connection of the *SERVICEcamera*: More efficient problem resolution due to live-stream (video/audio/image) from the machine directly to the DMG MORI service expert
- + **Multi-user conference** = Interconnection of different DMG MORI specialists for faster joint problem-solving
- + **Also for existing machines** by using a Retrofit-Kit

IoTconnector
IN STANDARD –
READY FOR
DIGITIZED
PRODUCTION
PROCESSES





DIGITIZATION

FAMOT DIGITAL FACTORY – Digitized production of the CLX and CMX

DMG MORI is supporting its customers with their digitization operations by providing end-to-end solutions. DMG MORI is demonstrating how a transformation such as this can be implemented in specific terms at the plant of its subsidiary, FAMOT Pleszew Sp. z o.o. in Poland.

We have consistently digitized our FAMOT production plant in Poland throughout. The entire value chain is now fully networked for the first time using modular products from ISTOS, DMG MORI Software Solutions and WERKBLiQ. We presented this open connectivity and intelligent workflows and processes to an expert audience at the Grand Opening on 8th of October 2018.

The FAMOT “Digital Factory” acts as a model worldwide for our customers and suppliers, and is also setting new standards at DMG MORI. We are setting a good example and are convincing, both internally and externally, with the brilliance of our digital showcase factory.

FAMOT was established in 1877 as a small workshop producing castings and simple agricultural machines. The first machine for metal cutting was manufactured in 1964. In 1993 the factory became property of a&f Stahl- und Maschinenbau GmbH in Würzburg, Germany. Since 1999 FAMOT belongs to the DMG MORI Group and is the biggest machine tool manufacturer in Poland and Central Europe.

FAMOT’s development as a digital factory is an example of production of innovational, high-tech CNC machines designed in its own Research & Development Department. Thanks to the latest investments, until 2020 the total under roof area of factory will increase to 50,000 sqm. (+20,000 sqm.), thereof assembly 6,500 sqm., machining 14,700 sqm. The factory has an increased produced capacity of 2,000 machines per year. The CLX-line machines are parallel assembled in Graziano plant in Italy, that has a production capacity of 700 units per year on a developed area of 26,000 sqm. Therefore, both plants have acquired a strategic importance within the DMG MORI Group.



The CLX series is produced in DMG MORI’s factories GRAZIANO, Tortona (ITA) and FAMOT, Pleszew (POL).

GRAZIANO Tortona S. r. l.
Via Wilmer Graziano 15
15057 Tortona, Italy

FAMOT Pleszew Sp. z o.o.
Fabryczna 7 Street
63–300 Pleszew, Poland

Machine highlights
Modularity
› Technology and applications
› Customisation and solutions
› Control technology
Technical data

CLX SERIES

Selected options and packages

	CLX 350	CLX 450	CLX 550	CLX 750
Controls				
DMG MORI SLIMline multi-touch control 19" / Operate 4.8 on SIEMENS	•	•	•	•
DMG MORI SLIMline touch control 19" / FANUC iSeries with iHMI	•	•	•	•
Versions				
V1 universal turning center with fixed tools	•	•	•	•
V3 universal turning center with driven tools and C-axis	•	•	•	•
V4 universal turning center with driven tools, C-axis and Y-axis	•	•	•	•
V6 universal turning center with driven tools, C-axis, Y-axis and counter spindle	•	•	•	•
Options for main spindle				
Clamping with balanced pressure for main spindle	•	•	•	•
External chuck flushing for main spindle	•	•	•	•
Reduction tube for main spindle	Available size: D5 – D60 mm	Available size: D5 – D76 mm	Available size: D5 – D95 mm	Available size: D10 – D120 mm
Options for tailstock				
Automatic NC tailstock	•	•	•	–
Devices for shaft machining				
Steady rest slide for precise shaft machining	–	•	•	•
Preparation for the steady rest	–	•	•	•
Steady rest holder for one steady rest	–	•	•	•
Self-centering hydraulic steady rest SMW SLU-X2	–	•	•	–
Self-centering hydraulic steady rest SMW SLU-X3.1	–	•	•	–
Self-centering hydraulic steady rest SMW SLU-X3.2	–	•	•	–
Self-centering hydraulic steady rest SMW-SLU-4.1	–	–	–	•
Self-centering hydraulic steady rest SMW-SLU-5.1	–	–	–	•
Self-centering hydraulic steady rest SMW-RX5	–	–	–	•
Quick change system for steady rest	–	•	•	–
Options for counter spindle				
Clamping with balanced pressure for counter spindle	•	•	•	•
External chuck flushing for counter spindle	•	•	•	•
Pneumatic workpiece ejection device for counter spindle with internal coolant supply for chuck flushing	•	•	•	–
Auxiliary tailstock function for the counter spindle	•	•	•	•
Measuring / Monitoring				
Manual tool measuring probe made by MARPOSS	•	•	•	•
Direct measuring system for Z-Axis Including air purge	•	•	•	•

	CLX 350	CLX 450	CLX 550	CLX 750
Cooling media/chip removal				
High pressure pump 12 bar	•	•	•	•
Reinforced coolant pump 5 – 20 bar	•	•	•	•
Rear chip conveyor instead of chip tank	•	•	–	–
Coolant – Air blast changeover through the turret switchable via M-function	•	•	•	•
Coolant spray gun 5 bar	•	•	•	•
Preparation for oil-mist extractor unit	•	•	•	•
Oil mist extractor	•	•	•	•
Double cartridge filter for coolant	•	•	•	•
Automation				
Bar feeder interface according to DMG MORI standard	•	•	•	–
Machine preparation for Robo2Go	•	•	•	•
Automatic Front Door	•	•	•	•
Machine preparation for Gantry Loader GX 6	•	–	–	–
Bar package & interface				–
Hinged band chip conveyor	•	•	•	•
Parts catcher	•	•	•	–
Signal lamp with 4 colours	•	•	•	•
Connection for bar feeder or bar magazine (DMG MORI standard)	•	•	•	–
Chip removal package				
Hinged band chip conveyor	•	•	•	•
Signal lamp with 4 colours	•	•	•	•
Presetting package				
Tool measuring probe (manual)	•	•	•	•
Hinged band chip conveyor	•	•	•	•
Signal lamp with 4 colours	•	•	•	•
Automation package				
Interface for robot (DMG MORI Standard)	•	•	•	•
Automatic front door	•	•	•	•
Automatic chuck flushing	•	•	•	•
Tropical package				
Active coolant unit for the electrical cabinet	•	•	•	•

• available – not available

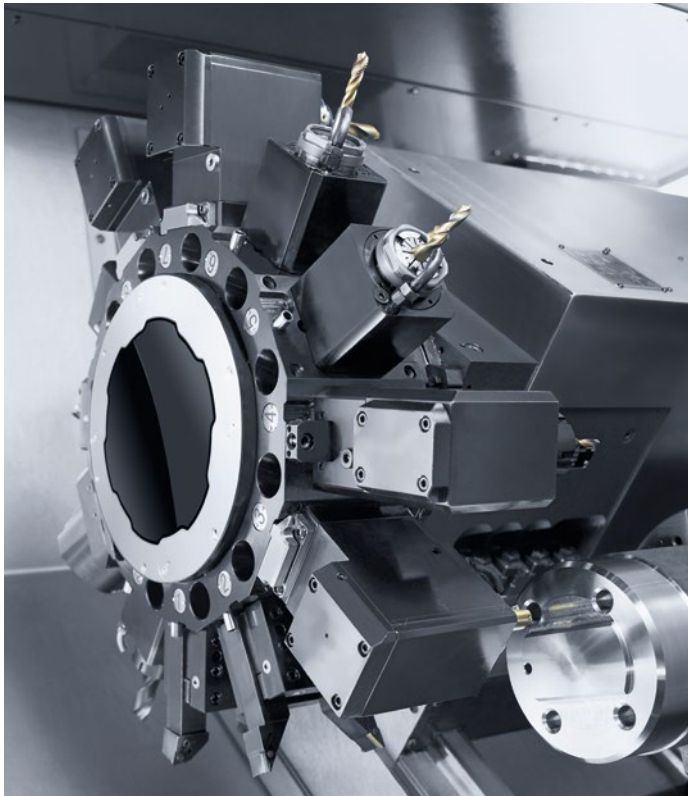
CLX SERIES

Technological solutions



MILLING OPERATIONS ON TURNING MACHINE

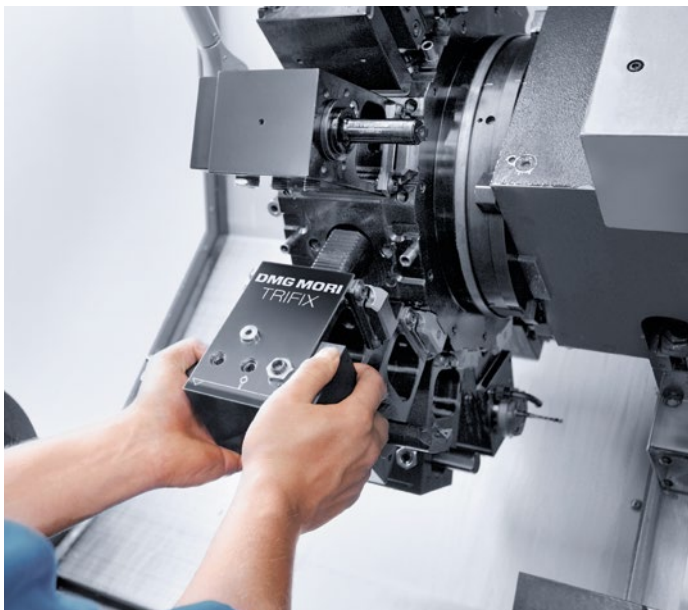
Y-axis with travel range ± 40 mm (CLX 350) and ± 60 mm (CLX 450, CLX 550) and ± 80 mm (CLX 750) superior milling operations, e.g. for complete lateral surface machining.



TRIFIX®: SET UP QUICKLY, ACCURATELY AND WITH VDI

- + Standard for all star turrets
- + Tool set-up time of <30 seconds thanks to VDI with TRIFIX®
- + 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
- + Use of large tools with a gear reduction of up to 4:1 thanks to the compact design of the turret

TRIFIX® is available only for machines in V6 version with counter spindle



CLX SERIES

DMG MORI SLIMline

multi-touch control for highest efficiency and reliability

The new DMG MORI 19" SLIMline, equipped with Multi-Touch control with Operate 4.8 on SIEMENS or Touch control with Fanuc iSeries with iHMI is completed with 3D control technology programming function.

