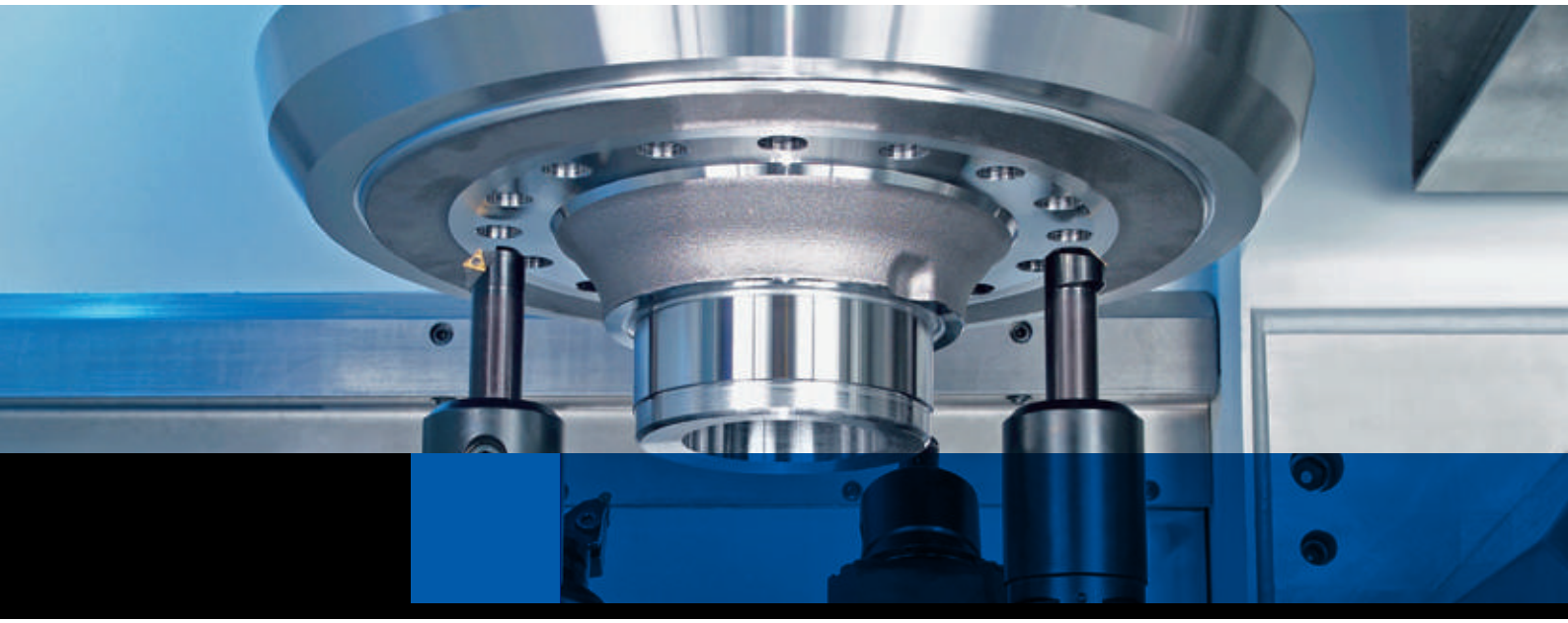
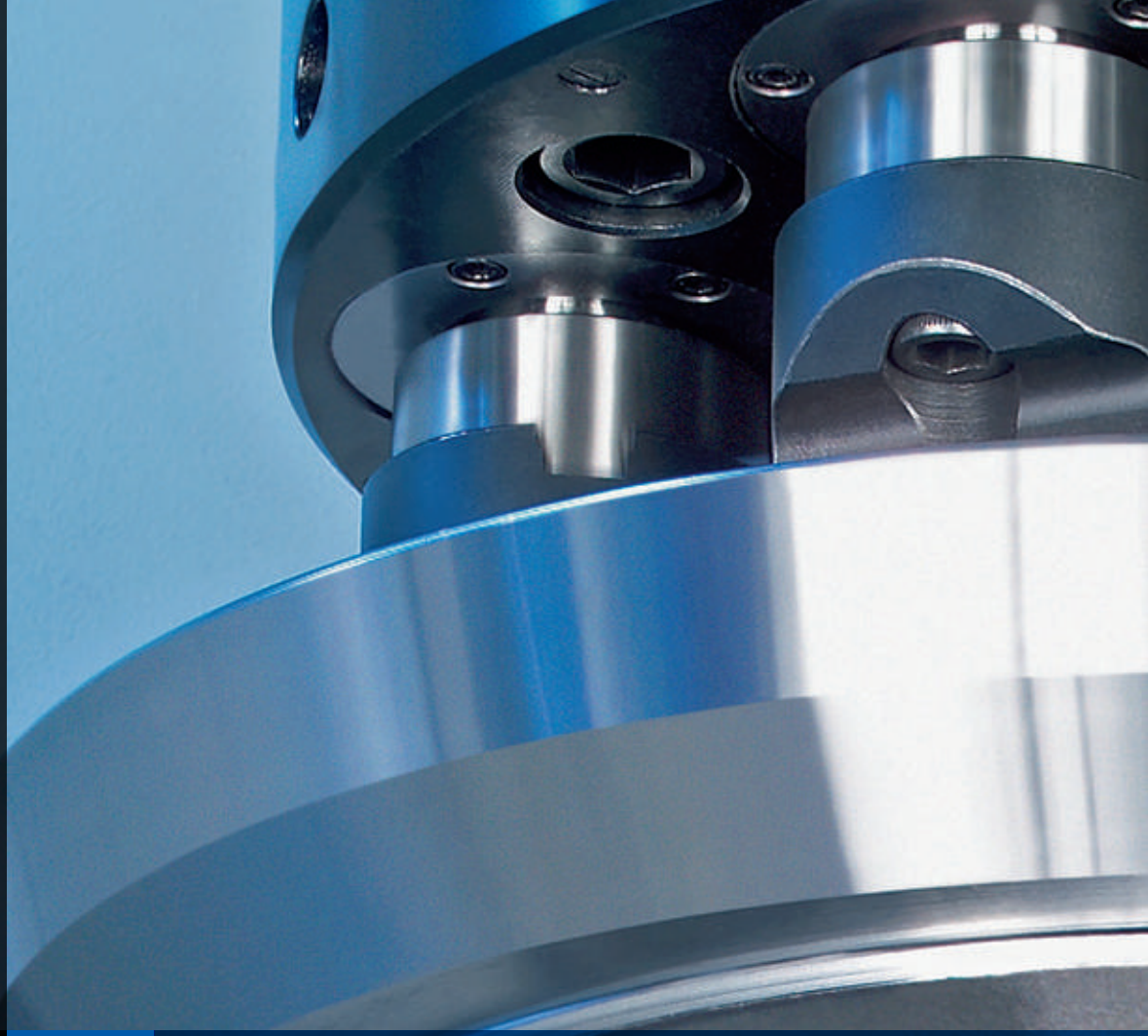
Vertical Multifunctional Turning Cells

