

CTX 310 eco



| BEST TECHNOLOGY AT AN UNBEATABLE PRICE |

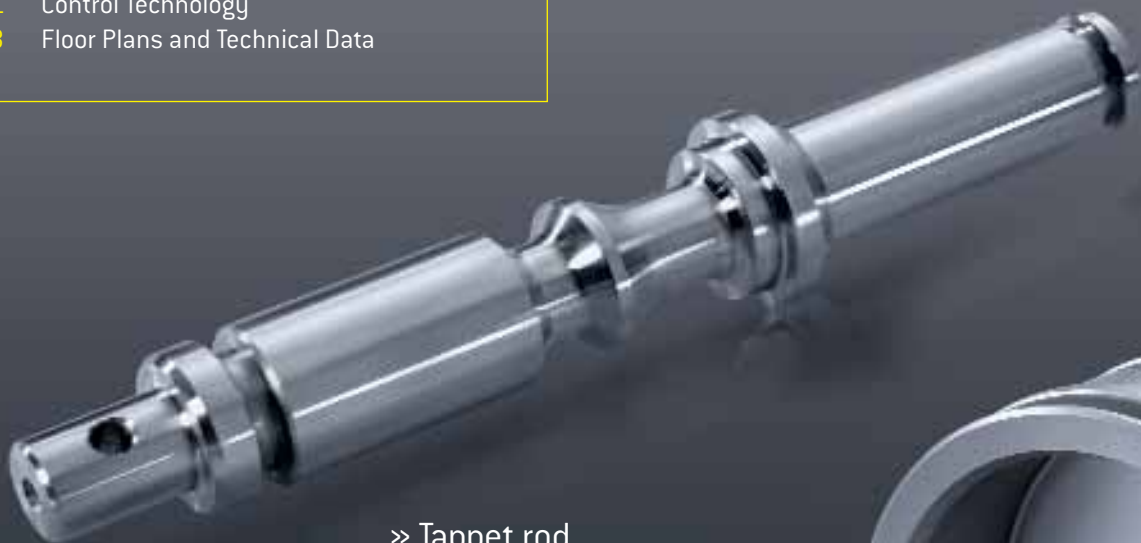
CTX 310 *eco* | CTX 510 *eco*

DMG

MORI SEIKI

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10 11	Control Technology
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» Tappet rod

Industry: Railway
Machine: CTX 310 V3 *eco*
Material: X12CrMo S17
Technology: Drilling with C-axis
Cycle time: 123 sec.



02



» Piston

Industry: Machine construction
Machine: CTX 310 V3 *eco*
Material: 42CrMo4
Technology: Drilling with C-axis
Cycle time: 142 sec.



| ECOLINE – SIMPLY MORE SUCCESS |

»THE TOP SELLER WITH THE MOST UP-TO-DATE COMPONENTS.«

We have to spend wisely in turbulent economic times. That's why DMG / MORI SEIKI developed the ECOLINE series. The goal was to deliver the high quality our customers have come to expect but at an unbeatable price, through consistent standardisation and simple, reliable construction. All ECOLINE machines are equipped with proven components from the world's leading suppliers. With the top-selling CTX 310 *eco* and CTX 510 *eco*, DMG / MORI SEIKI sets a new standard in entry-level turning machines worldwide.

» Piston guide

Industry: Automotive
Machine: CTX 310 V3 *eco*
Material: AlMgSi
Technology: Drilling with C-axis
Cycle time: 98 sec.

» Seal screw

Industry: Automotive
Machine: CTX 310 V3 *eco*
Material: 1.4305
Technology: Milling with C-axis
Cycle time: 117 sec.

» Bolt

Industry: Railway
Machine: CTX 310 V3 *eco*
Material: 16MnCr5
Technology: Milling with C-axis
Cycle time: 118 sec.



The CTX 310 *eco* and the bigger CTX 510 *eco* are impressive CNC universal turning machines for single-part and serial production, featuring comprehensive standard equipment of the highest quality. Driven tools in up to six stations, high dynamics spindle drive and continuously variable rotational speed give you the edge to easily perform demanding turning

operations. Whether in manufacturing facilities with a frequently changing parts spectrum (especially shafts, axles and spindles), training workshops or in custom manufacturing – The ECOLINE universal turning machines will allow you to manufacture parts at the highest technical level.

