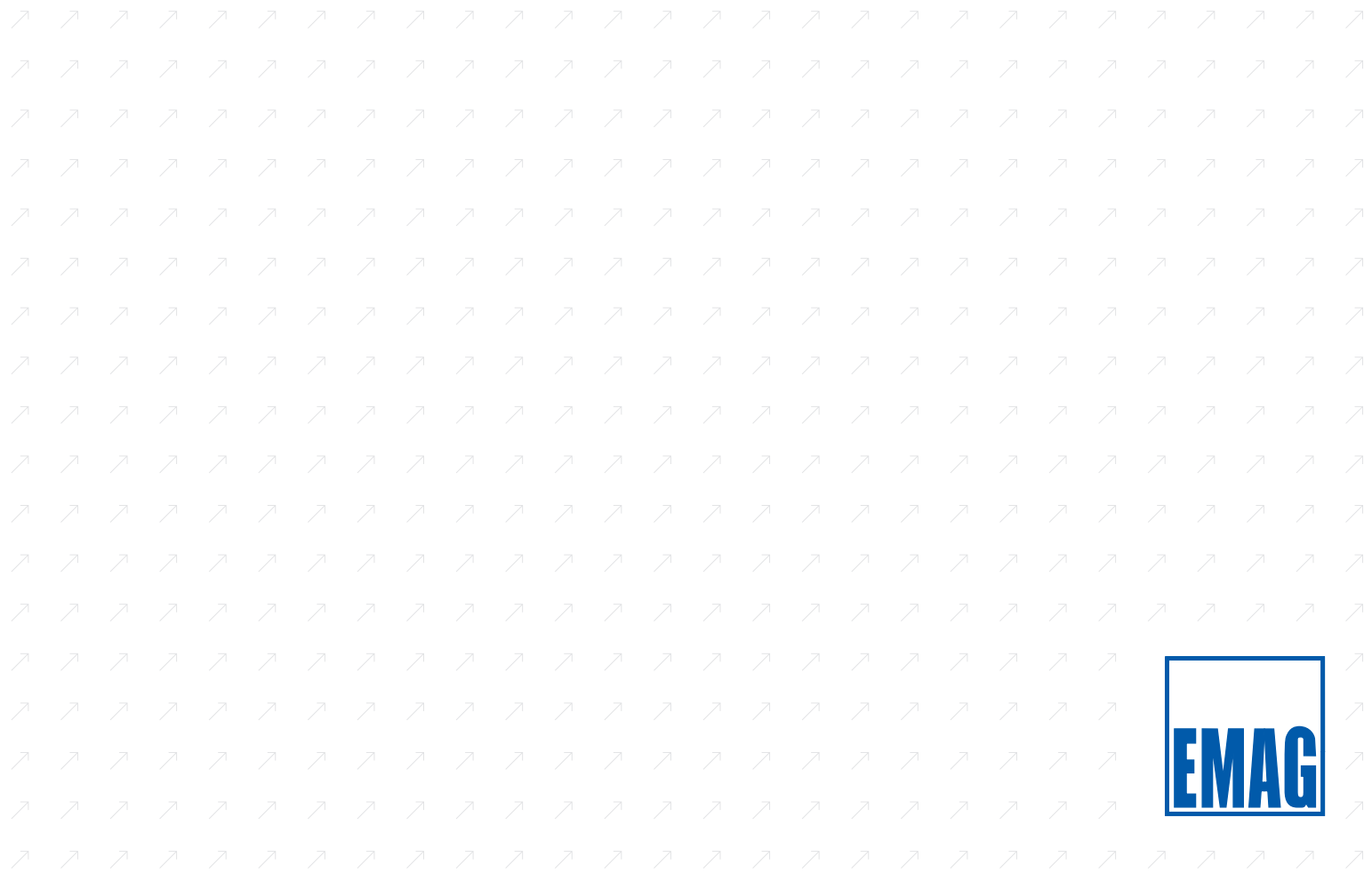
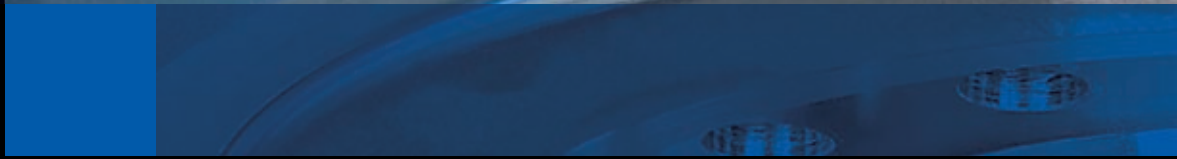
