

Universal basic turning centres for a broad range of manufacturing

CLX 350

CLX 450

CLX series



Machine highlights

Modularity

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

Technical data

**HIGHEST
POSITIONING
ACCURACY AND
PRECISION!**

CLX series

High productive basic turning centres for a broad range of manufacturing.

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. This applies to the modularity and possibility to build up “your own machine” with wide range of options and technological solutions.

19" DMG MORI SLIMline®
Multi-Touch control and
Operate 4.7 on SIEMENS

Highlights

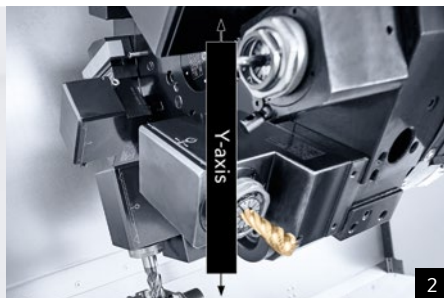
- 1 More precision with highly dynamic spindle**
CLX 350:
Maximum power 16.5 kW (40 % DC)
Maximum torque 168 Nm (40 % DC)
Maximum spindle speed 5,000 rpm

CLX 450:
Maximum power 25.5 kW (40 % DC)
Maximum torque 426 Nm (40 % DC)
Maximum spindle speed 4,000 rpm
- 2 Traversing tailstock**
for long parts machining
Option: NC tailstock
- 3 Rapid traverse rate**
CLX 350: X-/Z-axis 30/36 m/min
CLX 450: X-/Z-axis 30/30 m/min
- 4 More power with VDI turret**
with up to 12 tools and
6 block tool stations*
*Not available for the CLX 350
- 5 Machine surfaces**
The durable, scratch resistant
machine cover provides longterm
protection to the machine





1



2



3

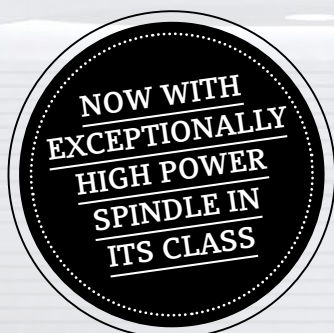


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- 1: Technology:**
Variety of applications (p. 6–7)
- 2: Customization:**
Broad range of options (p. 8–9)
- 3: Software solutions:**
Technology cycles (p. 8)
- 4: Technological solutions** (p. 8)
- 5: 3D controls:**
SIEMENS (p. 10–11)



CLX = Compact
Competitive
Customized

03

19" DMG MORI SLIMline®
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Modularity

- › Technology and applications
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CLX series

Rigid cast iron bed with thermally stable headstock and linear guideways.

The CLX series is based on 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 four bearings, with a high bar capacity, ensure high rotational precision and long service life. The programmable tailstocks guarantee flexibility and rapid processes in your production. The low connected load, efficient power consumption and energy recovery ensure efficient use of energy.