VLC 500 / 800
VLC 1200



EMAG

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

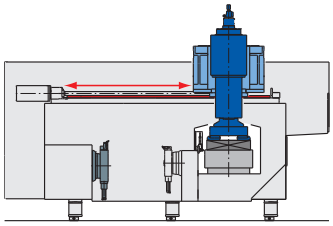


V L C 5 0 0
V L C 8 0 0
V L C 1 2 0 0

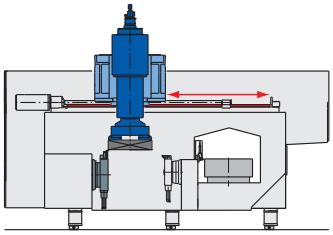
VERTICAL MULTIFUNCTIONAL PRODUCTION CENTERS

Precision + Power = VLC

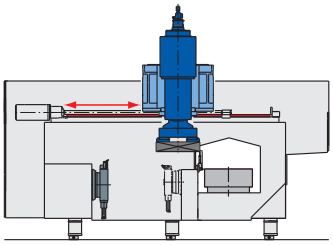
Three functions on the smallest footprint:



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



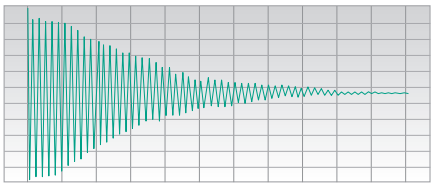
Machining position:
turning, drilling, milling,
grinding.



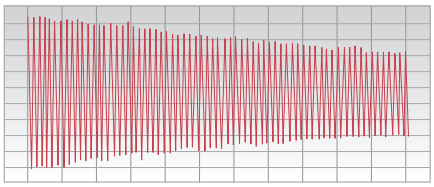
Gauging position:
measuring the workpiece and
processing the offsets.

V L C 5 0 0
V L C 8 0 0

The cornerstone of the VLC series is a sturdy machine base made with MINERALIT® polymer concrete. This guarantees precision, an outstanding surface finish and an extended tool life when machining chucked components. VLC machines with optional drilling, milling or grinding spindles – which can be combined – this machining center is perfect for the complete-machining of round and non-round components. As always at EMAG, automation is an integral part of the VLC machines.



Vibration damping effect of EMAG MINERALIT®
polymer concrete machine bases



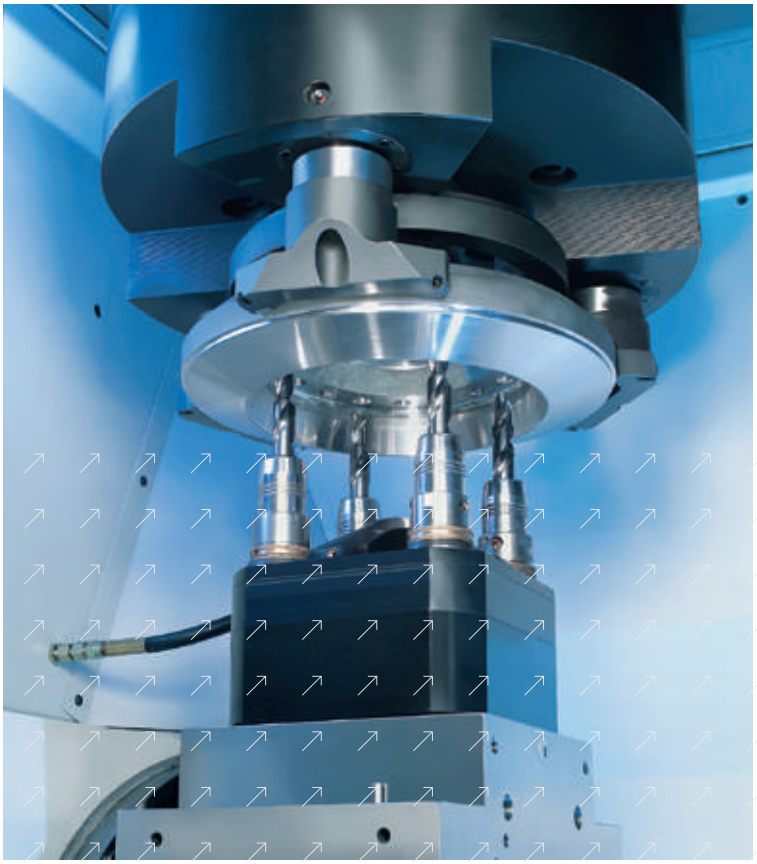
Vibration damping effect of cast iron machine bases