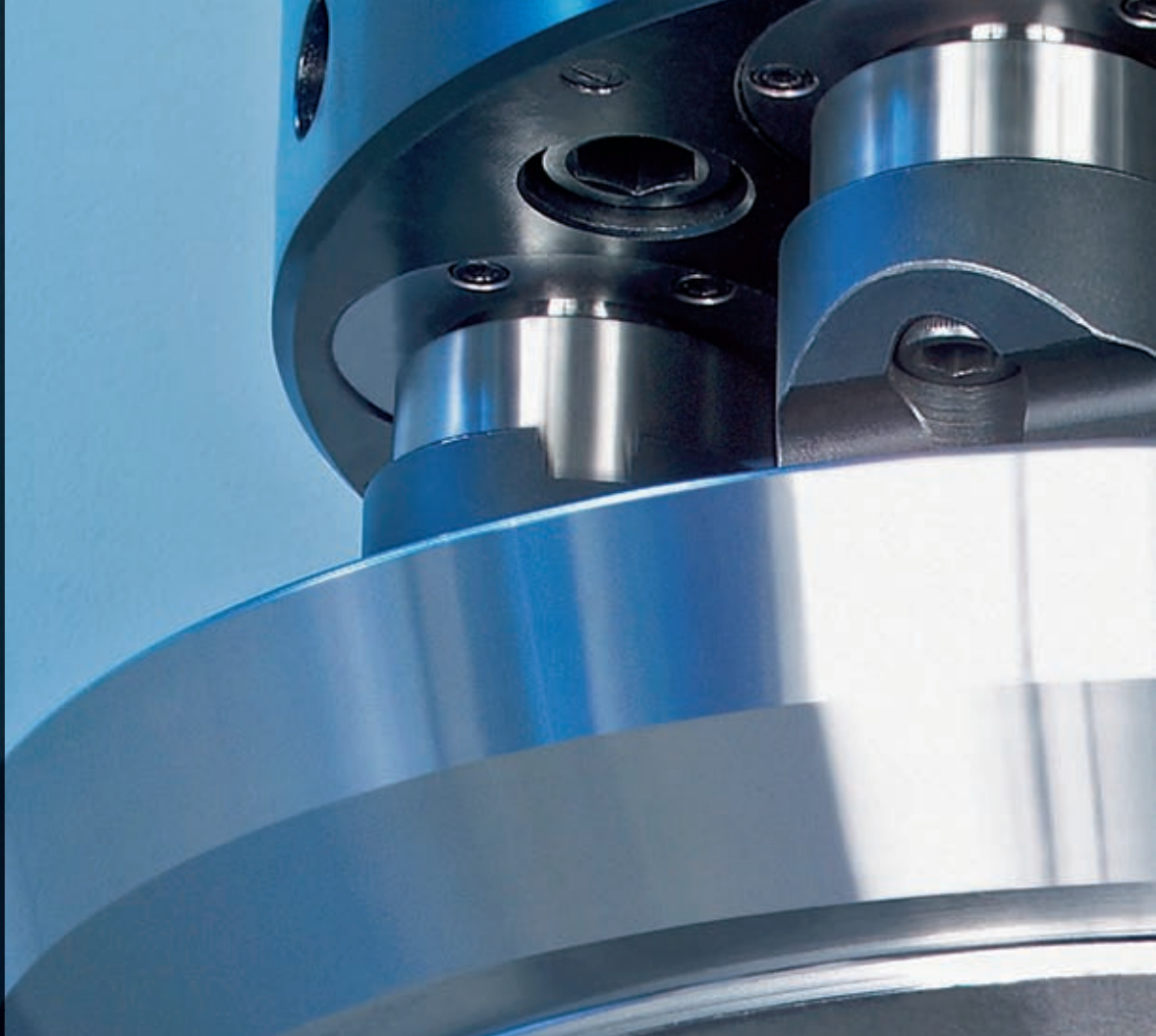