Highlights

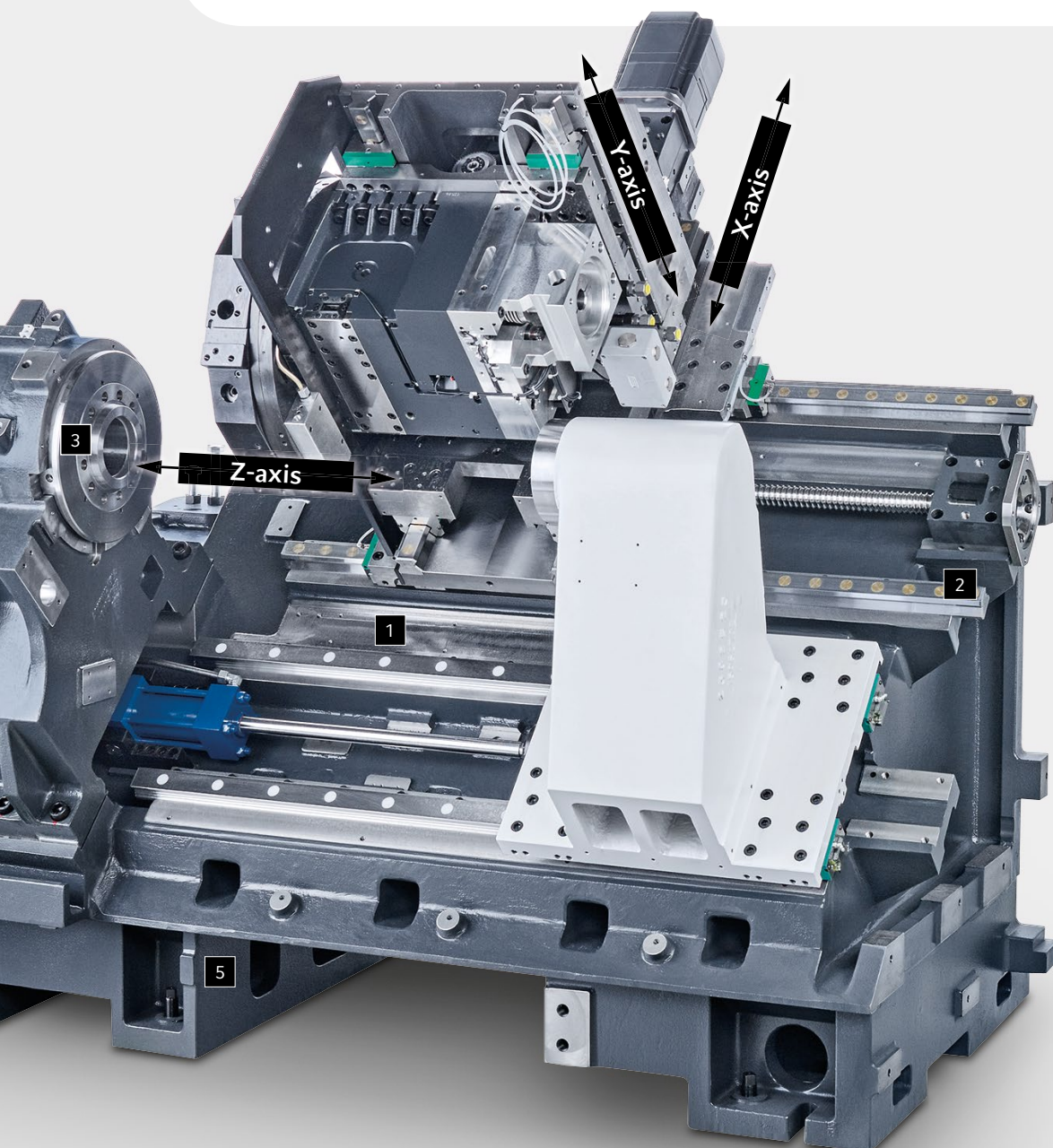
- 1 Optimized chip fall**
through 45° slant bed
- 2 Linear guides**
in the X- and Z-axes to guarantee high machine dynamics
(optional Y-axis for the CLX 450)
- 3 Bar capacity**
CLX 350: ø 51 mm in standard (ø 65 mm optional)
CLX 450: ø 80 mm in standard
- 4 Highly dynamic spindle drive**
- 5 Four-guideway bed casting**
High quality, compact and torsion-resistant 45° cast iron inclined bed. Linear rolling rails guideways – four-guideway design allows collision-free movement of the tailstock. Z-axis guideway protection increases operational safety and service life.



Technical Data

		CLX 350	CLX 450
Swing over bed	mm	ø 610	ø 650
Max. turning diameter	mm	ø 320/250***	ø 400/315*
Travel in Z-axis	mm	580	600
Bar capacity	mm	ø 51/65**	ø 80
Chuck diameter	mm	ø 210**	ø 210**/ø 250**/ø 315**
Tool interface		12 x VDI 30	12 x VDI 40/6 x BT
Compact footprint	m ²	4.9	5.8

*Version with V4 (for milling operations), ** Optional, *** Recommended



The picture represents the CLX 450 in V4 version with optional Y-axis.