» Standard equipment includes automatically traversable tail stock

» Visual support for set-up and diagnosis with HEIDENHAIN CNC Pilot 620^[3]



CTX 310 / 510 *eco*

Universal Turning with Higher Dynamics and Precision.

The compact CTX 310 *eco* and CTX 510 *eco* CNC universal turning machines, with their high-tech fittings, put you in position to perform demanding turning operations. With their numerous options, these machines can meet and surpass your requirements for any application.

» 3D simulation with
HEIDENHAIN CNC Pilot 620^[3]

» VDI 30 / 40^[1] turret with 12 tool stations



» Linear drive in all axes



DMG Netservice^[2] – Standard Equipment with all ECOLINE Machines

DMG Netservice gives you access to the service know-how of DMG / MORI SEIKI at the push of a button. Through our secure online connection, a qualified DMG / MORI SEIKI Service Technician can immediately analyze and identify your problem and even provide a direct solution – just like they were there with you.



CTX *eco* – SANDVIK Coromant Tool Package

- » High-productivity tool package (six tools) for turning, drilling, boring, and thread turning
- » Six VDI 30 / 40 tool holders (CoroDrill® 880 indexable drill, CoroTurn® 107 boring bar, shaft fitting with an RC clamp, CoroCut® shaft holder, U-lock thread holder, CoroTurn® TR shaft holder)
- » 70 spare cutting inserts

MACHINE SPECIFICATIONS

CTX 310 V1 *eco* / CTX 510 V1 *eco*

The latest 3D-control software, VDI 30 / 40^[1] turret with 12 tool stations, automatic traversable tail stock, linear guides, hollow clamping device with $\varnothing 51 / 76^{[1]}$ bar passage and hydraulic 3-jaw chuck in the standard version

CTX 310 V3 *eco* / CTX 510 V3 *eco*

Variant with power driven tools (six stations) and C-axis

TECHNICAL HIGHLIGHTS

- » VDI 30 / 40^[1] turret with 12 tool stations, up to six of which can be fitted with driven tools
- » Digital drive and linear guides in all axes for better dynamics and highest precision
- » Automatically traversable tail stock for the highest machining flexibility
- » High dynamics spindle drive with 16.5 / 33^[1] kW (40 % DC), 166.5 / 630^[1] Nm (40 % DC) and 5,000 / 3,250^[1] rpm

^[1] Data for the CTX 510 *eco* ^[2] Valid for new orders after 1 April, 2010; technical specifications guaranteed; not for MAPPS IV