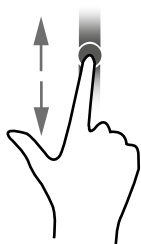
The practical and ergonomically optimised 19" multi-touch display, with its maximised resolution and 45 degree swiveling range, offers decisive user benefits and represents the next advanced step for a modern user interface.

Thanks to the 3D control technology, you can simulate the machining in advance – this is what state-of-the-art and user-friendly workplaces look like nowadays! Additionally, the expanded CNC memory capacity up to 4 GB (*) and additional memory 8 GB on DMG MORI SMARTkey greatly improved the control system features.

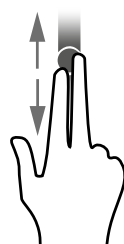
SINUMERIK OPERATE – ADDITIONAL FUNCTIONS VARIOUS – SMART OPERATION

**TAP**

Select window or Select object (e.g. NC block)

**FLICK**

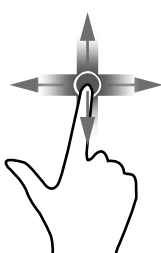
Scroll in lists (e.g. programs or tools, zero points) Scroll in files (e.g. NC programs)

**FLICK WITH TWO FINGERS**

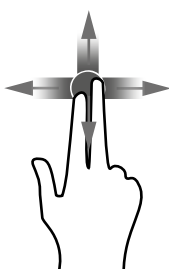
Page-scrolling in lists (e.g. NPV) Page-scrolling in files (e.g. NC programs)

**FLICK WITH THREE FINGERS**

Scroll to the start or end of lists. Scroll to the start or end of files

**PAN**

Move graphic contents (e.g. simulation, mold making view)

**PAN WITH TWO FINGERS**

Rotate graphic contents (e.g. simulation, mold making view)

**PINCH**

Zoom-in graphic contents (e.g. simulation, mold making view)

**SPREAD**

Zoom-out graphic contents (e.g. simulation, mold making view)



- + 19-inches multi-touch display
- + 66% more pixels
- + 45° swivel range
- + expanded memory capacity
- + 3D control technology

19" DMG MORI Multi-Touch Control Panel and SIEMENS

MORE EFFECTIVE OPERATIONS

- + **Better workflow**, more efficiency
- + **Quick and convenient** access to parameters and user data
- + **Expanded memory capacity***
- + **Program selection**: expansion on local drive/USB/Network
- + **Multi tasking machining**: extension drilling cycle for drilling/piercing; program guide with new deep hole drilling technology
- + **Execution from external storage**: display and storage of additional file formats as HTML/PDF/BMP/JPEG/DXF also on the NC
- + **Advanced simulation**: workpiece stock definition by clamping; simultaneous recording
- + **DMG MORI SMARTkey**: Personalised authorisation and additional 8GB USB memory

* SIEMENS 840 D – 4 GB

MORE COMFORTABLE USE

- + **Improved overview with 19-inches screen**: maximized resolution and innovative comfort of intuitive use with a unique range of functions
- + **3D control technology**: workpiece and machining simulation with touch operations
- + **Flexible software keyboard**: integrated into multi-touch display
- + **Effective and safe machining** with content access button on the panel
- + **Optimised ergonomics**: with 45° swivel range
- + **Simplified process**
- + **Reliable touch control** with proven user interface
- + **Optimization of the elements** on the screen
- + **Reliable and scratch-resistant** operating surface

Modularity

- › Technology and applications
- › Customisation and solutions
- › **Control technology**



CLX SERIES

The new revolutionary DMG MORI SLIMline touch-control with FANUC iHMI

The new DMG MORI 19" SLIMline touch-control with FANUC iSeries with iHMI, completed with 3D control technology programming function. 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. Thanks to the 3D control technology, you can simulate the machining in advance – this is what state-of-the-art and user-friendly workplaces look like nowadays!

WORKPIECE WORKFLOW FROM PLANNING TO THE FINISHED PART

PLANNING

- + Tool Manager
- + Calender
- + Robo2Go Operation
- + PC Operation

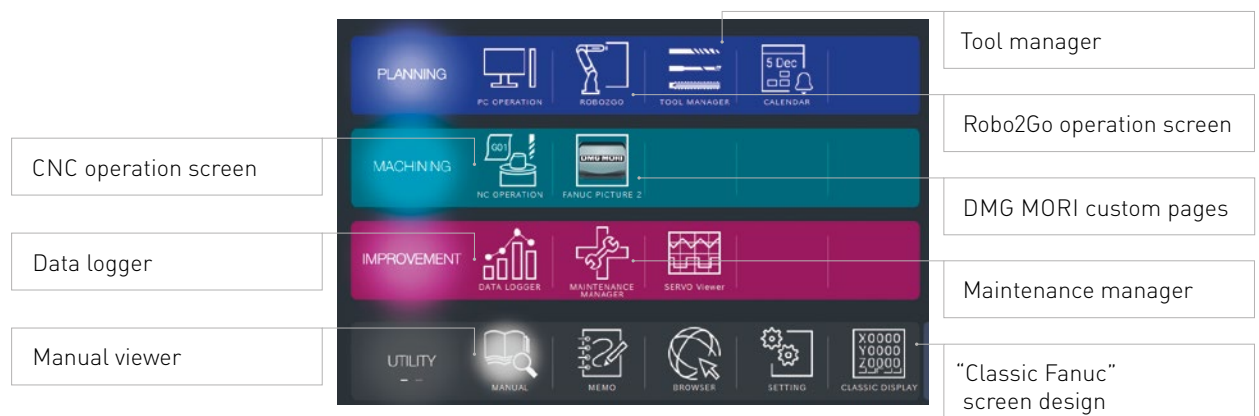
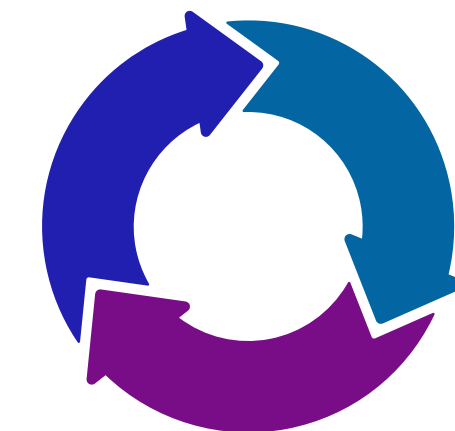
MACHINING

- + CNC Operation
- + DMG MORI custom pages
- + Machining Simulation
- + Machining Measurement Cycle

SHOP FLOOR OPERATION

IMPROVEMENT

- + Maintenance Manager
- + Data logger
- + SERVO Viewer



Switchable Layout – Programming on the classic FANUC screen possible!





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

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

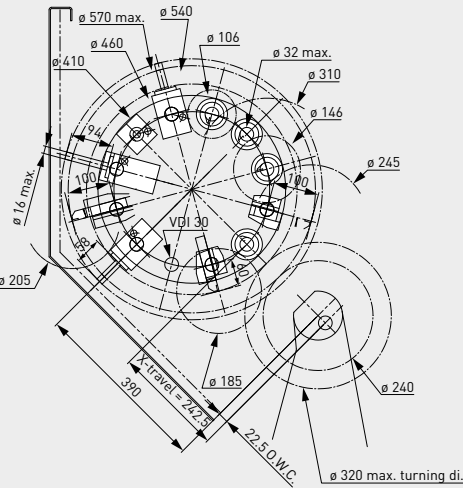
*FANUC iSeries – 2 MB

25

HIGHEST FUNCTIONALITY

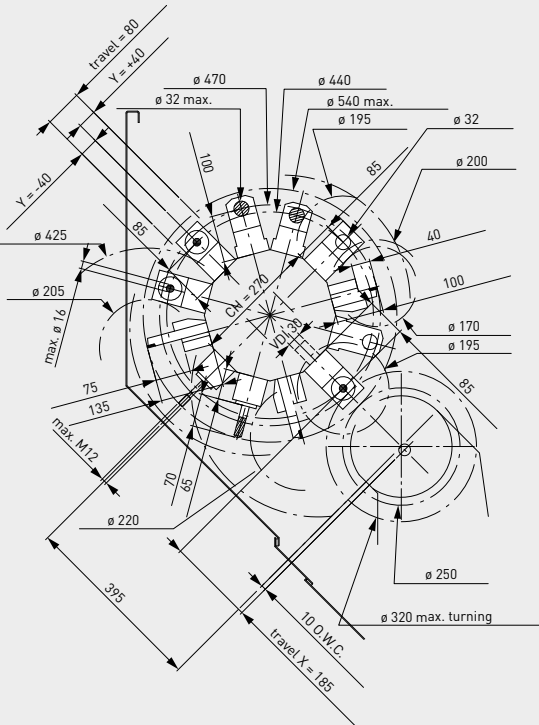
- + **IMPROVED OVERVIEW 19" SCREEN**
19" Capacitive display with touch function
- + **STATUS CONTROL**
Status Icon Application (DMG MORI Custom Application)
- + **ADVANCED INTERACTION**
Standard FANUC CNC screen section (iHMI design)
- + **FLEXIBLE SOFTWARE KEYBOARD**
ASCII touch keyboard – Switchable layouts
- + **DMG MORI SMART KEY**
Personalized authorization and additional 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
- + **3D CONTROL TECHNOLOGY**
Workpiece and machining simulation with touch operations

CLX 350 V1/V3
[mm]

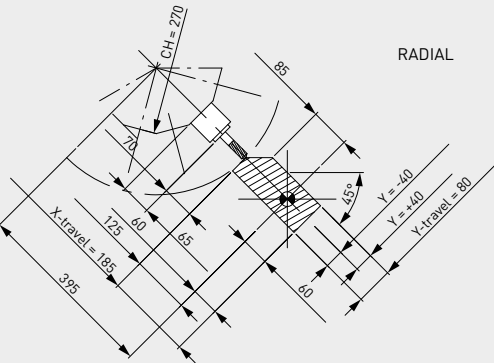
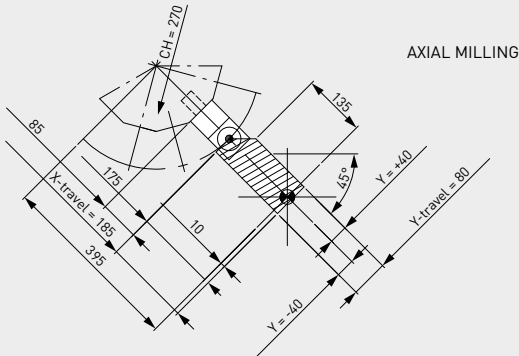