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› Customization and solutions
› Control technology
Technical data

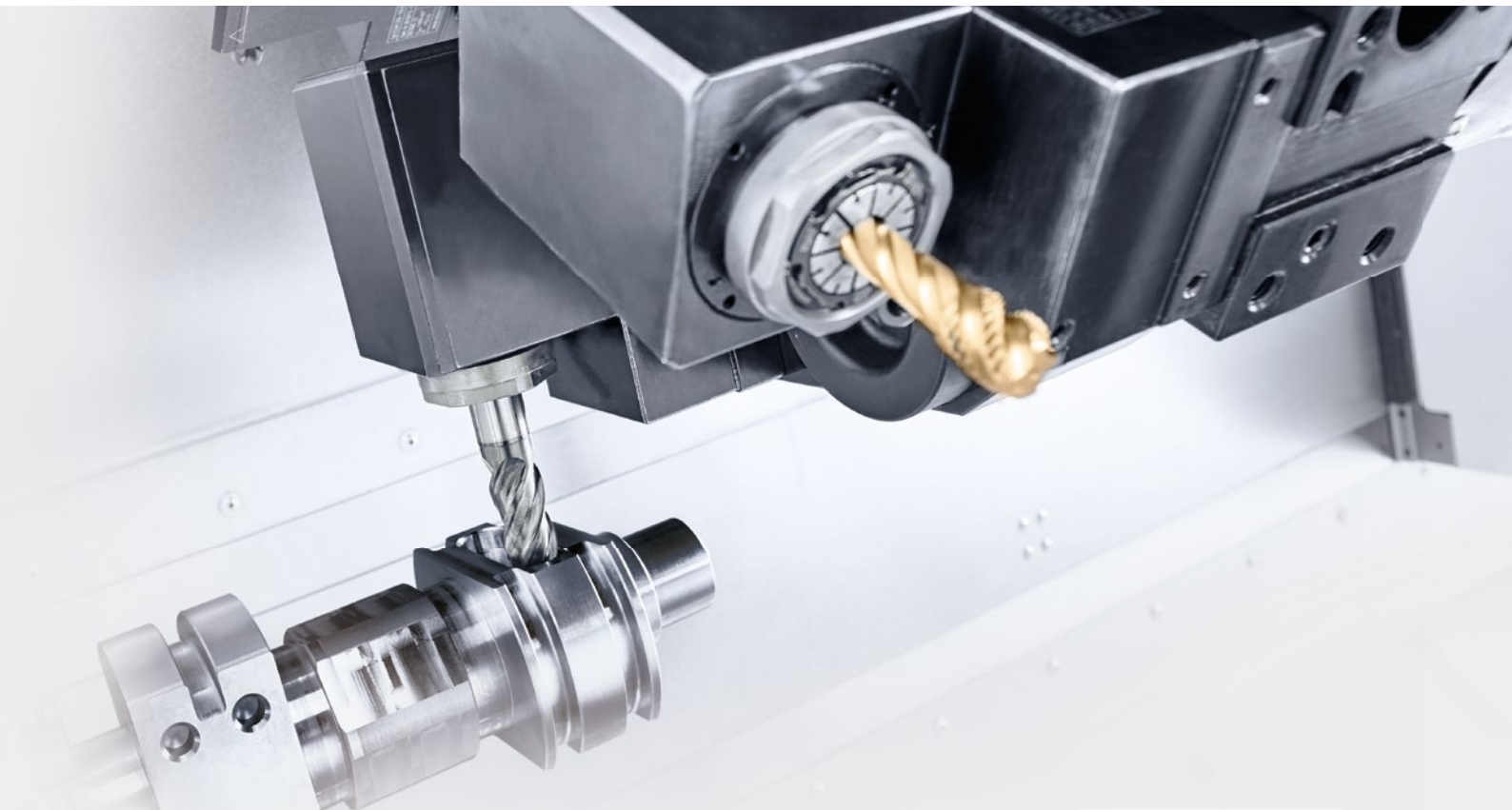
CLX series

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.