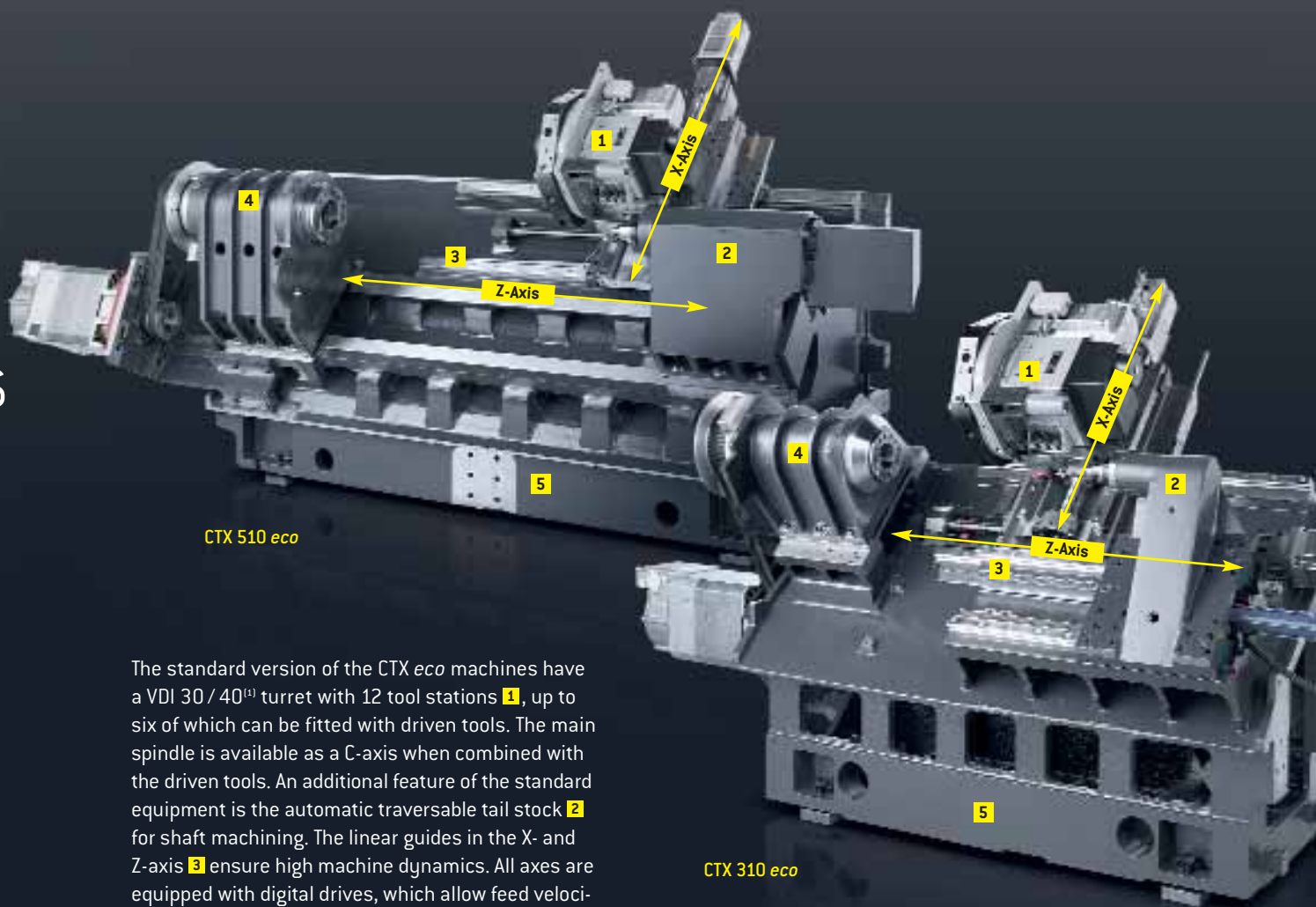
^[3] Available starting 02/2011 (CTX 510 *eco*) and 04/2011 (CTX 310 *eco*)

| MACHINE DESIGN |

»BETTER STANDARD EQUIPMENT AND TECHNICAL DETAILS.«

In their standard versions the CTX 310 *eco* and CTX 510 *eco* universal turning machines are fitted with the most up-to-date high-tech components. They can be adapted to your most demanding requirements through numerous options.

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The standard version of the CTX *eco* machines have a VDI 30 / 40⁽¹⁾ turret with 12 tool stations **1**, up to six of which can be fitted with driven tools. The main spindle is available as a C-axis when combined with the driven tools. An additional feature of the standard equipment is the automatic traversable tail stock **2** for shaft machining. The linear guides in the X- and Z-axis **3** ensure high machine dynamics. All axes are equipped with digital drives, which allow feed velocities of 24 m/min in the X-axis and 30 m/min in the Z-axis [X / Z = 30 / 30 m/min]⁽¹⁾. With their high dynamics spindle drive **4**, continuously adjustable rotational speeds of 5,000 / 3,250⁽¹⁾ rpm, power of 16.5 / 33⁽¹⁾ kW (40 % DC) and a torque of 166.5 / 630⁽¹⁾ Nm (40 % DC), the CTX 310 *eco* and CTX 510 *eco* are the best platform for your challenging turning operations in the diameter range to 200 / 465⁽¹⁾ mm with chuck

components [51 / 76⁽¹⁾ mm on the bar machining option]. Direct measuring systems on the spindle, when combined with the latest CNC controls from SIEMENS, HEIDENHAIN or MORI SEIKI, ensure the highest positioning accuracy. The 4-track bed **5** is optimally suited for flexible machining requirements. [Machine weight: 3,200 / 7,650 kg⁽¹⁾].