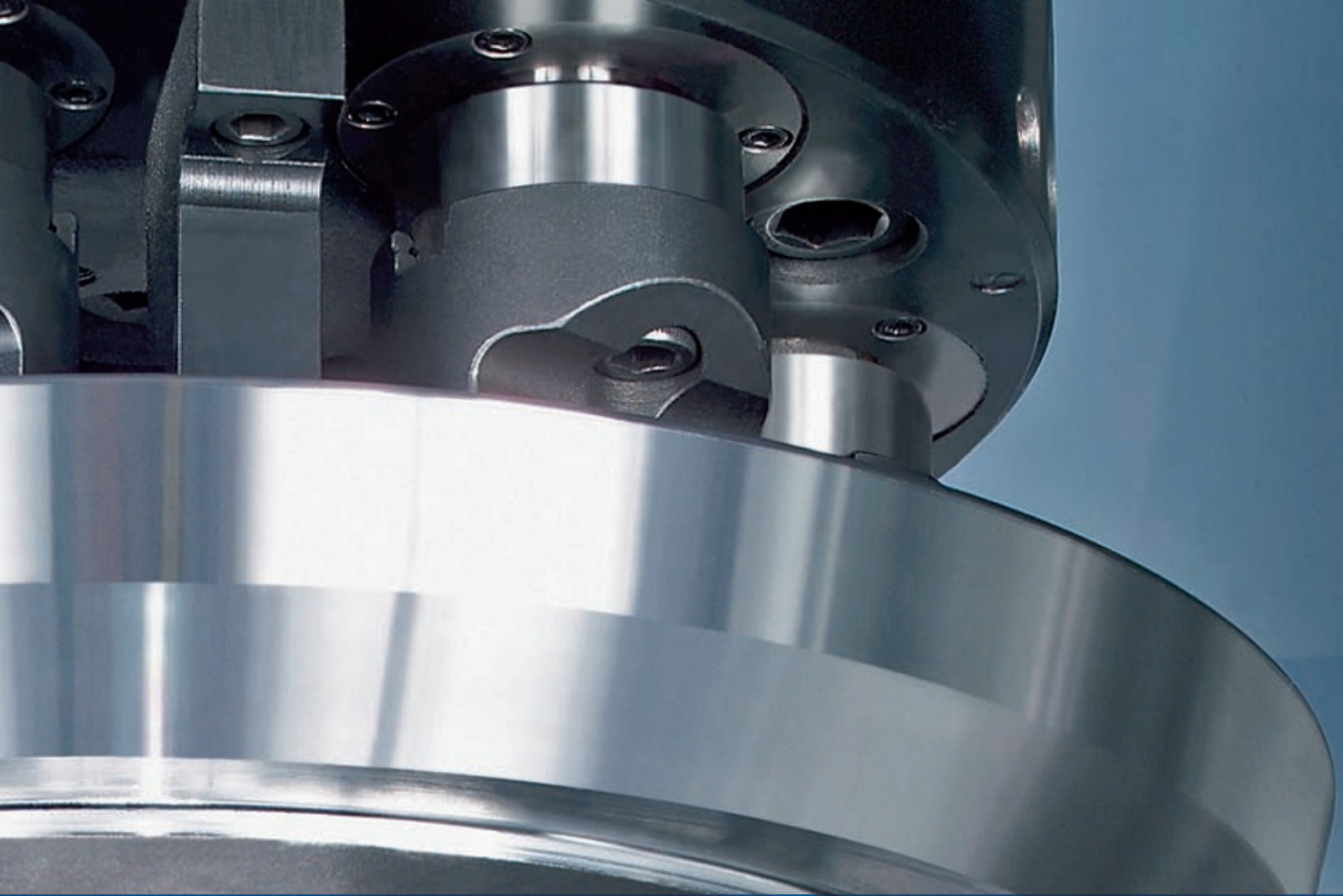
Vertical multi-functional
turning cells
VLC 500 / 630 / 800
VLC 1200