Examples of cutting parameters

		CLX 350	CLX 450
Rough turning			
Cutting speed Vc	m/min	250	250
Feed	mm/rev	0.4	0.5
Cutting depth ap	mm	3.5	5
Material		C45	C45
Finishing turning			
Cutting speed Vc	m/min	320	320
Feed	mm/rev	0.12	0.12
Surface roughness Ra	µm	0.8	0.8
Tool radius	mm	R 0.8	R 0.8
Material		C45	C45
Drilling			
Cutting speed	m/min	160	160
Feed	mm/rev	0.12	0.15
Tool diameter	mm	ø45	ø50
Material		C45	C45



1



2



3



4



5



6

1: Chain Wheel
Industry: Machinery
Material: Steel C45
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 C45
Dimensions: $\varnothing 150 \times 150$ mm
Machining time: 23 min.

4: Chuck adapter
Industry: Machinery
Material: C45
Dimensions: $\varnothing 260 \times 60$ mm
Machining time: 35 min.

5: Connector
Industry: Aerospace
Material: Aluminium
Dimensions: $\varnothing 74 \times 45$ mm
Machining time: 25 min.

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

Modularity

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

CLX series

DMG MORI technology cycles

Easy Tool Monitoring

- + Prevention damage due to controlled stop of spindle and axis in case of tool breakage or tool overload
- + Sensorless with automated learning of load limits
- + Program can be continued via the START cycle
- + For turning, milling and drilling operations
- + Immediate feed stop: spindle stop after one second (tool cutting free)

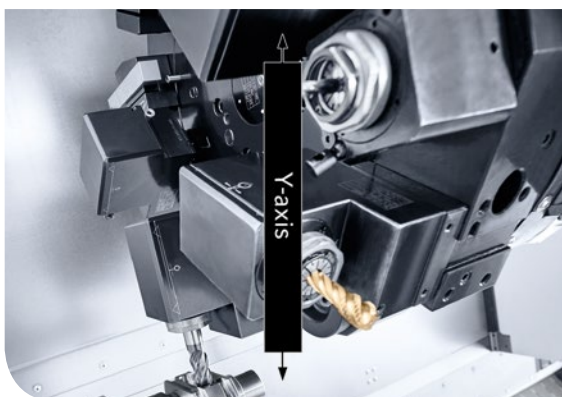


CLX series

Technological solutions

Milling operations on turning machine

Optional Y-axis with ± 60 mm travel (only for the CLX 450) for more flexibility in complex turning-milling operations.



Perfect for series production

Thanks to the optional rear chip conveyor the installation width of the machine is reduced by up to 35 % so that the production area can be utilised much more efficiently.



CLX series

Selected options

	CLX 350	CLX 450
NEW Balanced pressure for standard cylinder	•	•
NEW Double cartridge filter	•	•
Coolant Spray gun rated at 5 bar	•	•
Y-axis	—	•
Tool measuring probe in the working area	•	•
More powerful coolant pump, 12 bar	•	•
8 freely assignable M functions for SIEMENS	•	•
Automatic front door	•	•
Mechanical oil mist filter	•	•
Collet chucks	•	•
Hydraulic three-jaw chuck	•	•
Set of hard or soft jaws	•	•
Set of tool holders	•	•
Direct measuring system (X/Z)	•	•
Steady rest for precise shaft machining up to 152 mm	—	•
Rear chip conveyor	•	•
DMG MORI Powertools (DMG MORI Service Agent, DMG MORI Messenger)	•	•

• available, — not available

CLX series

Packages

	CLX 350	CLX 450
Bar package & interface		
Slat band chip conveyor	•	•
Parts catcher for components	•	•
4-colour signal lamp	•	•
Connection for bar feeder or bar magazine (DMG MORI standard)	•	•
Chip removal package		
Slat band chip conveyor	•	•
4-colour signal lamp	•	•
Presetting package		
Tool measuring probe (manual)	•	•
Slat band chip conveyor	•	•
4-colour signal lamp	•	•
Automation package		
Interface for robot (DMG MORI Standard)	•	•
Automatic front door	•	•
Automatic chuck flushing	•	•
Tropical package		
Active coolant unit for the electrical cabinet	•	•
Additional ventilator in the control panel	•	•

• available

Modularity

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

CLX series

DMG MORI SLIMline® multi-touch control for highest efficiency and reliability.