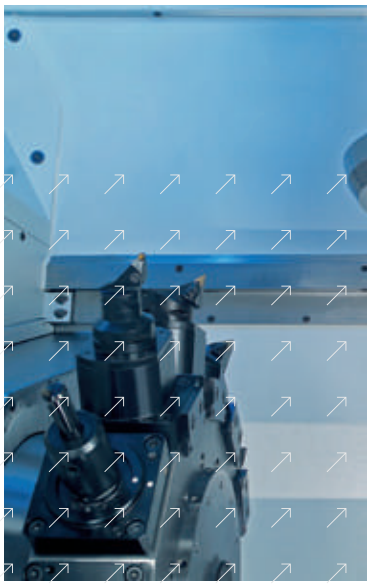
The VLC Series - Complete Machining with Technology Integration

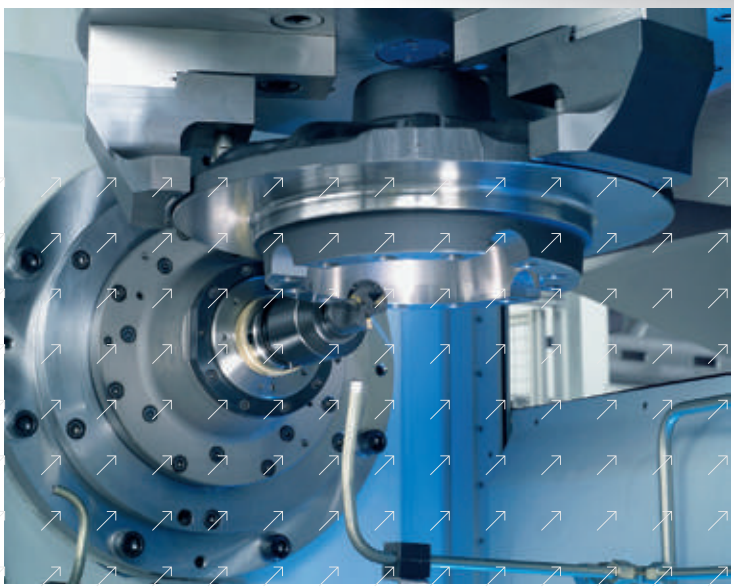
The work spindle and workpiece travel in the main axes X and Z, also optional in Y. The tooling systems can be used in shuttle mode, for either serial or parallel operations, for which optional second X-axes are available. With the work spindle and workpiece positioned overhead and the tools aligned 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, hob cutting, broaching, and grinding.