- + VDI 30/Frontal Disc/TK=340
- + Max. Turning diameter=320 mm

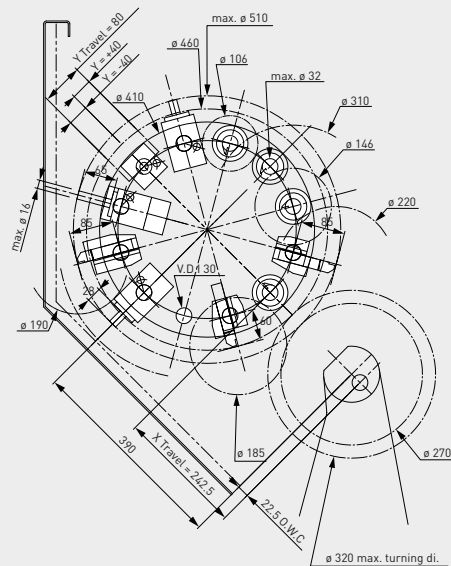
CLX 350 V6
[mm]



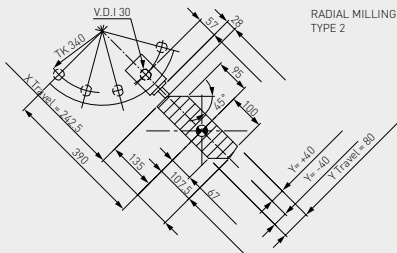
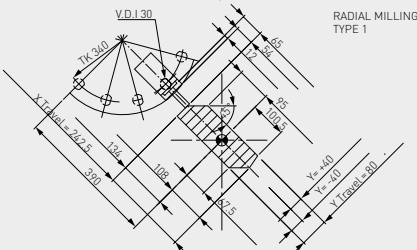
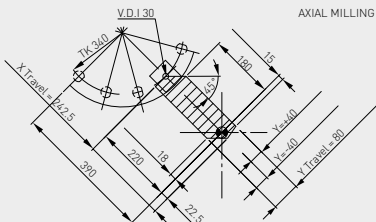
- + VDI 30/Radial Disc/Key 270
- + Max. Turning diameter=320 mm

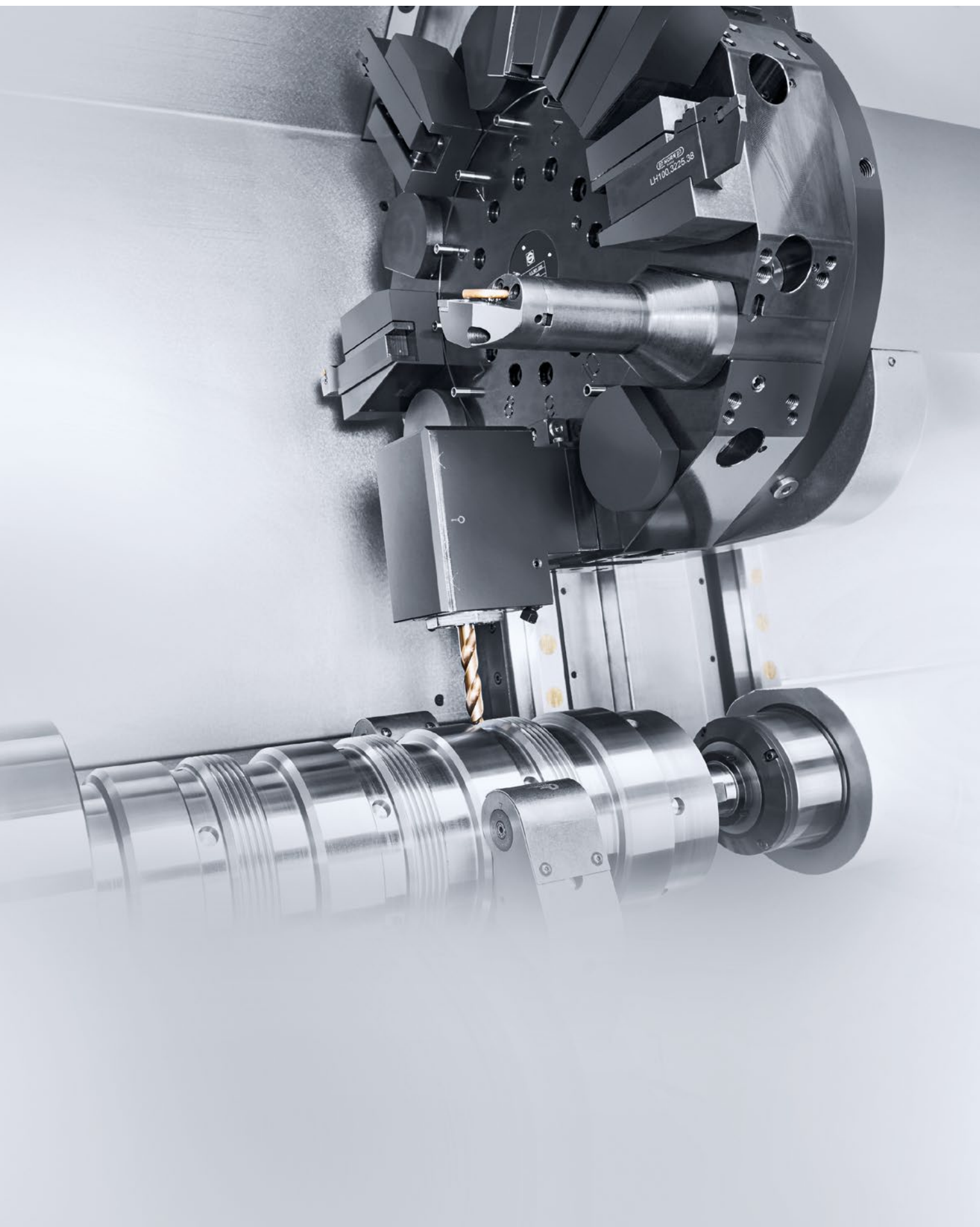


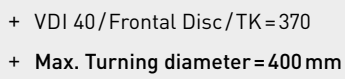
CLX 350 V4
(mm)



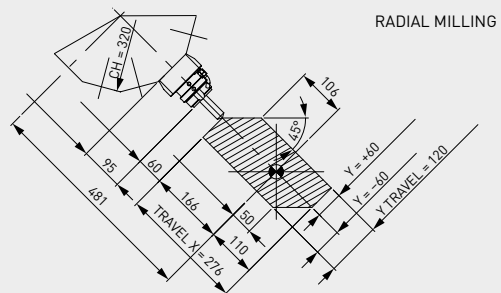
- + VDI 30/Frontal Disc/TK=340
- + Max. Turning diameter = 320 mm





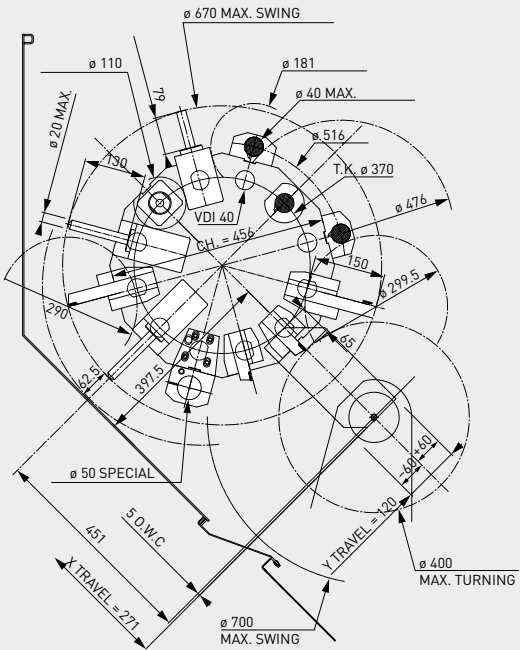
(mm)

(mm)

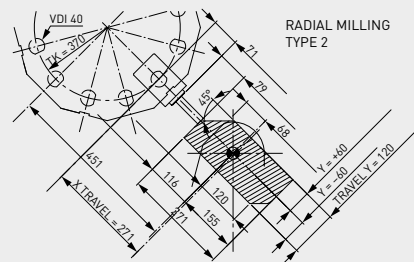
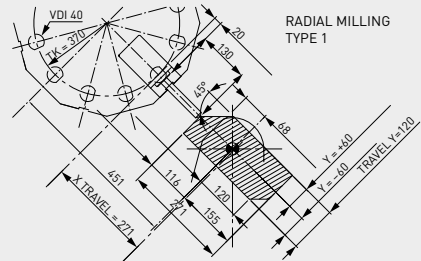
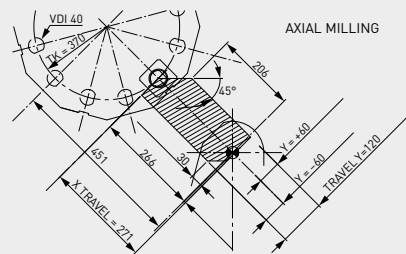