The new DMG MORI SLIMline® multi-touch control with Operate 4.7 on SIEMENS and 3D control technology represents the next advanced step for a modern user interface and is compatible with the previous version of Operate. The practical and ergonomically optimised 19" multi-touch display with its maximised resolution and 45 swivel range offers decisive user benefits.

Thanks to 3D control technology, you can simulate machining in advance – this is what state-of-the-art and user friendly workplaces look like nowadays! Additionally, the control system features greatly expanded CNC memory capacity from 5 MB to 4 GB and additional memory 8 GB on **DMG MORI SMARTkey®**.



NEW

- + **19-inches** multi-touch display
- + **66 % more** pixels
- + **45° swivel range**
- + **4 GB** – now expanded memory capacity
- + **3D control** technology

Intuitive use for quick and easy operation



Tap with one finger

Window/object selection



Tap and hold

Window/subject opening



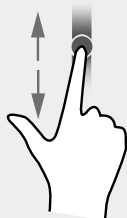
Pinch

Decrease of graphic content, f.e. simulation, mold-view



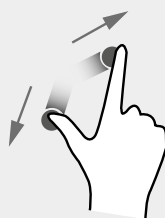
Tap with two fingers

Context menu, f.e. copy/paste



Flick

Scrolling to the list/file, f.e. programs or tools/NC programs



Spread

Increase of graphic content, f.e. simulation, mold-view

More effective operations

- + **Better workflow**, more efficiency
- + **Fast and convenient** "zoom" features
- + **Quick and convenient** access to parameters and user data
- + **Expanded memory capacity** to 4GB
- + **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

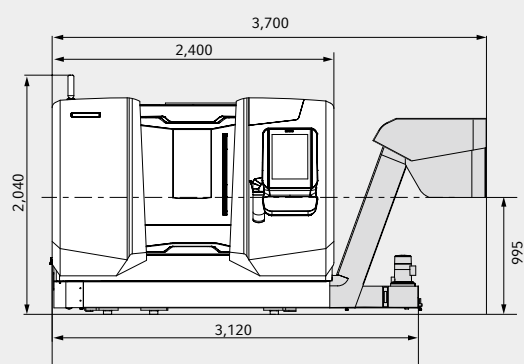
More comfortable use

- + **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 SINUMERIK Operate
- + **Optimization of the elements** on the screen
- + **Reliable and scratch-resistant** operating surface