V L C 5 0 0
V L C 8 0 0





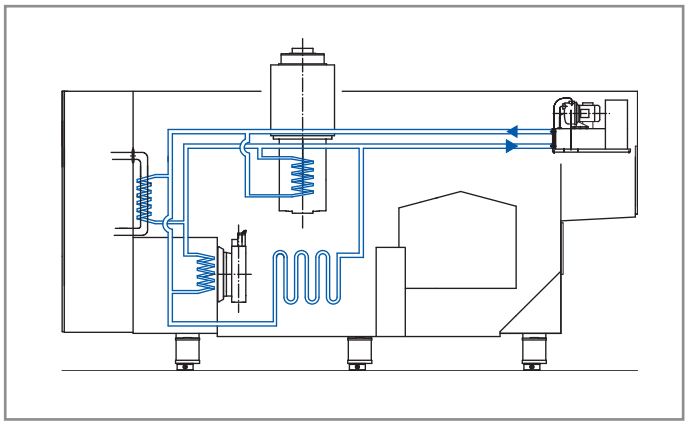


Heavy-Duty Machining with the Highest Precision

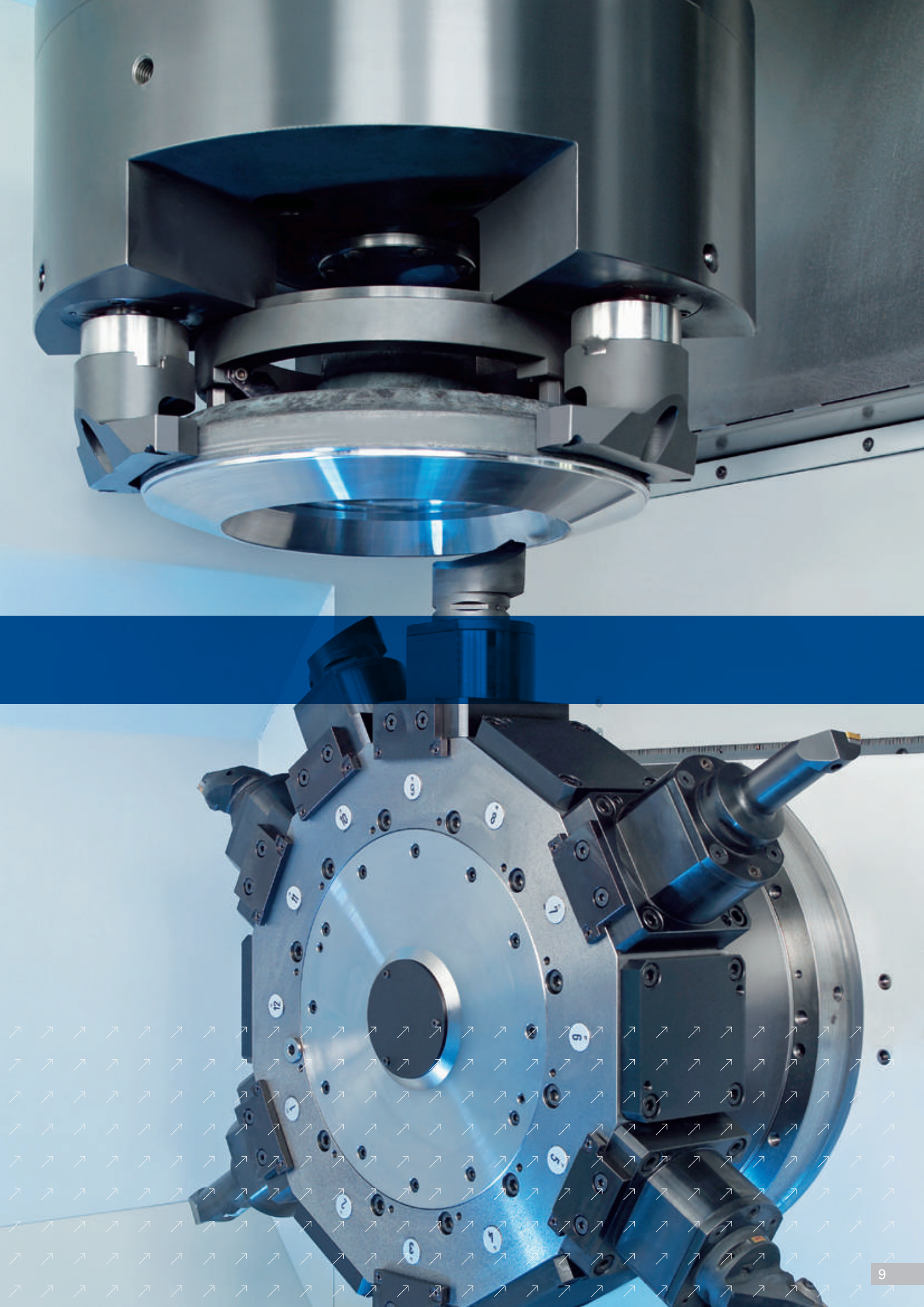
The overhead slide with integrated main spindle completes movements in the X and Z directions. This is done in the X-axis by a fast-reacting gantry drive unit. In the Z-axis, an additional counterbalance combined with the powerful ball screw spindle drive ensures maximum travel speeds.

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

V L C 5 0 0
V L C 8 0 0
V L C 1 2 0 0



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



Integrated Quality Management

Measuring is an essential part of the VLC design principal.
In between the machining and unloading process, the workpiece passes through a stationary measuring probe or plug gauge located outside the machining area. The component is measured here without being adversely affected by chips or dirty particles. Measuring is completed with the workpiece in its original set-up. Components with high precision are then returned to the machining area to be finished machine once the necessary tool offsets have been implemented.

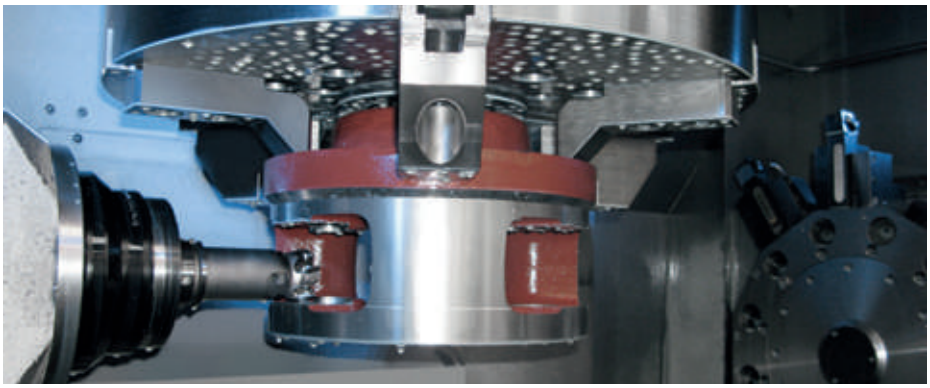
V L C 5 0 0
V L C 8 0 0
V L C 1 2 0 0

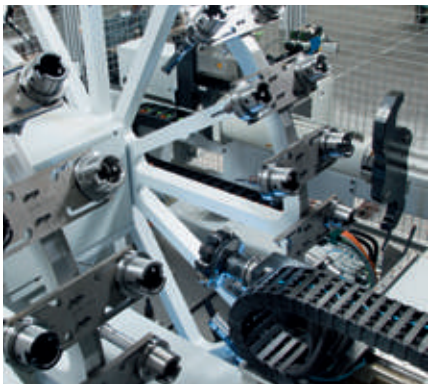
Large doors provide easy access to the machining areas for operators, while the large front window provide safe viewing of the machining area and overhead slide.