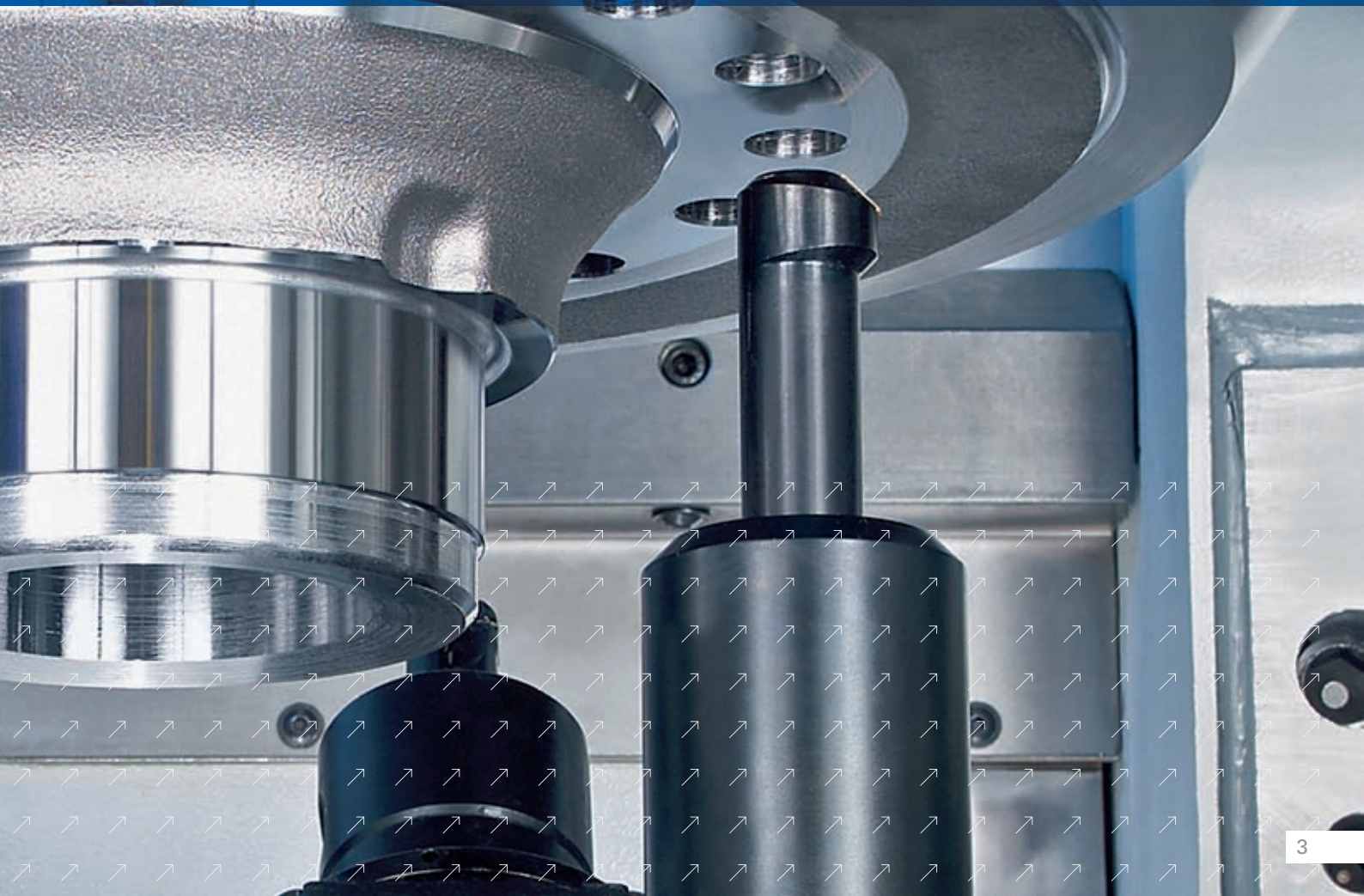
Workpieces are becoming more complex and more precise, batch sizes smaller and throughput times shorter. The answer to these demands is to use the high-performance multi-functional machines of the VLC series. Producing components in a single set-up through technology integration. Heavy-duty machining at the highest precision.