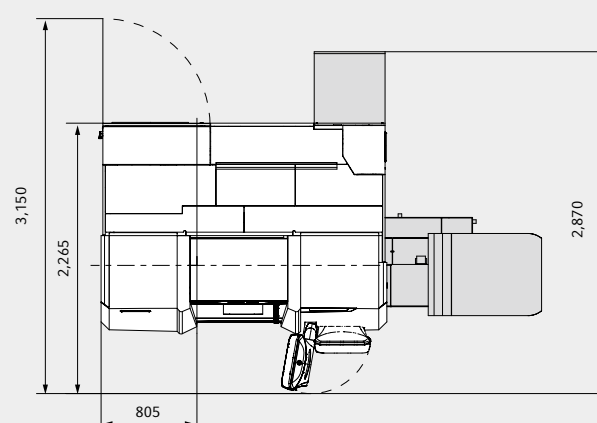
CLX series

Floor plans CLX 350

Front view



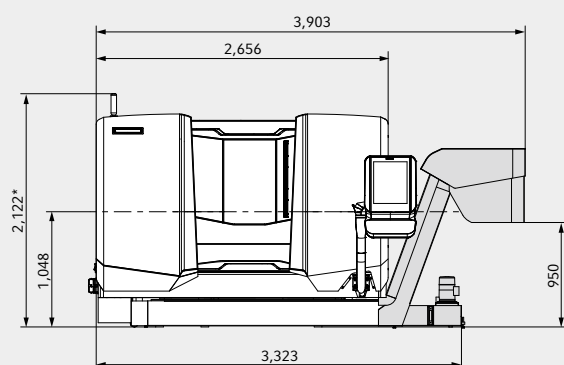
Top view



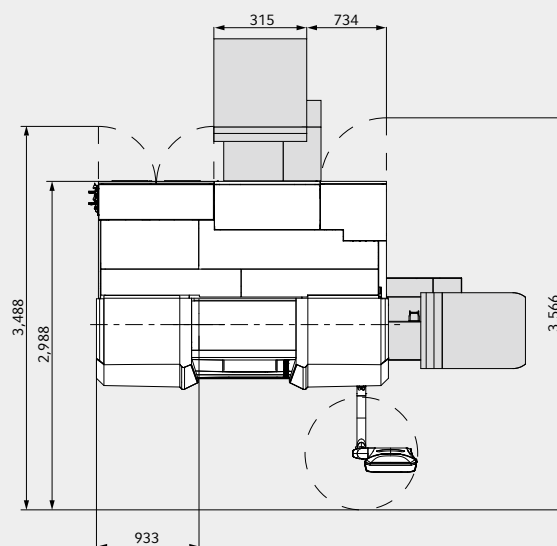
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Floor plans CLX 450

Front view



Top view



The technical data stated in the brochure is based on the basic machine configuration and may therefore deviate and be the subject to the technical changes.

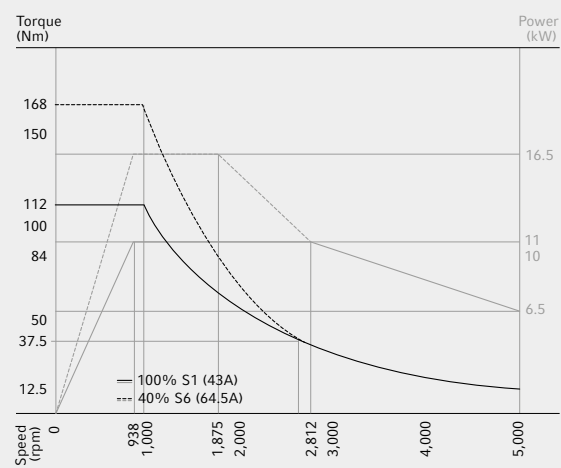
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Power diagrams CLX 350

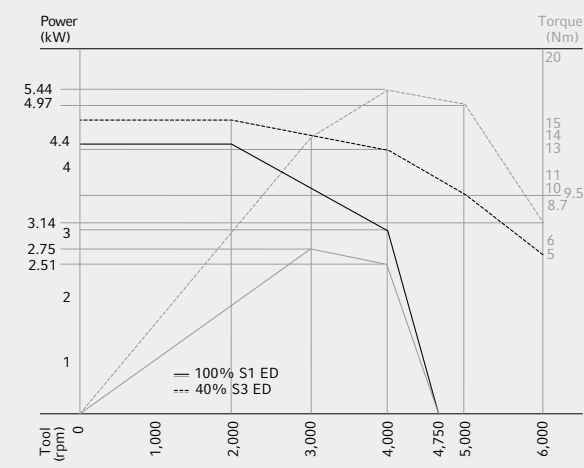
Power diagram of main spindle

Operate 4.7 on SIEMENS
Main spindle 5,000 rpm/16.5 kW/168 Nm (40 % DC)



Power diagram of driven tools

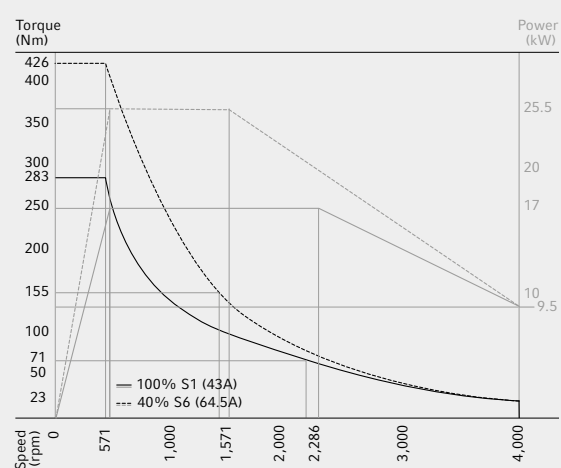
Operate 4.7 on SIEMENS
Driven tools 6,000 rpm/5.44 kW/15 Nm (40 % DC)