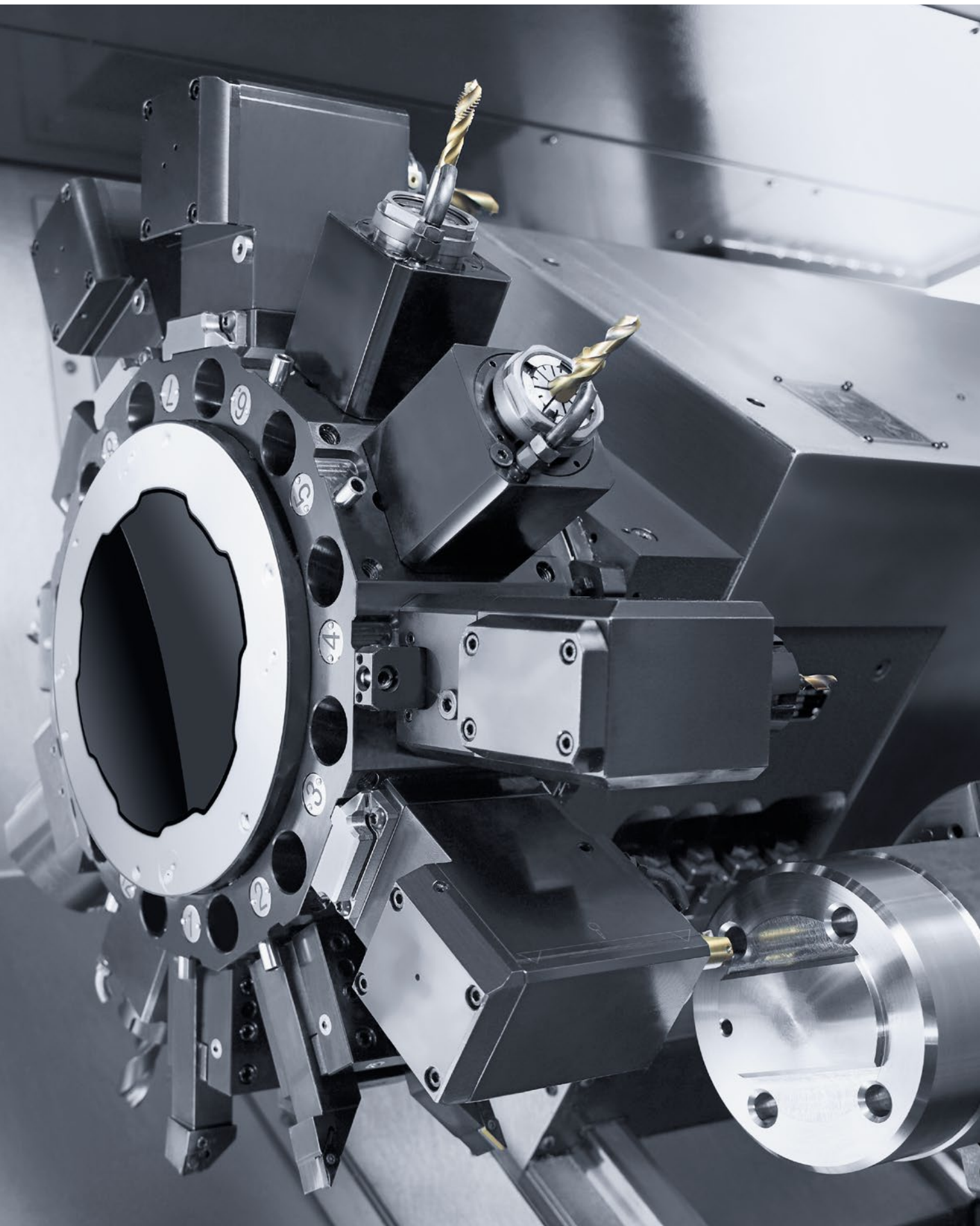
- + VDI 40/Radial disc/Key=320 mm
- + **Max. Turning diameter=400 mm**

CLX 450 V4
(mm)



- + VDI 40/Frontal Disc/TK=370 mm
- + **Max. Turning diameter=400 mm**



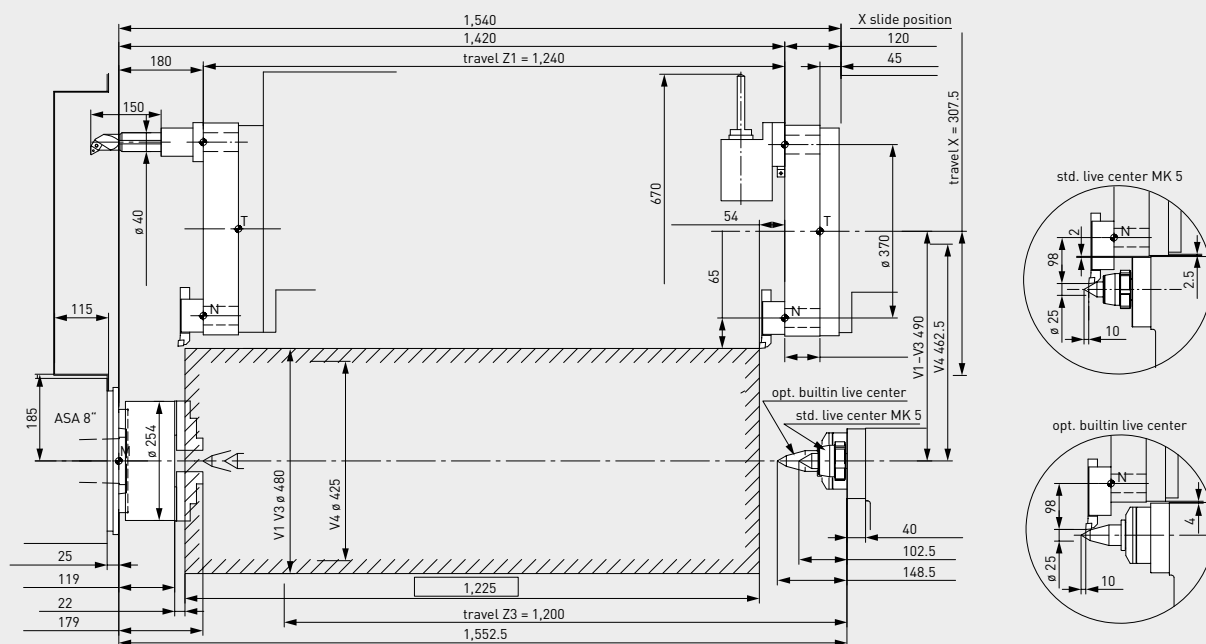


CLX SERIES

Working area CLX 550

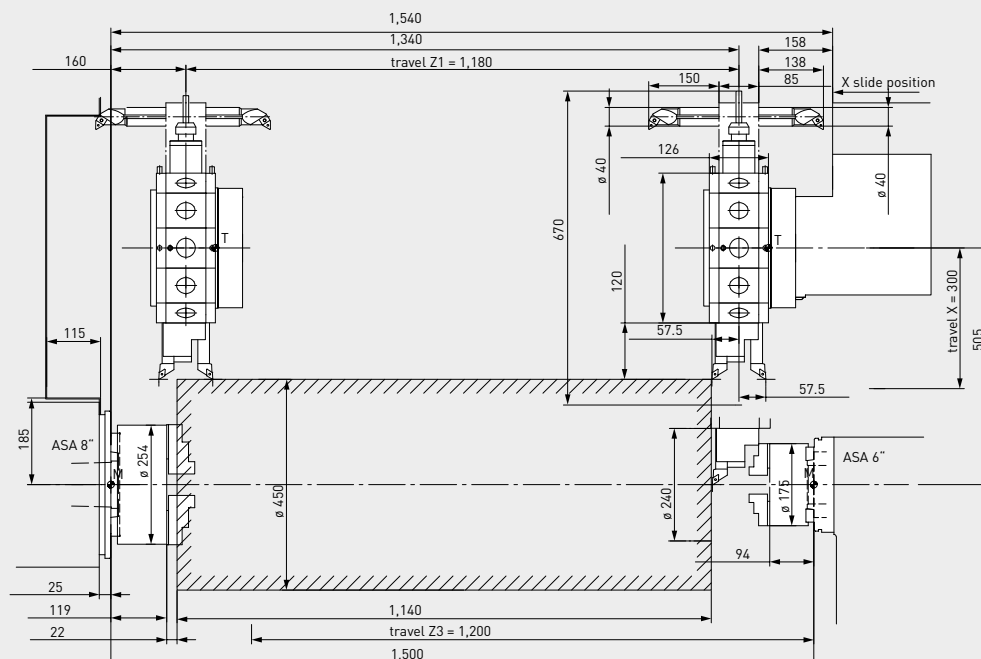
CLX 550 V1/V3/V4

(mm)

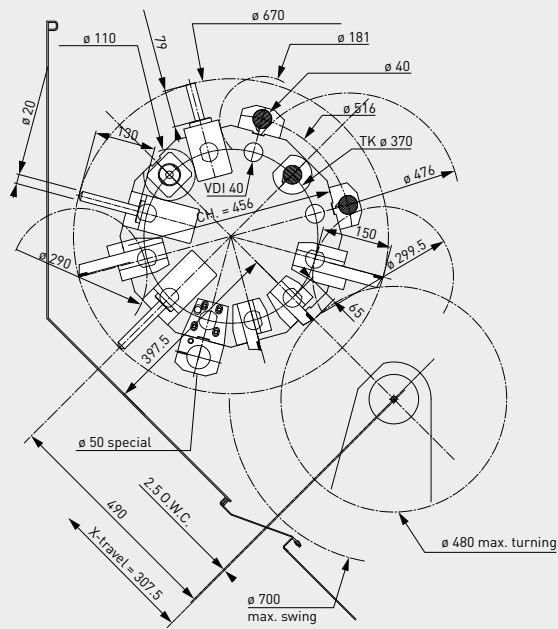


CLX 550 V6

(mm)

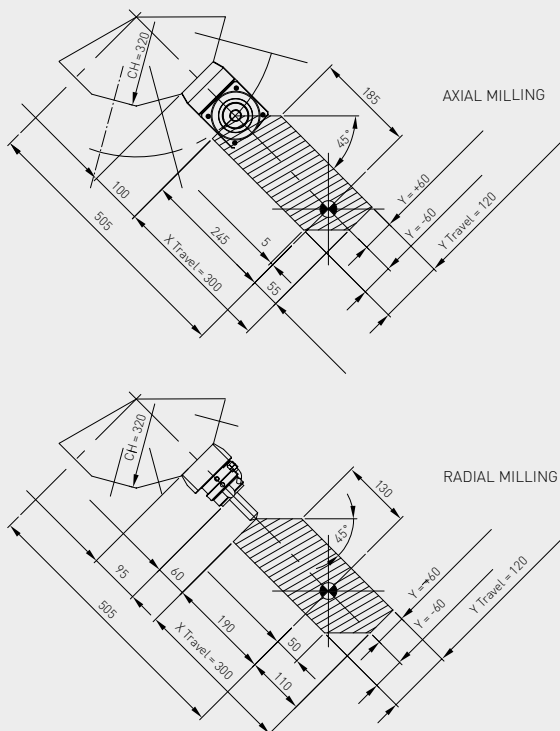


CLX 550 V1/V3 (mm)