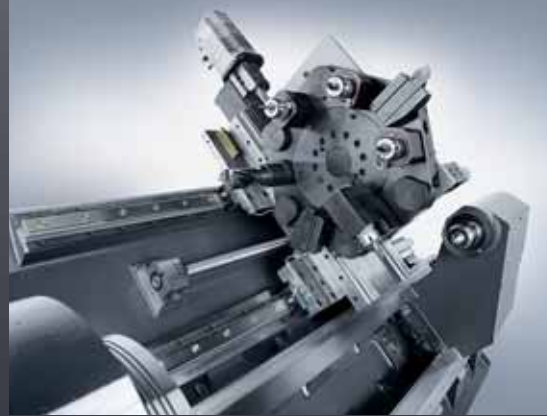
⁽¹⁾ Data for the CTX 510 *eco*

TURRET



CTX 310 *eco*

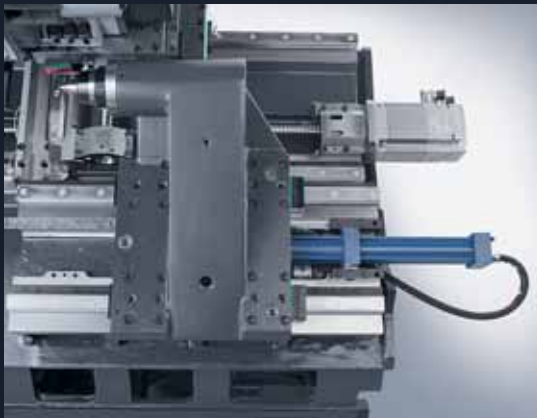
The VDI 30 turret with 12 tool stations (up to 6 can be driven) ensure a simple and fast machine set-up, while the machine's mechanical stability and rugged construction ensure a highly efficient power transfer to the machining process.



CTX 510 *eco*

The VDI 40 turret with 12 tool stations (up to 6 can be driven) ensures a simple and fast machine set-up. And the quick change servo-turret with axial drives in the V3 versions reduces idle time and increases productivity.

TAIL STOCK



CTX 310 *eco*

Standard equipment includes a cast iron tail stock with an MK4 sleeve, which is driven by a separate hydraulic cylinder that does not interrupt the machining process (toggle switch or M-function).

- » Travel: 400 mm
- » Max. pressure: 400 daN



CTX 510 *eco*

The CTX 510 *eco* tail stock is coupled to the Z-slide and thus automatically traversed (M-function or manual) and is hydraulically connected to the linear drive.

- » Sleeve range: 150 mm
- » Travel: 850 mm
- » Max. pressure: 1,200 daN
- » MK5 live centre

MAIN SPINDLE



CTX 310 *eco*

The main spindle construction (using high-speed precision bearings) with belt drive on the machine bed of cast iron can perform highly demanding work consistently while ensuring stability and low maintenance costs. The hollow clamping device with 51 mm bar passage is included as standard equipment.

- » Bar passage: 51 mm
- » Tensile force (at 40 bar): 44 kN
- » Piston stroke: 20 mm



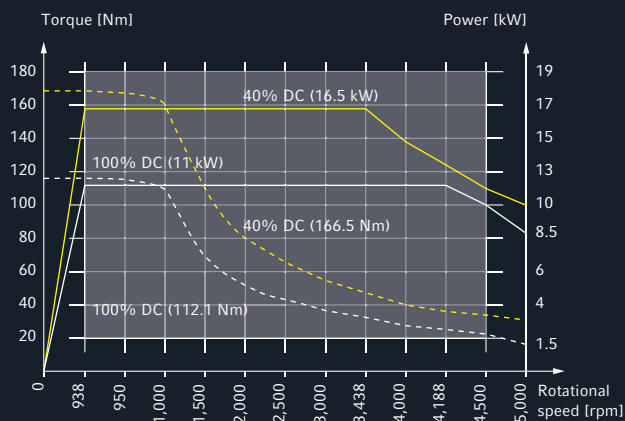
CTX 510 *eco*

The CTX 510 *eco*'s symmetrically constructed main spindle increases thermal stability. The hollow clamping device is available in both standard and 90 mm bar passage versions.

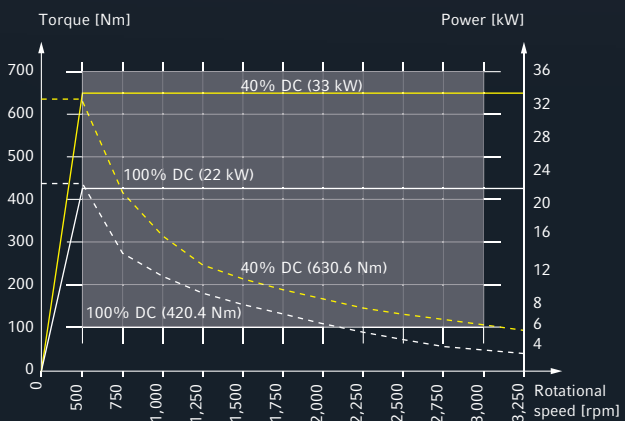
- » Bar passage: 76 mm [90 mm^[2]]
- » Tensile force (at 40 bar): 61 kN [86 kN^[2]]
- » Piston stroke: 25 mm [35 mm^[2]]