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- V L C 6 3 0
- V L C 8 0 0
- V L C 1 2 0 0



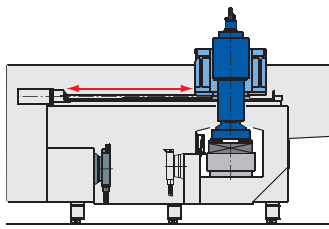


VERTICAL MULTI-FUNCTIONAL PRODUCTION CENTERS

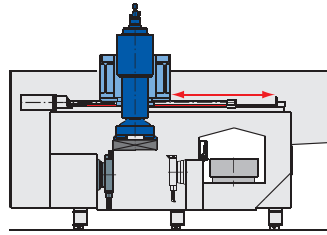


Precision + power = VLC.

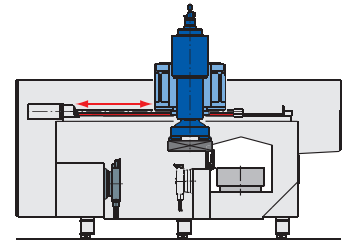
Three functions on the smallest footprint:



*Pick-up position:
automatic loading and
unloading of the workpiece.*



*Machining position:
turning, drilling, milling,
grinding.*

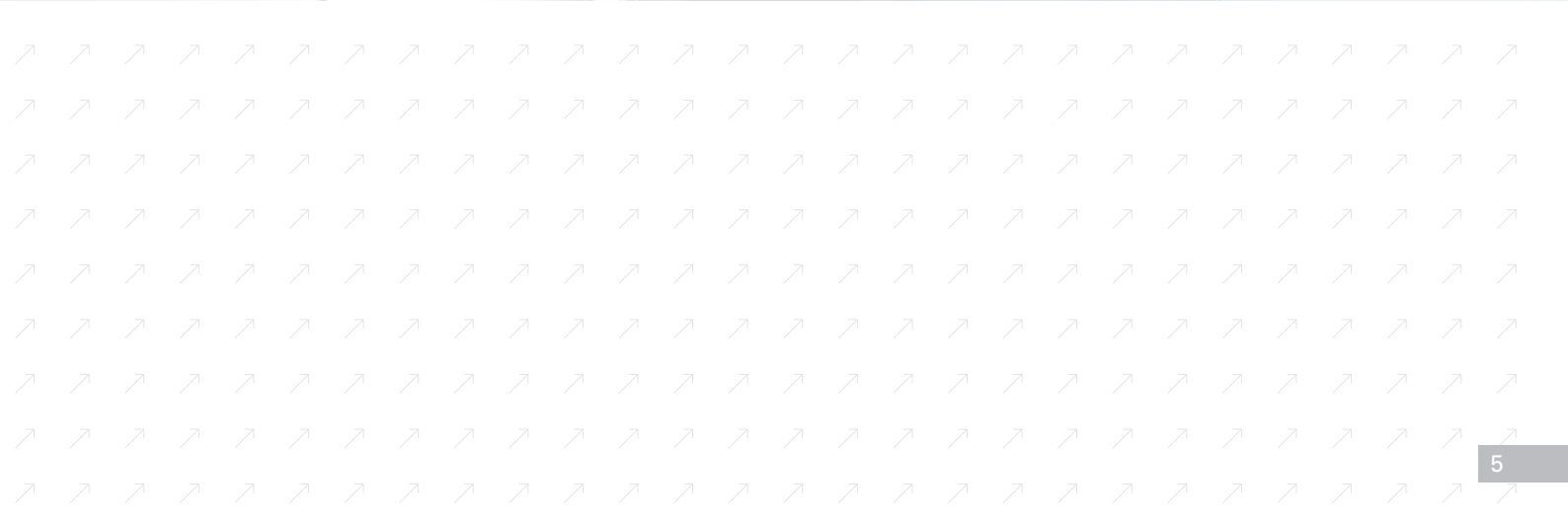


*Gauging position:
measuring the workpiece and
processing the offsets.*

VLC 500
VLC 630
VLC 800

The cornerstone of the VLC series is a sturdy machine base in high quality polymer granite MINERALIT®. This type of construction guarantees the highest precision, an outstanding surface finish and an extended tool life when machining chucked components. VLC machines with optional Y-axis and additional drilling, milling or grinding spindles – which can also be used in multiples – offer a combination of turning

and machining center for the perfect complete-machining of round and not-so-round components. As always at EMAG, automation is an integral part of the VLC machines.

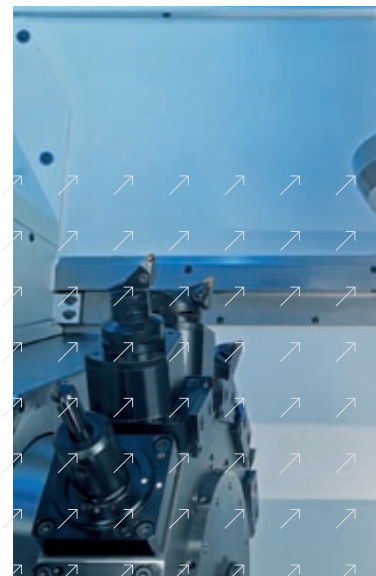


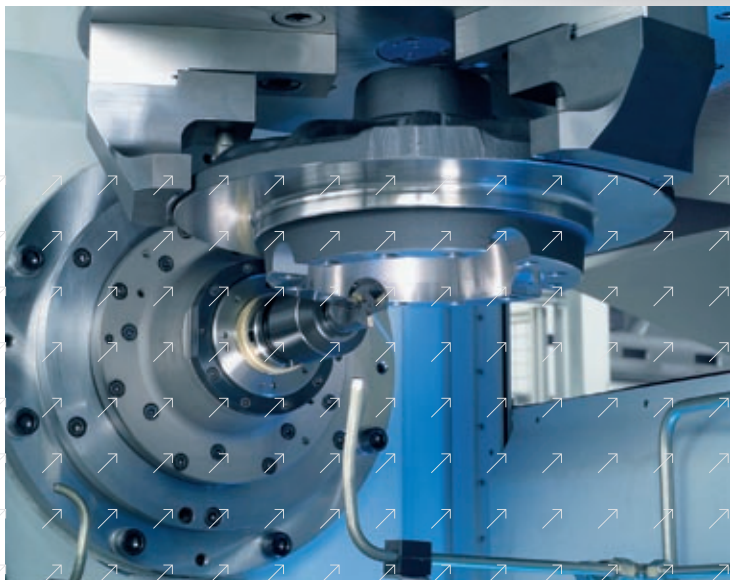
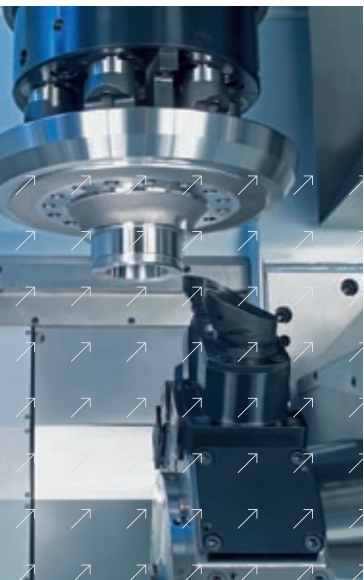
The VLC series - complete-machining through technology integration.