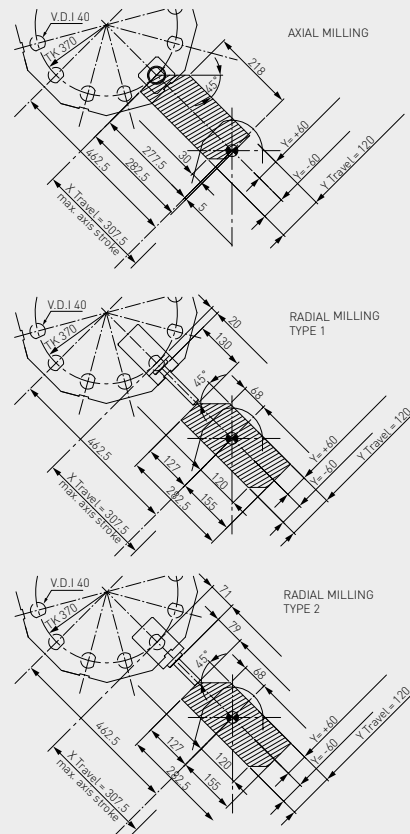


- + VDI40/Frontal Disc/ $TK=370$
- + Max. Turning diameter = 480 mm

CLX 550 V6 (mm)



CLX 550 V4 (mm)



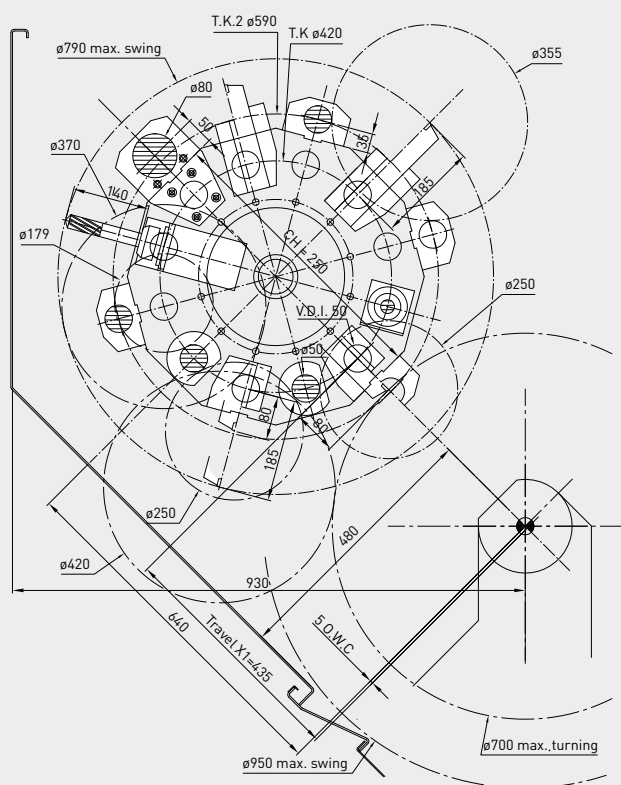
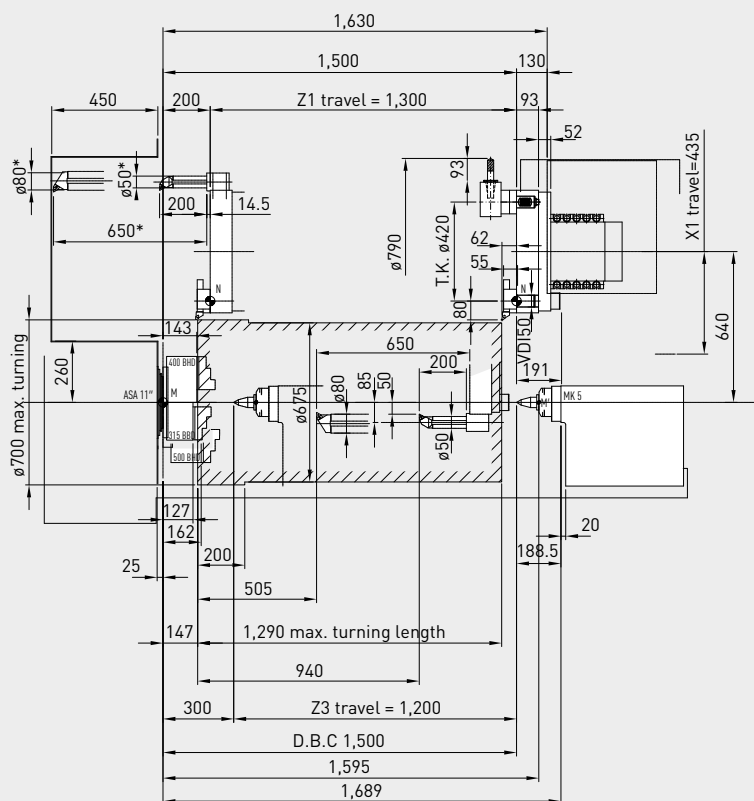
- + VDI40/Radial Disc/KEY = 320
- + Max. Turning diameter = 450 mm

CLX SERIES

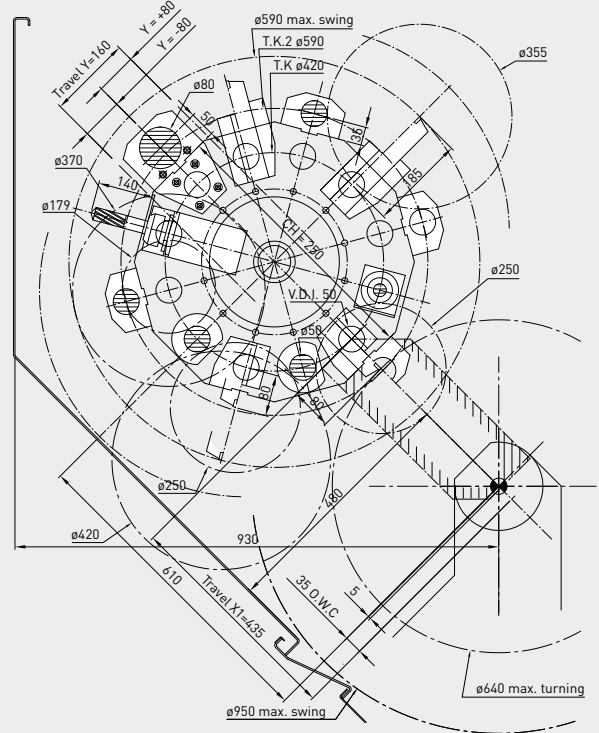
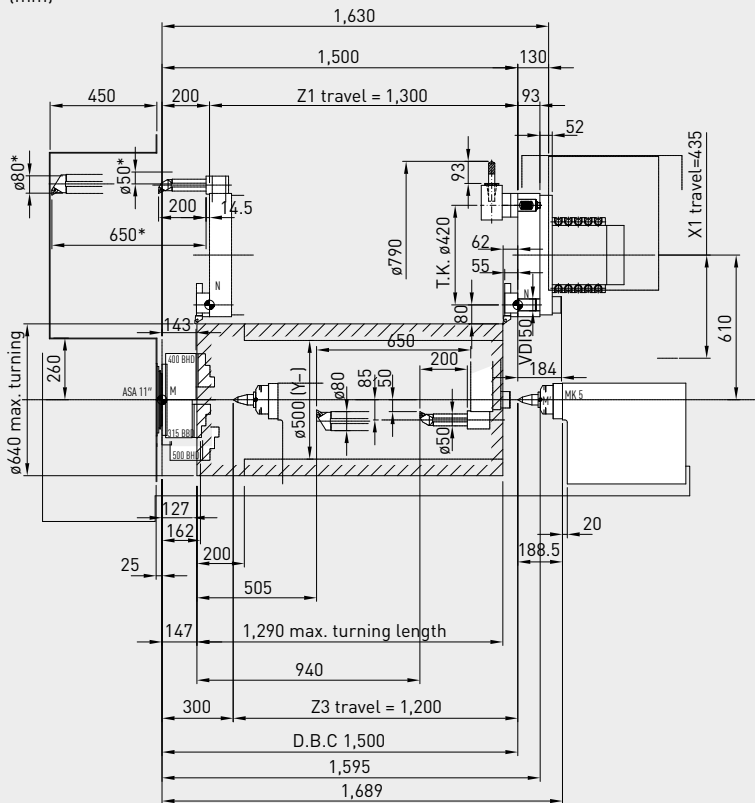
Working area CLX 750

CLX 750 V1 /V3

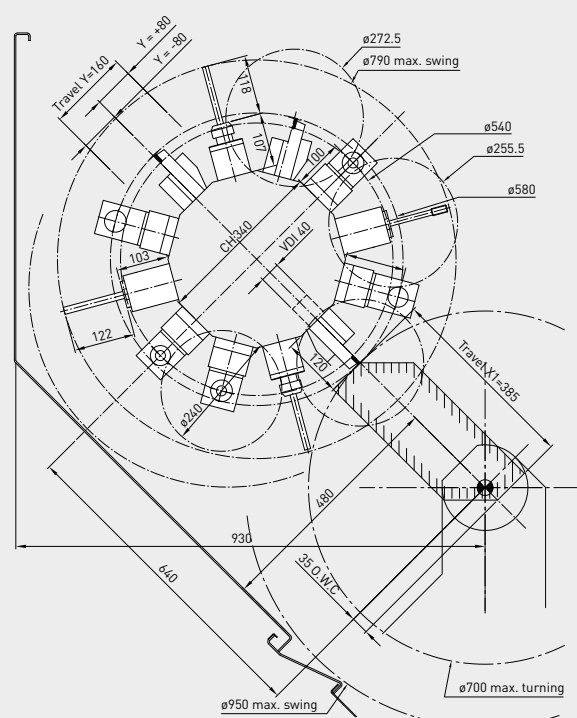
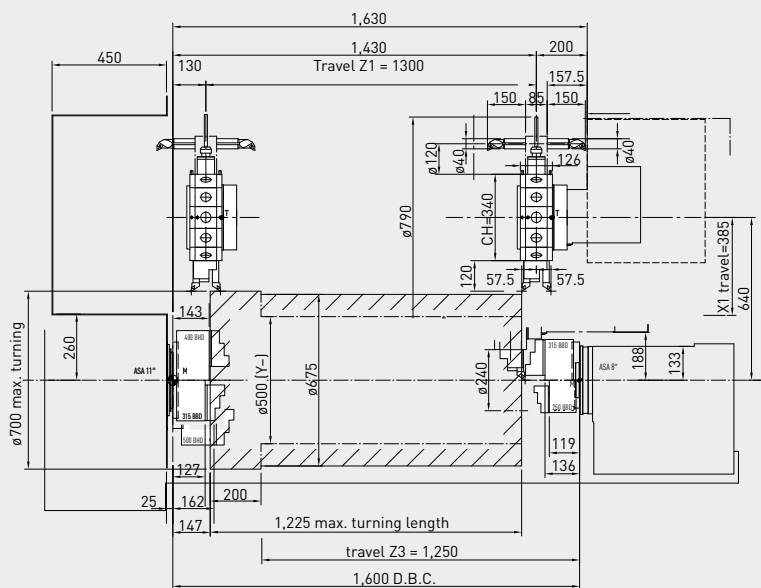
(mm)