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PERFORMANCE DIAGRAMS



CTX 310 *eco* main spindle^[3]



CTX 510 *eco* main spindle^[3]

| OPTIONS |

» INDIVIDUAL OPTIONS TO MEET ALL REQUIREMENTS.«

PERFORMANCE YOU CONTROL

The various option packages ensure increased process reliability and lower maintenance expenses. Additional options, such as an enhanced coolant pump or customisable M-function controls, can adapt the machine to any fabrication requirement.

OPTION PACKAGES

Bar package

Includes hinged belt chip conveyor, interface for a bar feeder system or bar loading magazine, work piece collection device and 4-colour signal lamp

Chip removal package

Includes hinged belt chip conveyor, set of soft jaws (three) for hydraulic 3-jaw chuck, 4-colour signal lamp

Presetting package

Includes tool measurement device (manual), hinged belt chip conveyor and 4-colour signal lamp



1 Work piece collection device (part of the bar package)

OPTIONS

CTX 310 eco / CTX 510 eco

Coolant pistol, tool measurement device, 12-bar enhanced coolant pump, customisable M-functions for SIEMENS, HEIDENHAIN and MORI SEIKI controls, collet chuck, chuck, set of hard gripper jaws

ADDITIONAL OPTIONS

CTX 510 eco

Hydraulic 3-jaw chuck with \varnothing 315 mm, hollow clamping device with 90 mm bar passage; for shaft machining: steady rest slide, hydraulic steady rest with jaw capacity of \varnothing 20 – 165 mm (incompatible with the bar package)



2 Machining with driven tools



3 Shaft machining with tail stock and steady rest

3D

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SLIMline® Panel with SIEMENS 810D powerline and ShopTurn

Highlights

- » Digital processing controls including NC and PLC
- » Easiest programming with 3D simulation
- » 15" TFT screen with clearly arranged screen layout
- » Unique shop floor programming with ShopTurn
- » Ethernet interface for fast data transfer;
CompactFlash memory card compatibility
- » Full keyboard and electronic hand wheel
- » Comprehensive tool management with visual display
- » Diagnosis and maintenance visualisation
- » External program development with control-identical
SinaTrain training software
- » SMARTkey®

| ECOLINE CONTROLS |

»THE LATEST CONTROL TECHNOLOGY AND 3D-SIMULATION.«

Both the CTX 310 *eco* and the CTX 510 *eco* are fitted with up-to-date CNC controls from SIEMENS, HEIDENHAIN and MORI SEIKI. Up to a 15" colour screen, full keyboard and electronic hand wheel form the basis of impressive hardware performance.

Several software features contribute to the comfort and support of the operator on the shop floor, including the ShopTurn software integrated into the SIEMENS control, likewise for HEIDENHAIN and MAPPS IV. All systems guarantee the fastest path from drawing to finished workpiece. Other distinctive control features include comprehensive tool management, visually supported set-up and the extensive diagnostic functions, also visually-supported.

MAPPS IV from MORI SEIKI

Highlights

- » 10.4" TFT screen
- » MAPPS IV system software with control panel running on a Windows PC as front-end
- » Ports for USB devices and SD cards
- » Efficient programming with dynamic 3D work piece simulation
- » Fast program development using large cycle memory and programming support
- » Versatile contour and template programming
- » Powerful tool and technology management



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SLIMline® Panel
with HEIDENHAIN CNC Pilot 620⁽¹⁾**Highlights**

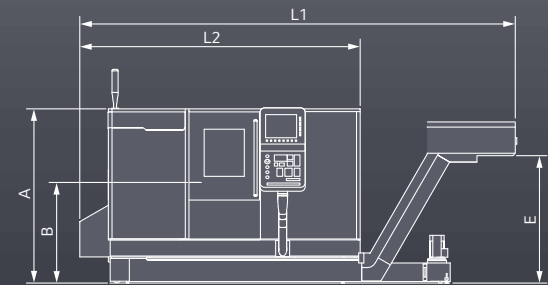
- » Shop floor-oriented programming with visual support
- » User-friendly machining cycles
- » Fast data interfaces for external program development
- » USB interface on the control panel
- » Large 15" TFT screen adds to operator comfort
- » Work piece and tool measuring cycles using touch probe systems
- » Work piece alignment cycles using touch probe systems
- » Visual simulation of work piece machining.
- » Free contour programming
- » SMARTkey®