VLC 800 MT – the Machining Center Among Turning Machines

The VLC 800 MT is exactly what you need for those applications that require traditional turning, as well as the universal use of other technologies. The powerful milling spindle integrated in the Y/B-axis makes even difficult milling and drilling operations possible. The optional tool magazine, which can be equipped with up to 96 tool positions, reduces retooling times and allows similar tools to be used.

The EMAG turret with up to twelve tool stations is available for turning as usual.





This machine concept is ideal for the universal machining of small to medium batch sizes for components in the construction machinery, large gear units, automotive, plant engineering and similar industries.

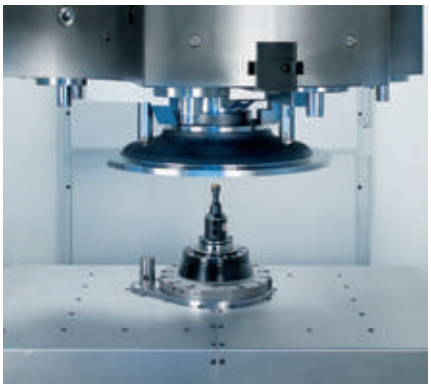
In combination with the integrated automation concept, this machine series allows for mass production with almost no personnel requirement.

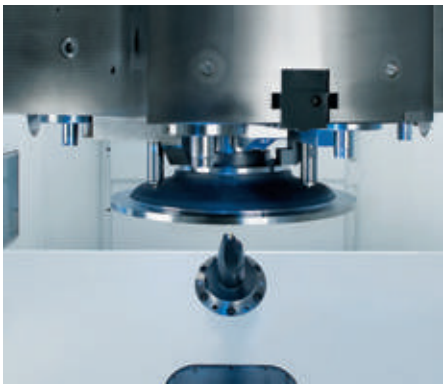
VLC 1200 – the Heavy-Weight World Champion

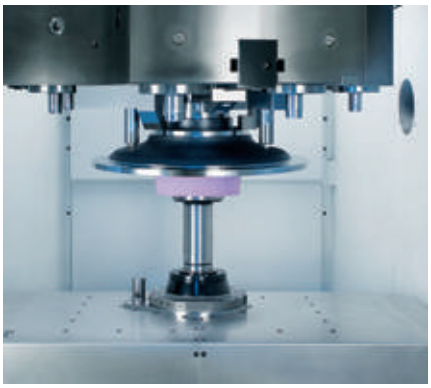
The VLC 1200 – the largest pick-up machine in the world – can vertically machine workpieces of up to 1,200 mm (47 in) in diameter and 2,000 kg (4,400 lbs) in weight.
As always with EMAG, automation is an integral part of the machine. The VLC 1200 practically loads itself. Major areas of application for this type of machine are large chucked components for construction machinery (drive technology), WTGS and industrial transmission systems.

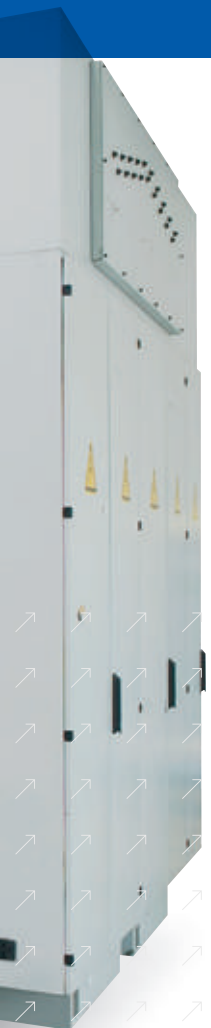
Technology integration: turning, drilling, milling, grinding, gear cutting – all on a single machine.

The VLC 1200 was designed as a very sturdy turning platform. Some of the outstanding characteristics of the pick-up working 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 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.









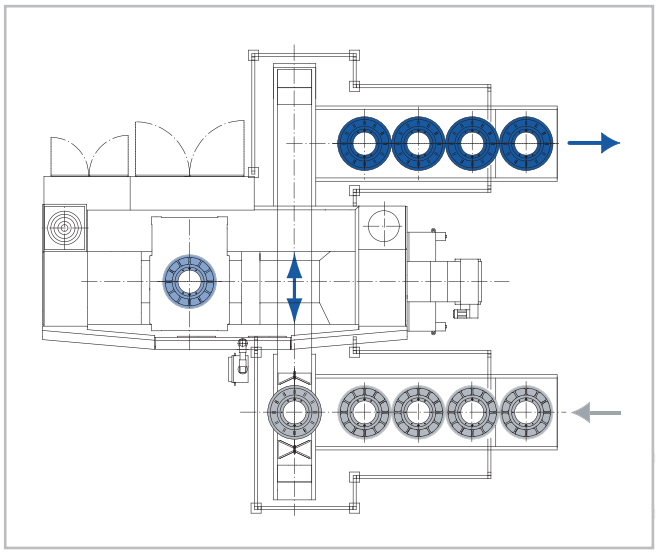
The direct driven spindle of the machine also lends a high degree of process capability to the machining of outstanding surface finishes and the adherence to tight tolerances such as precision bores.
To enable the user to fully utilize the VLC 1200 in a flexible workshop environment, EMAG offers a tool changer with chain magazine. The tooling system is the single-station type and integrated into the B-axis. Opposite of the turning tool receptor is 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.