(mm)



(mm)

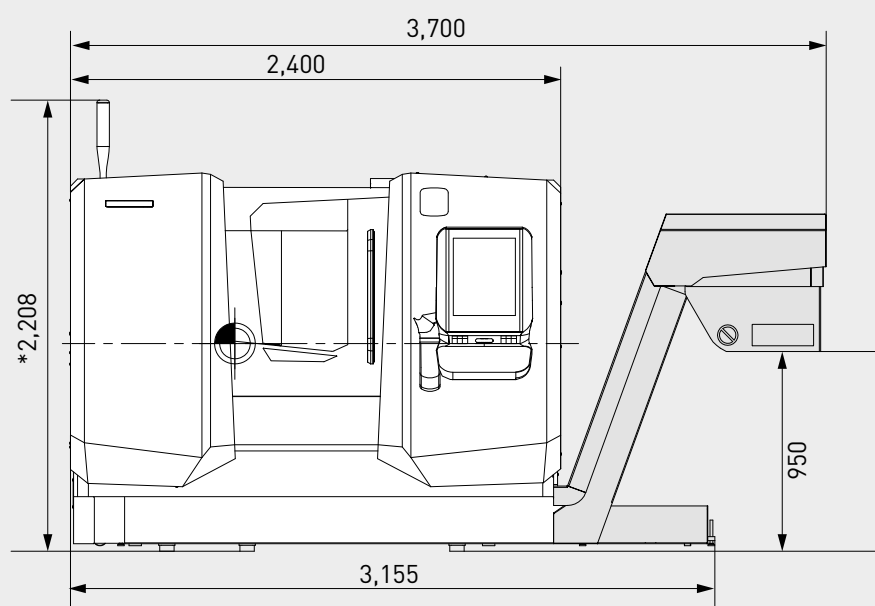


Machine highlights
Modularity
<ul style="list-style-type: none"> › Technology and applications › Customisation and solutions › Control technology
Technical data

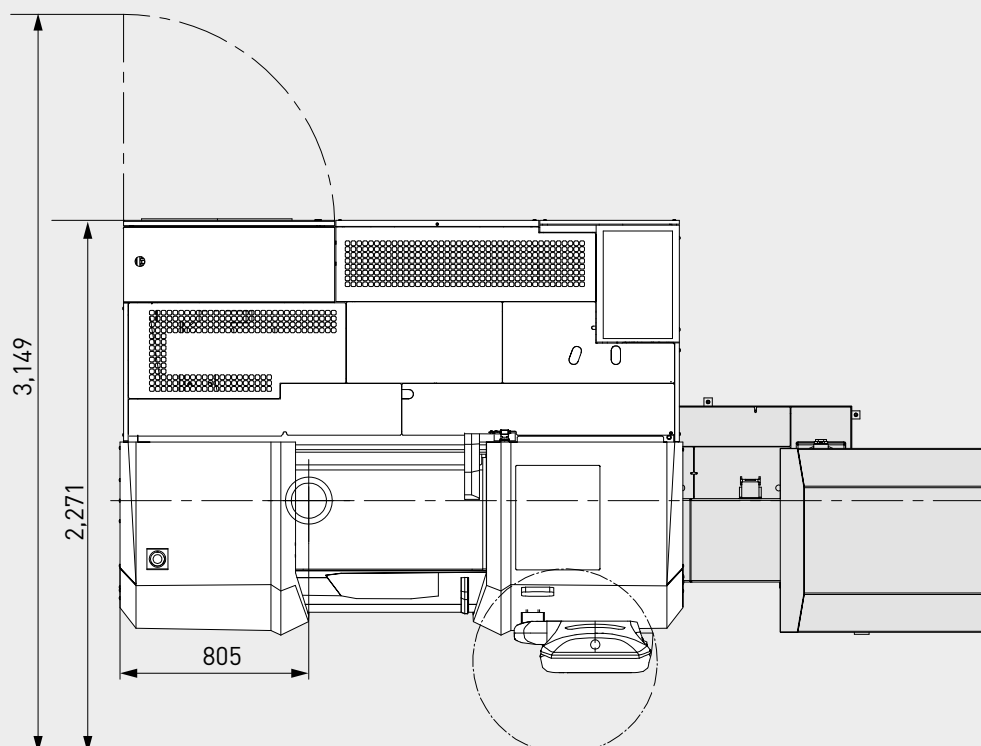
CLX SERIES

Floor Plans CLX 350

Front view
(mm) *Option



Top view
(mm)