Work spindle and workpiece travel in the main axes X and Z, optionally also in Y. The tooling systems can be used in shuttle mode, for either serial or parallel operations, for which optional second X- and Z-axes are available. With work spindle and workpiece positioned overhead and the tools aligned underneath, chips can fall unhindered onto the chip conveyor below. The VLC series of machines accommodates almost all metal cutting technologies: soft and hard

machining, interrupted cuts, turning, drilling, milling and grinding.

VLC 500
VLC 630
VLC 800



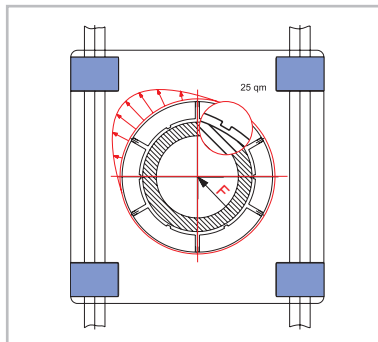


Heavy-duty machining at the highest precision.

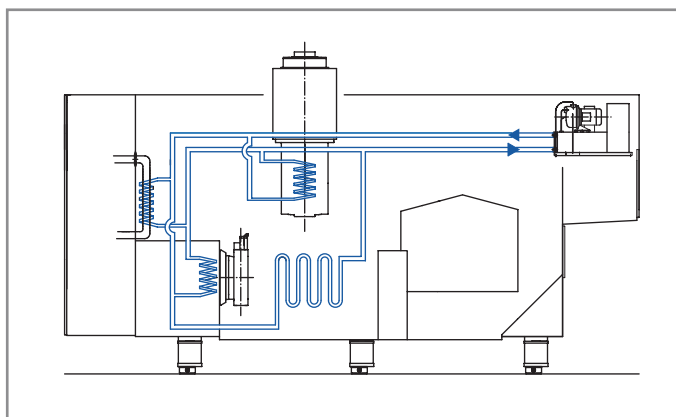
The overhead slide contains the quill unit with its integral work spindle and carries out the X-axis movement (on the VLC DD version also that of the Y-axis). During the Z-axis movement the quill unit travels in the oil pockets of the play-free, non-friction, wear-resistant hydrostatic guideway. The thin oil film provides the best possible damping effect, a prerequisite for outstanding surface finish and extended tool life – even when interrupted cuts are employed.

Absolute position feedback systems guarantee a high degree of constantly maintained precision and make machine referencing unnecessary.

VLC 500
VLC 630
VLC 800
VLC 1200



The hydrostatic guideway principle.



All accuracy defining machine elements are connected to the fluid-cooling system.



Quality management carried out by the machine.



Measuring too is an integral part of the VLC design principle. On its way from machining to unloading position the workpiece passes a stationary measuring probe or plug gauge located outside the machining area. Here the component is measured without the results being adversely affected by chips or dirt particles. Measuring is done with the workpiece in its original set-up. High-precision components are returned to the machining area after measuring, to be finish-machined to size once the necessary tool offsets have been implemented.

VLC 500
VLC 630
VLC 800
VLC 1200

Large doors provide operator-friendly access to the machining area. Safe viewing of machining area and overhead slide unit is ensured by a large window at the front.





VLC 1200 – the heavy-weight world champion.

The VLC 1200 – at the moment the largest pick-up machine in the world – can vertically machine workpieces of up to 1,200 mm diameter and 2,000 kg in weight. As always with EMAG, automation forms an integral part of the machine. It means that the VLC 1200 practically loads itself. Major areas of application for this type of machine are large chucked components for construction machinery (drive technology), WTGS and industrial transmission systems.