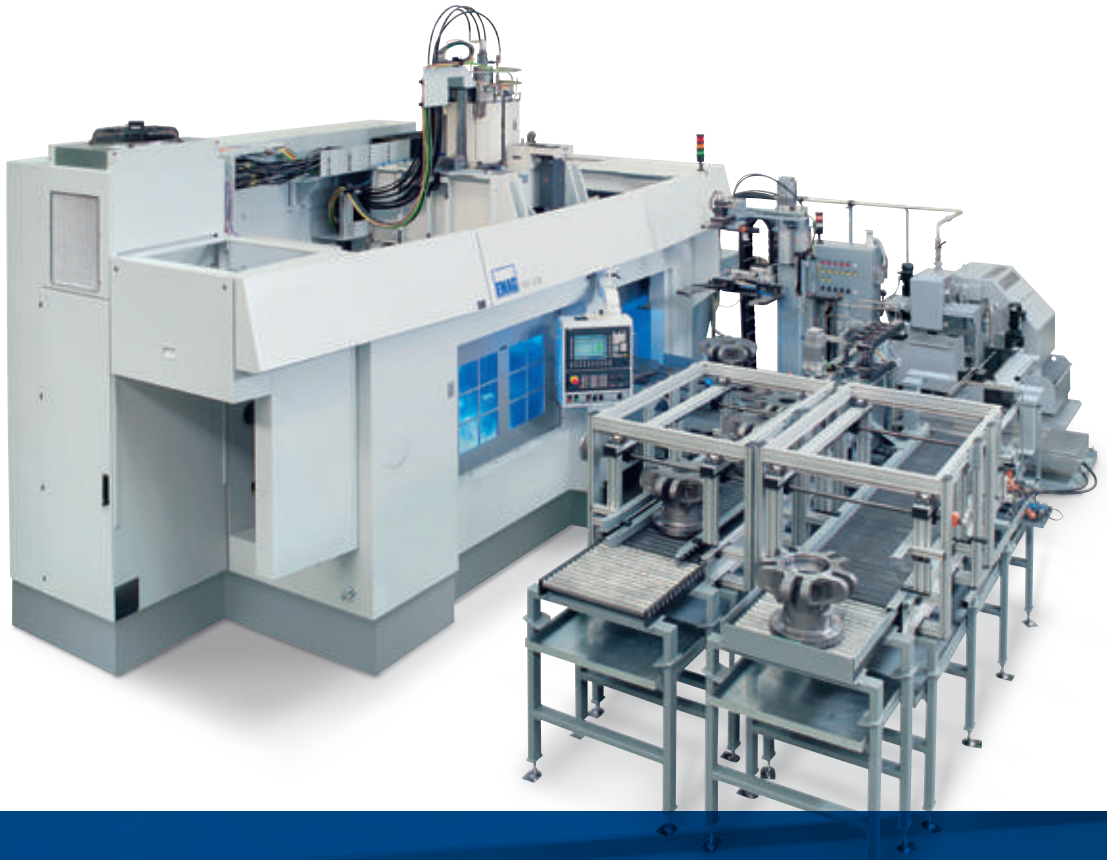
Integrated Automation

The VLC design allows for a quick, space-saving, 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.

Upon request, other external operations such as stamping/signing, measuring, hardening or cleaning can be included in the automation system.

V L C 5 0 0
V L C 8 0 0
V L C 1 2 0 0





Technical Data

Capacity		VLC 500	VLC 800	VLC 800 MT	VLC 1200
Chuck diameter, max.	mm	500	800	800	–
	in	20	32	32	–
Swing diameter	mm	820	820	820	–
	in	33	33	33	–
Travel in X	mm	1,775 / 2,665	1,775 / 2,665	2,665	2,960
	in	70 / 105	70 / 105	105	117
Travel in Y	mm	–	–	± 225	200
	in	–	–	± 9	8
Travel in Z	mm	750	750	750	1,000
	in	30	30	30	40
Main Spindle					
Spindle flange to DIN 55 026	Size	Z 380	Z 380	Z 380	Z 520
Spindle bearing, front	dia. in mm	190	320	320	420
	dia. in inch	8	13	13	17
Speed, max.	rpm	2,100	750	750	500
Main Drive					
Power rating, max.	kW	110	74	74	88
	hp	148	99	99	118
Full power at a spindle speed of	rpm	950	160	160	120
Torque, max.	Nm	1,300	4,400	4,400	5,000
	ft-lb	959	3,245	3,245	3,688
Feed Drives					
Rapid traverse rate X / Z	m/min	45 / 30	45 / 30	45 / 30	25 / 25
	ipm	1,772 / 1,181	1,772 / 1,181	1,772 / 1,181	984 / 984
Rapid traverse speed Y	m/min	–	–	30	15
	ipm	–	–	1,181	591
Feed force X / Z	kN	21 / 20	21 / 20	21 / 20	25 / 15
	lbf	4,720 / 4,496	4,720 / 4,496	4,720 / 4,496	5,620 / 3,372
Feed force Y	kN	–	–	5	10
	lbf	–	–	1,124	2,248
Ball screw X	dia. in mm	63	63	63	2 x 63
	dia. in inch	3	3	3	2 x 3
Ball screw in Z	dia. in mm	50	50	50	2 x 50
	dia. in inch	2	2	2	2x 2
Ball screw in Y	dia. in mm	–	–	40	–
	dia. in inch	–	–	2	–
Tooling Systems					
EMAG disc-type turret, left					
Tool receptors	Quantity	12 / 8	12 / 8	–	–
for cylindrical shanks to DIN 69 880					
Shank diameter	mm	50 / 60*	50 / 60*	–	–
	in	2 / 3*	2 / 3*	–	–
EMAG disc-type turret, right					
Tool receptors	Quantity	12	12	12	–
for cylindrical shanks to DIN 69 880					
Shank diameter	mm	50	50	50	–
	in	2	2	2	–
Tool magazine					
Receptor	Quantity	–	–	48 / 96	36
HSK 100, for turning tools HSK 100-F160					