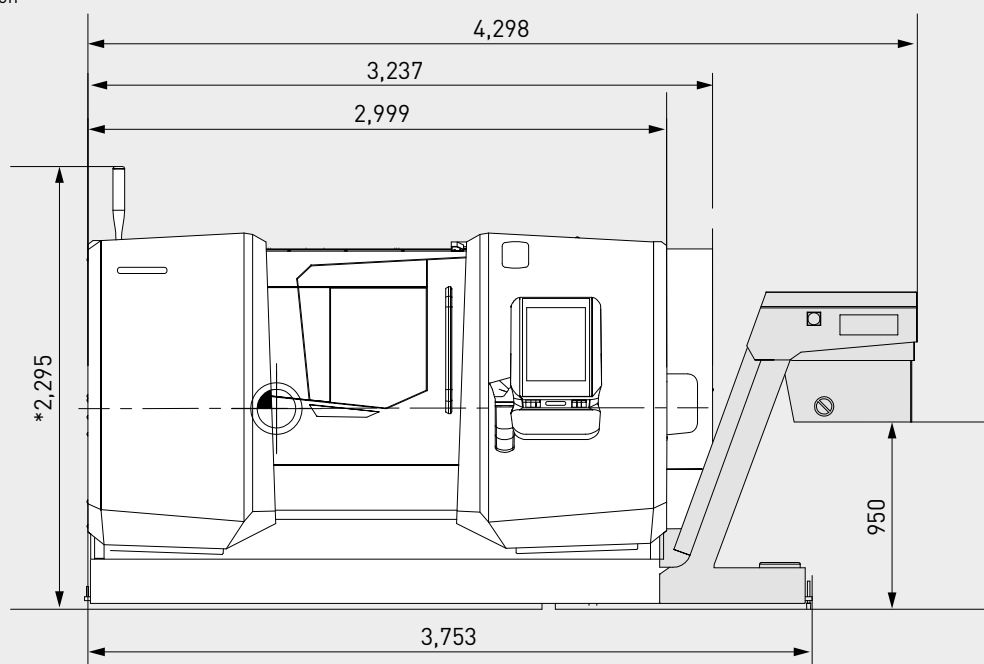


CLX SERIES

Floor Plans CLX 450

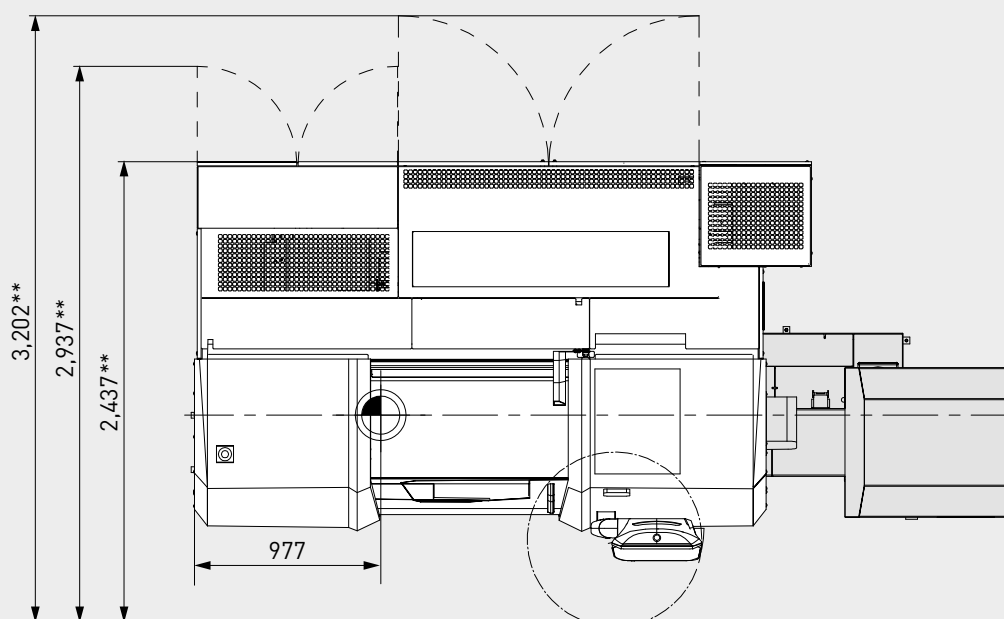
Front view

[mm] * Option



Top view

[mm] ** SIEMENS control

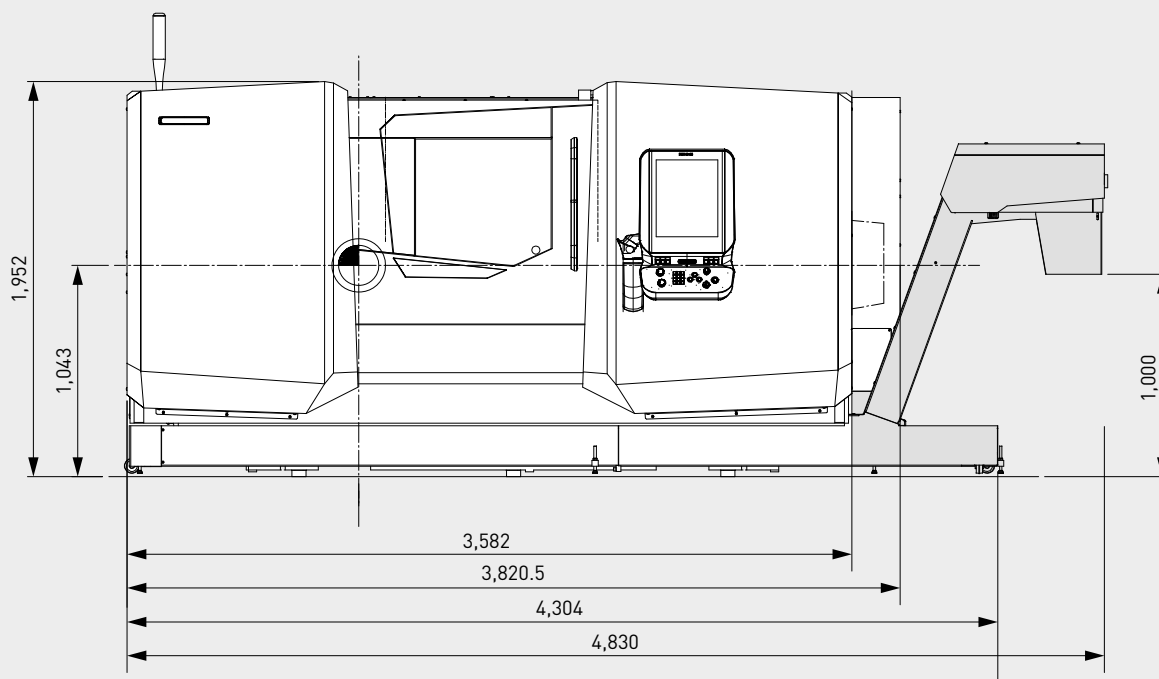


Machine highlights
Modularity
<ul style="list-style-type: none"> › Technology and applications › Customisation and solutions › Control technology
Technical data

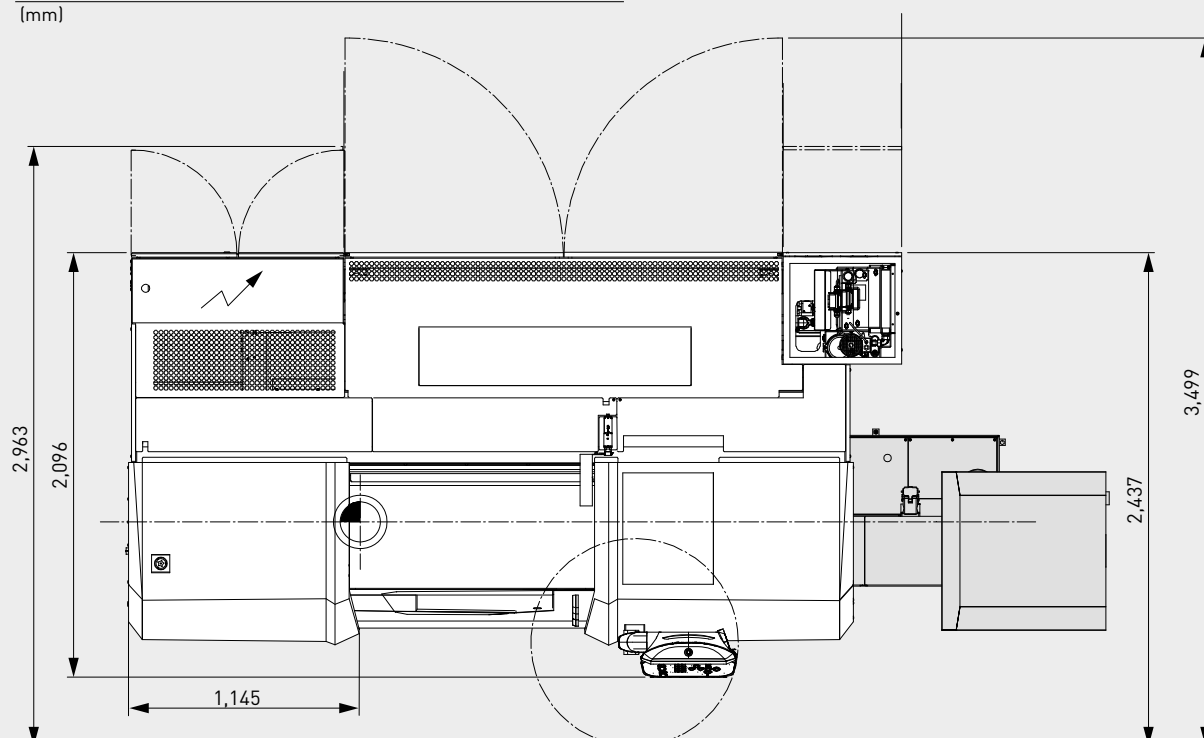
CLX SERIES

Floor Plans CLX 550

Front view
(mm)



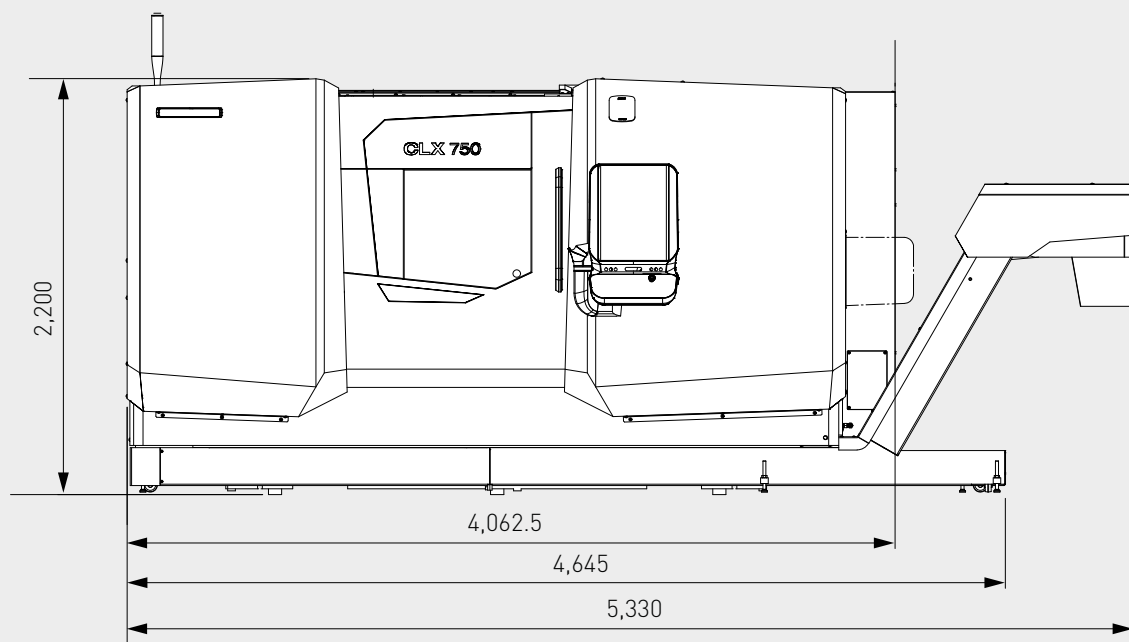
Top view
(mm)



CLX SERIES

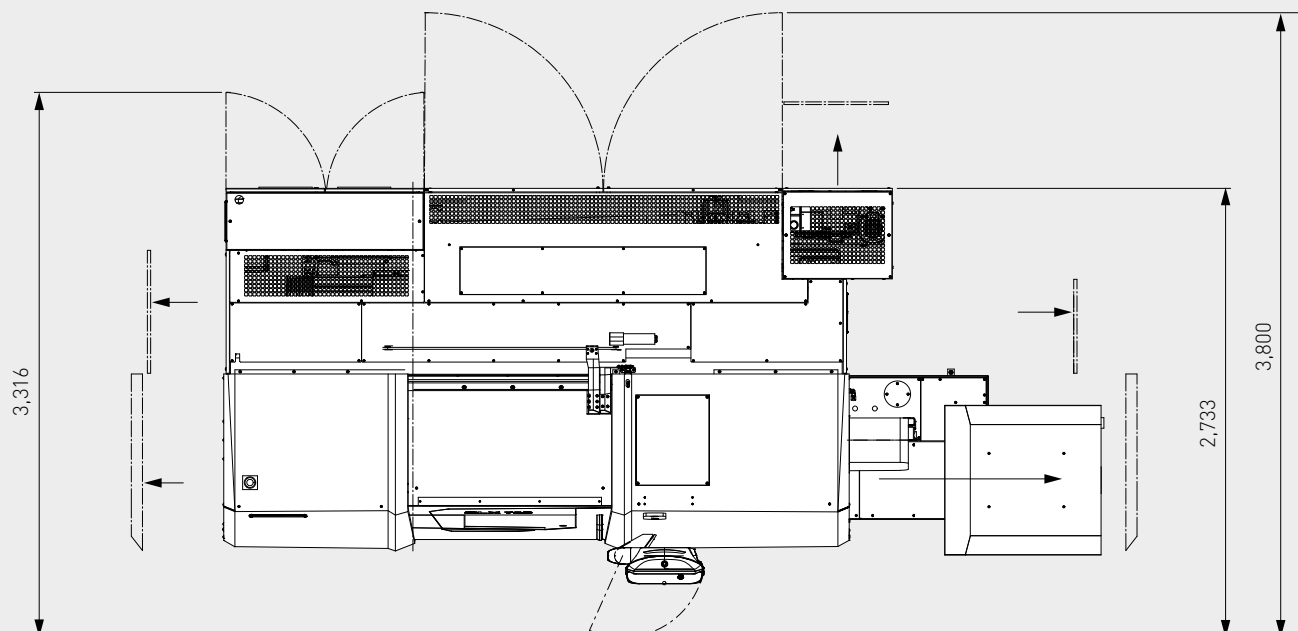
Floor Plans CLX 750

Front view
[mm] * Option



41

Top view
[mm] ** SIEMENS control



Machine highlights
Modularity
› Technology and applications
› Customisation and solutions
› Control technology
Technical data

CLX SERIES

Technical data

Working area

Swing over bed
Swing over cross slides – Ø
Max. turning diameter – Ø
Transversal Travel (Y)
Cross Travel (X) [V6 data]
Longitudinal travel (Z) [V6 data]
Rapid traverse (X/Y/Z)

Main spindle

Spindle nose
Bar passage – Ø
Front bearing diameter
Nominal chuck size*
Drive power (40/100 % DC)
Max. torque (40/100 % DC)
Max. speed

Counter spindle

Spindle nose
Front bearing diameter
Draw tube inner diameter (blind hole)
Nominal chuck size*
Drive power (40/100 % DC)
Max. torque (40/100 % DC)
Max. speed