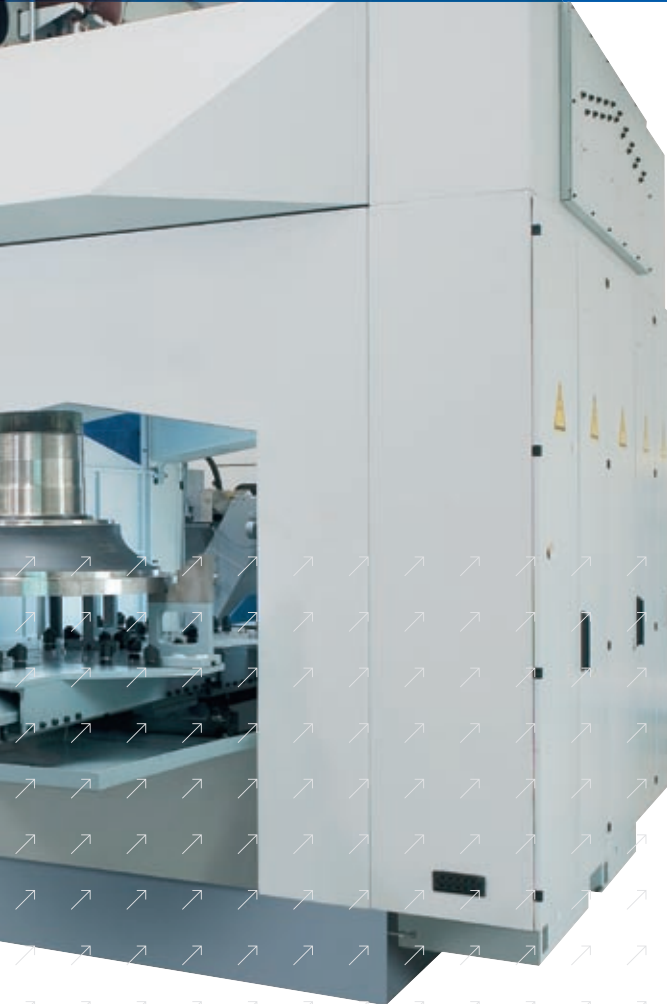
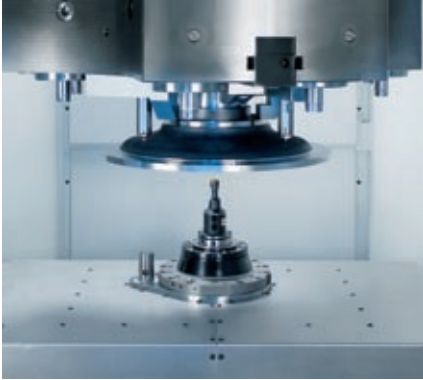
Technology integration: turning, drilling, milling, grinding, gear cutting – all on a single machine.

The VLC 1200 design is that of a sturdy turning platform. The outstanding characteristics of the pick-up work spindle with direct driven synchronous motor (no gear shaft) include its high power and torque ratings. The use of gearless drives ensures that technologies demanding an exceptionally high control performance and synchronicity (for instance grinding and gear cutting) can be integrated into the machine platform.

The integrated A-axis permits helical gearing and the B-axis supports angular infeed grinding.

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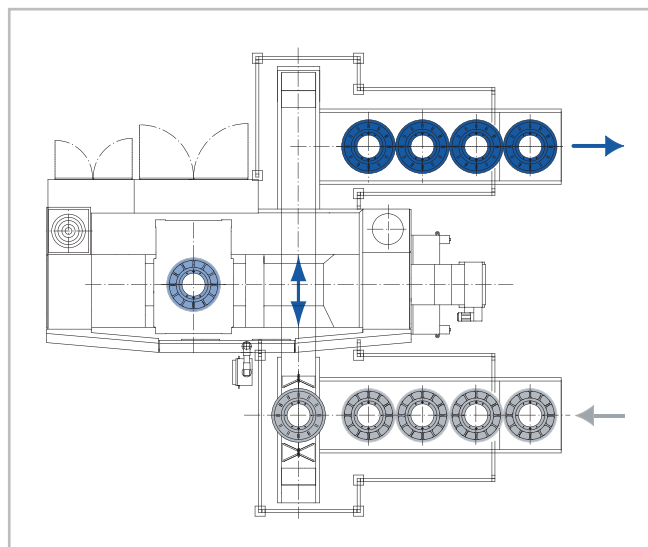
The direct driven spindle of the machine also lends a high degree of process-capability to the machining of outstanding surface finishes and the adherence to tight tolerances (precision bores). To enable the user to fully utilise the VLC 1200 in a flexible workshop environment EMAG offers a tool changer with chain magazine. The tooling system is of the single-station type and integrated into the B-axis. The position opposite the turning tool receptor is occupied by a milling spindle that can also be equipped with Y-axis, if required. This allows for the use of a large number of different tools.