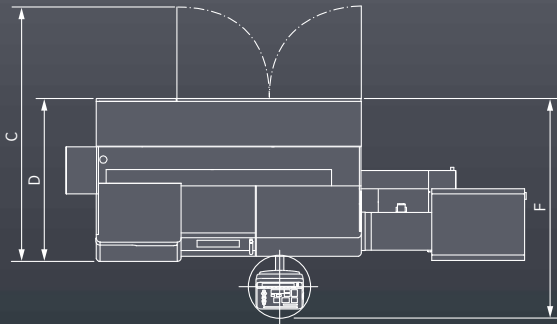
⁽¹⁾ Available starting 02/2011 (CTX 510 *eco*) and 04/2011 (CTX 310 *eco*)

FLOOR PLANS | WORK AREAS

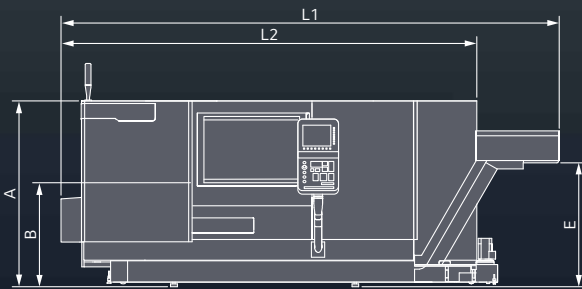
CTX 310 eco floor plan, Frontal view



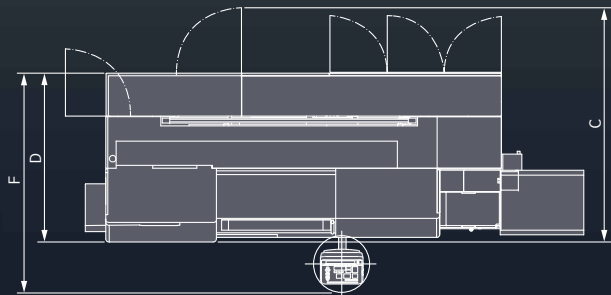
Top view



CTX 510 eco floor plan, Frontal view



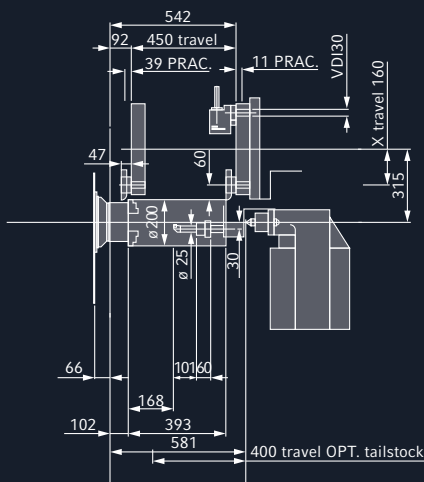
Top view



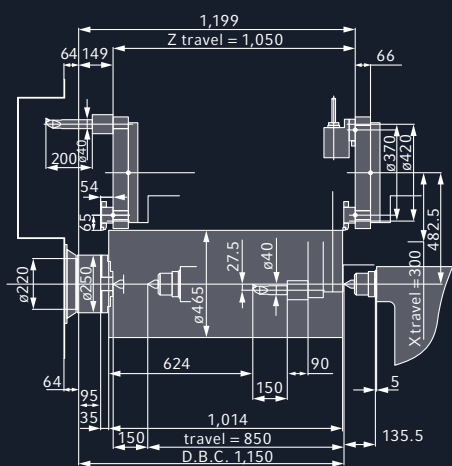
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Machine	A	B	C	D	E	F	L1	L2
CTX 310 eco	1,742	1,010	2,401	1,536	1,279	2,071	4,325	2,785
CTX 510 eco	1,919	1,060	2,456	1,744	1,271	2,269	5,223	4,360