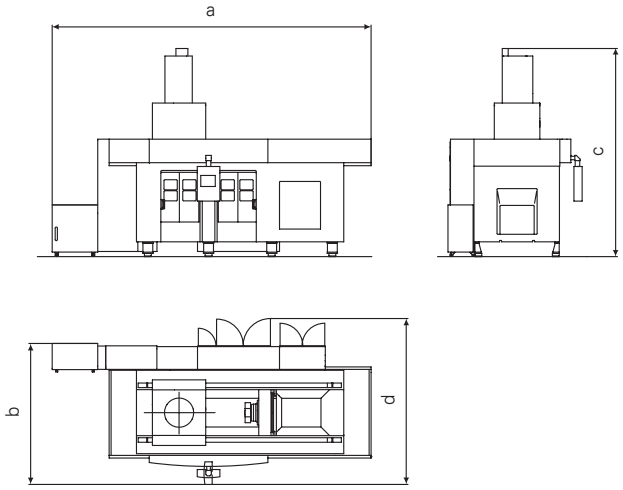
* without live tool

Turning / Milling and Grinding Unit		VLC 500	VLC 800	VLC 800 MT	VLC 1200
Turning tools / live tools	Quantity	–	–	–	24
Tool receptors, cylindrical shank	dia. in mm	–	–	HSK 100	HKS 100
	dia in inch	–	–	HKS 4	HKS 4
Milling and Grinding spindle	Quantity	–	–	1	1
Max. tool length	mm	–	–	500	350
	in	–	–	20	14

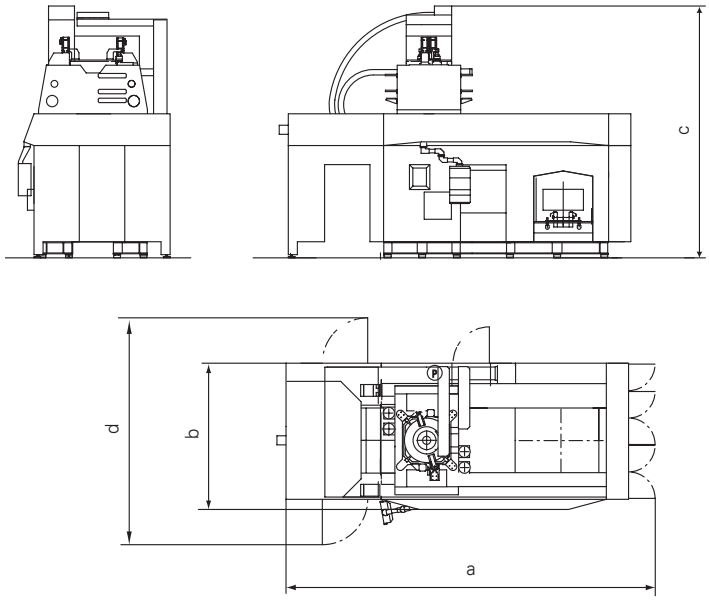
Dimensions and Weights					
Length a	mm	6,150 / 7,000	6,150 / 7,000	8,200*	8,200
	in	243 / 276	243 / 276	323*	323
Width b	mm	3,100	3,100	3,100	3,000
	in	122	122	122	119
Height c	mm	4,570	4,570	4,570	5,500
	in	180	180	180	217
Width d (open doors)	approx. mm	3,600	3,600	3,600	5,000
	approx. in	142	142	142	197
Weight, total machine	approx. kg	20,000 / 26,000	20,000 / 26,000	30,000	60,000
	approx. lb	44,092 / 57,320	44,092 / 57,320	66,139	132,277