Automation integrated.

The VLC design allows for a speedy, space-saving, technically simple – and therefore operationally safe and cost-effective – workpiece changeover and transport.

The workpieces are conveyed to the pick-up station and clamped directly in the chuck.

VLC 500
VLC 630
VLC 800
VLC 1200



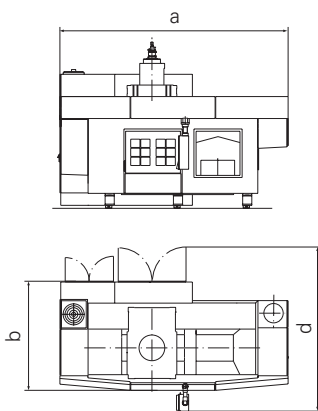


Technical data.

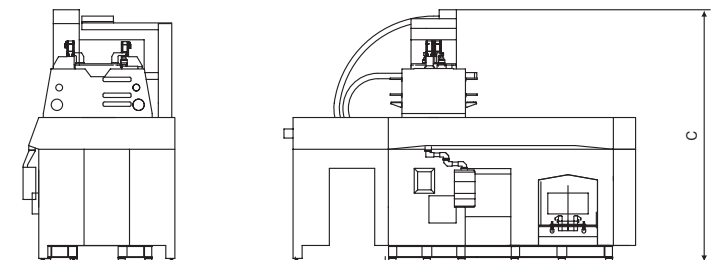
Capacity			VLC 500	VLC 630	VLC 800	VLC 1200
Chuck diameter, max.	mm		500	630	800	1,250
Swing diameter	mm		820	820	820	1,500
Travel in X	mm		2,350	2,350	2,350	2,960
Travel in Y	mm		–	–	–	200
Travel in Z	mm		700	500	700	1,000
Main spindle						
Spindle nose to DIN 55 026	Size		11	11	Z 380	Z 520
Spindle bearing, front	dia. in mm		190	190	240	420
Spindle speed, max.	rpm		2,400	800	500	500
Main drive						
Power rating, max.	kW		110	74	46	88
full power at spindle speed of	rpm		950	160	200	120
Torque, max.	Nm		1,300	2,800	3,100	5,000
Feed drives						
Rapid traverse speed in	X / Z	m/min	45 / 20	45 / 20	45 / 20	25 / 25
Rapid traverse speed in	Y	m/min	–	–	–	15
Feed force in	X / Z	kN	25 / 10	25 / 10	25 / 10	25 / 15
Feed force in	Y	kN	–	–	–	10
Ball screw in	X	dia. in mm	63	63	63	2 x 63
Ball screw in	Z	dia. in mm	50	50	50	2 x 50
Tooling systems						
EMAG disc-type turret, left						
Tool receptors	Qty		12 / 8	12 / 8	12 / 8	–
for cylindrical shanks to DIN 69 880						
Shank diameter	mm		50 / 60*	50 / 60*	50 / 60*	–
EMAG disc-type turret, right						
Tool receptors	Qty		12	12	12	–
for cylindrical shanks to DIN 69 880						
Shank diameter	mm		50	50	50	–
Tool magazine						
Receptors	Qty		–	–	–	36
HSK 100, for turning tools HSK 100-F160						

*without live tool

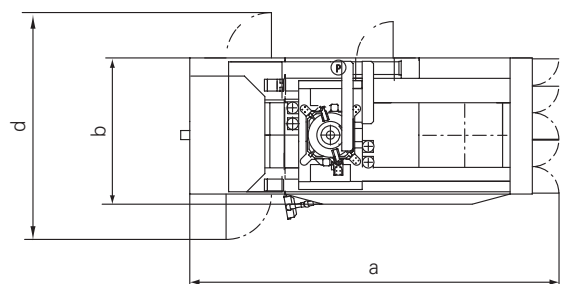
Turning and grinding unit		VLC 500	VLC 630	VLC 800	VLC 1200
Turning tools / live tools	Qty	-	-	-	24
Tool receptors, cylindrical shank	dia. in mm	-	-	-	HSK 100
Grinding spindles	Qty	-	-	-	1
Tool length max.	mm	-	-	-	350
Weights and measurements					
Length a	mm	6,150	6,150	6,150	8,200
Width b	mm	2,600	2,600	2,600	3,000
Height c	mm	3,950	3,950	3,950	5,500
Width d (open doors)	approx. mm	3,900	3,900	3,900	5,000
Weight, total machine	approx. kg	26,000	28,000	30,000	60,000



Floorplan
VLC 500 / 630 / 800



Floorplan
VLC 1200



Subject to technical changes

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