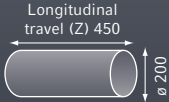



CTX 310 eco work area



CTX 510 eco work area



TURNING DIAMETER | BAR PASSAGE | WORK PIECE DIMENSIONS

	CTX 310 <i>eco</i>	CTX 510 <i>eco</i>
<p>The CTX <i>eco</i> series is an excellent platform for larger work pieces. The series features a maximum turning diameter of 465 mm and a bar passage of 76 mm (for the CTX 510 <i>eco</i>) as standard equipment. The optional steady rest combined with the standard tail stock allows machining of work pieces up to 800 kg. For larger passage, there is an optional hollow clamping device with ø 90 mm bar passage available.</p>	<p>Max. turning diameter</p> 	<p>Longitudinal travel (Z) 1,050</p> 
	<p>Bar passage</p> 	<p>Bar passage</p> 

TECHNICAL DATA

Machine type		CTX 310 <i>eco</i>	CTX 510 <i>eco</i>
Work area			
Max. swing diameter	mm	330	680
Max. swing diameter above cross-guideway	mm	260	465
Max. turning diameter	mm	200	465
Cross travel (X)	mm	160	300
Longitudinal travel (Z)	mm	450	1,050
Main spindle			
Spindle head (flat flange)	mm	140h5	220h5
Bar capacity	mm	51	76 / 90 ^[1]
Spindle diameter in the front bearing	mm	100	140
Chucks	mm	210	250
Power output (40 / 100 % DC)	kW (AC)	16.5 ^[2] / 11 ^[2]	33 ^[2] / 22 ^[2]
Max. torque (40 / 100 % DC)	Nm	166.5 ^[2] / 112 ^[2]	630 ^[2] / 420 ^[2]
Max. rotational speed	rpm	5,000	3,250
Tool holder			
Number of tool stations		12	12
Driven tool stations ^[1]		6	6
Shaft diameter (according to DIN 69880)	mm	30	40
Power output (40 % DC) at 4,000 rpm	kW	8.4 ^[2]	8.4 ^[2]
Max. torque (40 % DC)	Nm	20 ^[2]	20 ^[2]
Max. rotational speed	rpm	4,500	4,000
Tail stock			
Tail stock hub (automatic traversable)	mm	400	850
Centre punch receiver	MK	4	5
Tail stock power	daN	400	1,200
Tours			
Ball screw X- / Z-axis (D × P)	mm	32 × 10	40 × 10
Machine weight with a chip conveyor	kg	3,800	8,100
Controls			
SLIMline® Panel with SIEMENS 810D powerline and ShopTurn		•	•
SLIMline® Panel with HEIDENHAIN CNC Pilot 620 ^[3]		•	•
MAPPS IV from MORI SEIKI		•	•

^[1] Options ^[2] Technical data for the Siemens 810D powerline ^[3] Available starting 02/2011 (CTX 510 *eco*) and 04/2011 (CTX 310 *eco*)

SERVICE SOLUTIONS: ANYWHERE, ANYTIME.

Customised service solutions and products for the entire life of your machine tool from DMG / MORI SEIKI.



ECOLINE CLAMPING KIT

High-quality clamping device with superior grip

The complete package is furnished with components manufactured to the highest quality standards, perfectly adapted for the turning machines in the ECOLINE series. Included is an extremely strong clamping device for the most precise bar machining. The innovative quick-change feature facilitates fast and easy change over.

Advantages For You:

- » Unparalleled overall and surface quality
- » One year warranty on collet chuck
- » 100 % compatible with all current collet and quick-change chucks
- » Consistent and precise clamping
- » Non-stick coating for the highest precision



DMG / MORI SEIKI ENERGYSAVE

Easiest to use – minimum capital expenditure – maximum savings

DMG / MORI SEIKI EnergySave yields electricity savings of up to 100 %! The innovative hardware module automatically switches the machine to hibernation mode during inactive periods and places it in the familiar emergency stop mode.

Advantages For You:

- » Energy cost savings of up to 100 %
- » Short pay back period
- » Up to 10 variable switching periods
- » Simplest machine restart
- » Complete hardware module incl. master switch



UNO 115 eco

Best price-performance ratio in its class

UNO 115 eco – The entry-level machine for tool presetting

- » Rugged machine with small floor space requirements for tool dimensions up to \varnothing 230 mm and measurement lengths up to 370 mm
- » One-handed operation with infinite fine adjustment in the X-axis and Z-axis traverse paths
- » Pneumatic clamp in both axes
- » Edge finder quickly focuses on the tool's cutting edge
- » CMOS digital camera with telecentric lens
- » Simple handling via intelligent image processing
- » Unmatched price-performance ratio

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