Power diagrams CLX 450

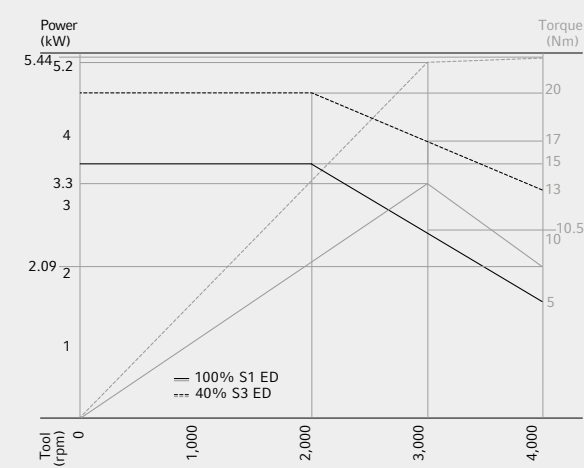
Power diagram of main spindle

Operate 4.7 on SIEMENS
Main spindle 4,000 rpm /25.5 kW/426 Nm (40 % DC)



Power diagram of driven tools

Operate 4.7 on SIEMENS
Driven tools 4,000 rpm/5.44 kW/20 Nm (40 % DC)



CLX series

Technical Data

		CLX 350	CLX 450
Working area			
Swing over bed	mm	610	650
Swing over cross slides	mm	400	ø 465
Max. turning diameter	mm	ø 320 (ø 250 recommended)	ø 400/ø 315*
Cross travel (X)	mm	242.5	267.5
Longitudinal travel (Z)	mm	580	600
Rapid traverse (X/Z)	m/min	30 / 36	30 / 30
Main spindle			
Spindle nose		A2-6	A2-8
Bar capacity	mm	ø 51 (ø 65 option)	ø 80
Front bearing diameter	mm	120	130
Chuck diameter	mm	210**	210**/250**/315**
Drive power (40/100 % DC)	kW	16.5/11	25.5 / 17
Max. torque (40/100 % DC)	Nm	168/112	426/283
Max. speed	rpm	5,000	4,000
Positioning accuracy			
Acc. to ISO 230-2 in X-/Z-axes (indirect measurement system)	µm	5/8	5/10
Acc. to ISO 230-2 for C-axis	arcsec	20	20
Turret		VDI 30	VDI 40
Number of tool stations		12 x VDI 30	12 x VDI 40/6 x BT
Of which driven tool stations		12**	12**
Tool station diameter	mm	30	40
Max. power	kW	5.44	5.44
Max. torque (40 % DC)	Nm	15	20
Max. speed	rpm	6,000	4,000
Tailstock			
Tailstock travel	mm	550	500
Life center interface	MK	4	5
Max. tailstock force	kN	4	8
Guideways			
Ball screw X-/Z-axis (D x P)	mm	32 x 10	40 x 10
Machine weight			
(without chip conveyor)	kg	4,200	4,950/5,050*
(with chip conveyor)	kg	4,700	5,500/5,050*

*Version with V4 (for milling operations), **Optional



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service-hotline.dmgmori.com



Customer First – Our service promise!

“We have good news for you: Our service and spare parts prices have been completely revised. With our service commitments, we want to meet your high demands with the highest service quality.” **Please contact us – your sales and service team is at your disposal!**

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 %*.

NEW



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

NEW



Up to 50 % lower service costs. New Flat Call-Out Rate – without travel expenses or any additional costs!

NEW



Our protective shield for your productivity. Reduced operating costs, highest machine availability and maximum precision – DMG MORI ServicePlus!

NEW

*All information and price advantages for Customer First are available at: customer-first.dmgmori.com