Positioning accuracy

Acc. to ISO 13041–4 in X/Y/Z-axis
Acc. to ISO 13041–4 for C-axis

Turret

Number of tool stations
Driven tool stations
Max. power (40 % DC)
Max. torque (40 % DC)
Max. speed

Tailstock

Tailstock travel
Life center interface
Max. tailstock thrust

Guideways

Ball screw X/Y/Z-axis (D×P)

Machine weight

without chip conveyor
with chip conveyor
Footprint, Sizes

* optional



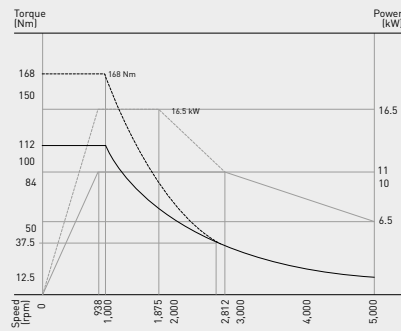
	CLX 350	CLX 450	CLX 550	CLX 750
	580	700	700	950
mm	360 (V1/V3)/320 (V4/V6)	500 (V1/V3)/370 (V4/V6)	500 (V1/V3)/370 (V4/V6)	675 (V1/V3)/500 (V4/V6)
mm	320 [250 recommended]	400	480 [425]*	700 (V1/V3)/640 (V4/V6)
mm	±40	±60	±60	±80
mm	242.5 [185]	271 [276]	307.5	435
mm	540 [465]	830 [755]	1,240	1,300
m/min	30/22.5/36	30/22.5/30	30/22.5/30	30/22.5/30
	A2 – 6	A2 – 8	A2 – 8	A2 – 11*
mm	65	80	80/102*	127
mm	120	130	130/150*	200
mm	210	250	250	315/400/620
kW	16.5/11	25.5/17	33/22	46/36.8
Nm	168/112	426/283	630/420	2,000/1,600
rpm	5,000	4,000	3,250	2,000
	A2 – 5	A2 – 6	A2 – 6/A2 – 8*	A2 – 8*
mm	90	100	100	130
mm	36	52	52	72
mm	175	210	210/250	315
kW	16.2/12.6	14/13	14/13 [32/25]*	32/25
Nm	62/48	192/171.5	192/141.6	360/280
rpm	5,000	5,000	5,000	4,000
µm	5/5/8	5/5/10	5/5/10	10/5/10
arcsec	20	20	20	20
	VDI 30	VDI 40	VDI 40	VDI 50 (V1-V4) VDI 40 (V6)
	12×VDI 30	12×VDI 40/6×BT	12×VDI 40/6×BT	12×VDI 50/6×BT/12×VDI 40
	12*	12*	12*	12*
kW	5.44	5.44	5.44	12.5
Nm	20	20	20	85
rpm	5,500 [V3/V4]/5,000 [V6]	4,000	4,000	4,000
mm	550	800	1,200	1,200
MK	4	5	5	5
kN	4	8	12	16
mm	32×10	40×10	40×10	50×10
kg	4,200	5,900	7,200	10,000
kg	4,700	6,250	7,500	10,500
m²	4.9	6.3	7.4	8.9

CLX SERIES

Power / Torque Diagrams Main Spindle

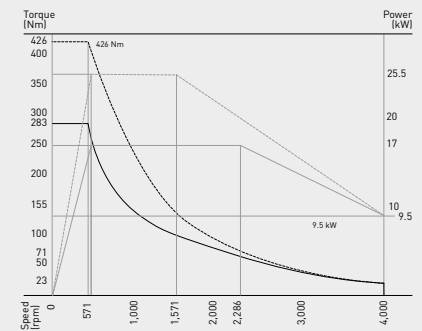
Power diagram of main spindle CLX 350

Main spindle 5,000 rpm
16.5 kW / 168 Nm (40 % DC)



Power diagram of main spindle CLX 450

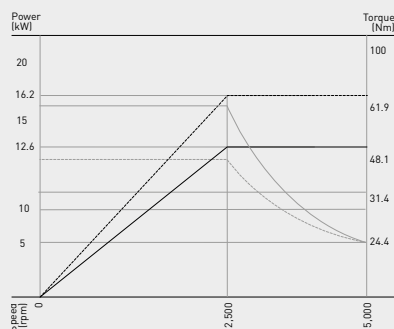
Main spindle 4,000 rpm
25.5 kW / 426 Nm (40 % DC)



Power / Torque Diagrams Sub Spindle

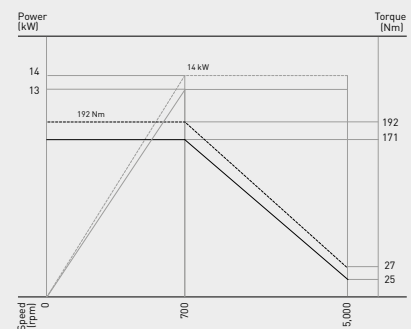
Power diagram of counter spindle | ISM 36 CLX 350

Counter spindle 5,000 rpm
16.2 kW / 62 Nm (40 % DC)



Counter spindle | ISM 52 CLX 450/CLX 550

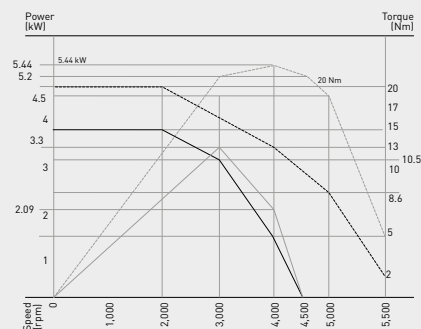
Counter spindle 5,000 rpm
14 kW / 92 Nm (40 % DC)



Power / Torque Diagrams Driven Tools

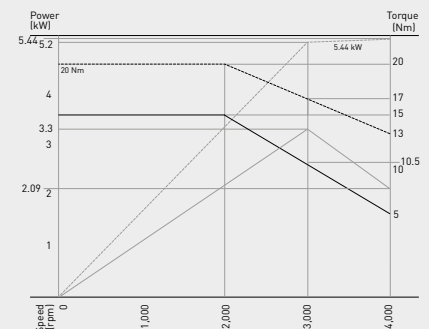
Power diagram of driven tools CLX 350

Driven Tools 5,500 rpm (V3 and V4) / 5,000 (V6)
5.44 kW / 20 Nm (40 % DC)



Power diagram of driven tools CLX 450

Driven tools 4,000 rpm (V3, V4 and V6)
5.44 kW / 20 Nm (40 % DC)

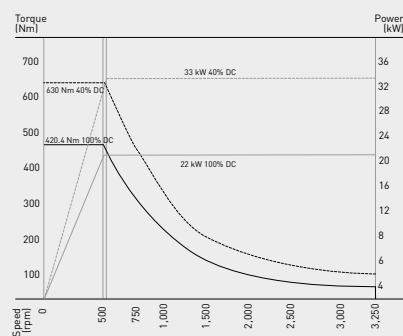


The power diagrams stated in the brochure are based on the machine configuration with SIEMENS control.

— 100% S1 -- 40% S6

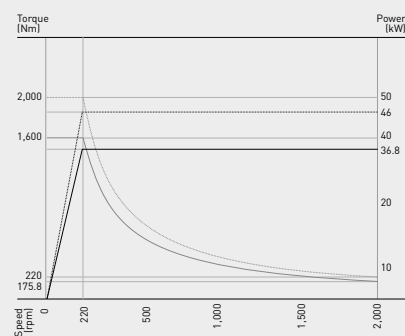
Power diagram of main spindle CLX 550

Main spindle 3,250 rpm
33 kW/630 Nm (40 % DC)



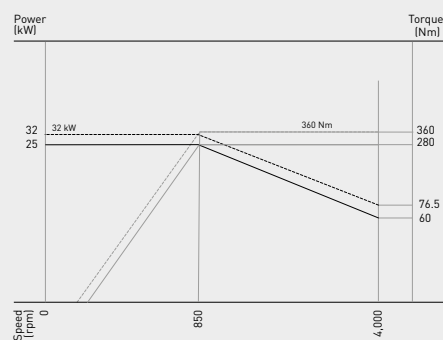
Power diagram of main spindle CLX 750

Main spindle 2,000 rpm
46 kW/2,000 Nm (40 % DC)



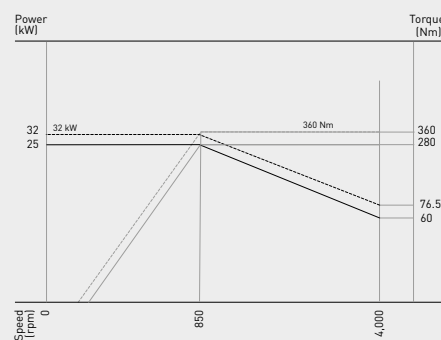
Power diagram of counter spindle | ISM 76 CLX 550

Counter spindle 4,000 rpm
32 kW/360 Nm (40 % DC)



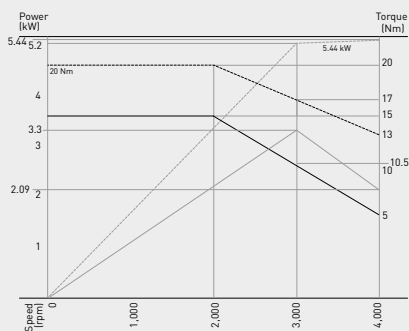
Power diagram of counter spindle | ISM 76 CLX 750

Counter spindle 4,000 rpm
32 kW/360 Nm (40 % DC)



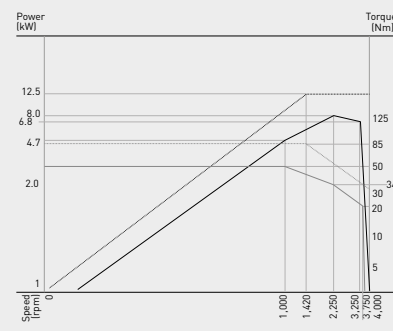
Power diagram of driven tools CLX 550

Driven tools 4,000 rpm (V3, V4 and V6)
5.44 kW/20 Nm (40 % DC)



Power diagram of driven tools CLX 750

Driven tools 4,000 rpm (V3, V4)
12.5 kW / 85 Nm (40 % DC)



The data for the machines with FANUC control can be provided separately upon request.

— 100% S1 — 40% S6



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