* incl. tool magazine

Floor Plan VLC 500 / 800

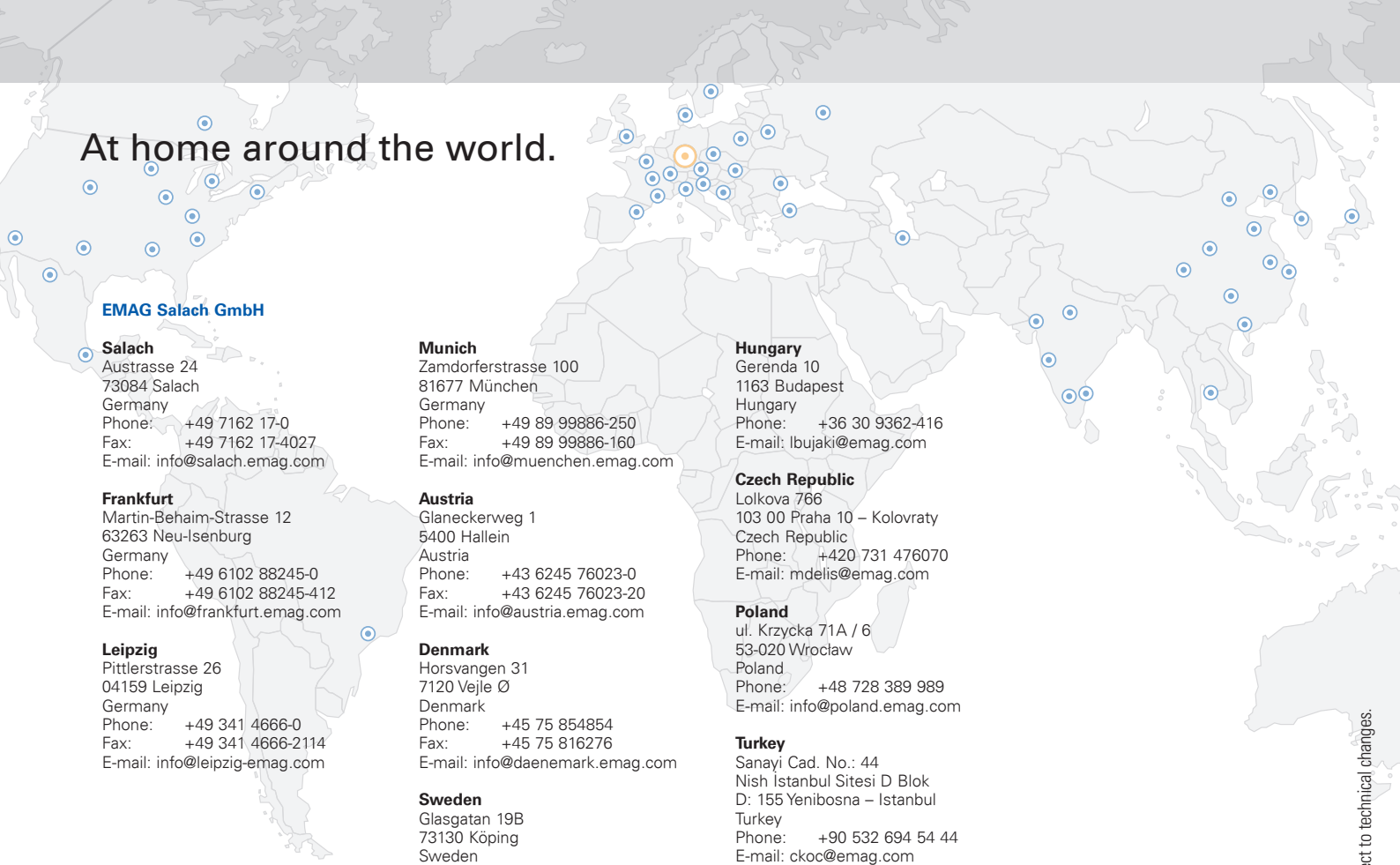


Floor Plan VLC 1200



Subject to technical changes

At home around the world.



EMAG Salach GmbH

Salach
Austrasse 24
73084 Salach
Germany
Phone: +49 7162 17-0
Fax: +49 7162 17-4027
E-mail: info@salach.emag.com

Frankfurt
Martin-Behaim-Strasse 12
63263 Neu-Isenburg
Germany
Phone: +49 6102 88245-0
Fax: +49 6102 88245-412
E-mail: info@frankfurt.emag.com

Leipzig
Pittlerstrasse 26
04159 Leipzig
Germany
Phone: +49 341 4666-0
Fax: +49 341 4666-2114
E-mail: info@leipzig-emag.com

Munich
Zamdorferstrasse 100
81677 München
Germany
Phone: +49 89 99886-250
Fax: +49 89 99886-160
E-mail: info@muenchen.emag.com

Austria
Glaneckerweg 1
5400 Hallein
Austria
Phone: +43 6245 76023-0
Fax: +43 6245 76023-20
E-mail: info@austria.emag.com

Denmark
Horsvangen 31
7120 Vejle Ø
Denmark
Phone: +45 75 854854
Fax: +45 75 816276
E-mail: info@daenemark.emag.com

Sweden
Glasgatan 19B
73130 Köping
Sweden
Phone: +46 221 40305
E-mail: info@sweden.emag.com

Hungary
Gerenda 10
1163 Budapest
Hungary
Phone: +36 30 9362-416
E-mail: lbujaki@emag.com

Czech Republic
Lolkova 766
103 00 Praha 10 – Kolovraty
Czech Republic
Phone: +420 731 476070
E-mail: mdelis@emag.com

Poland
ul. Krzycka 71A / 6
53-020 Wrocław
Poland
Phone: +48 728 389 989
E-mail: info@poland.emag.com

Turkey
Sanayi Cad. No.: 44
Nish Istanbul Sitesi D Blok
D: 155 Yenibosna – Istanbul
Turkey
Phone: +90 532 694 54 44
E-mail: ckoc@emag.com

Subject to technical changes.

Market Companies

EUROPE

EMAG MILANO S.r.l.
Via dei Mille 31
20098 San Giuliano Milanese (Mi)
Italy
Phone: +39 02 905942-1
Fax: +39 02 905942-24
E-mail: info.milano@emag.com

EMAG MILANO S.r.l.
Succursale en France
5 Avenue de L'Europe – BP 22
18150 La Guerche sur L'Aubois
France
Phone: +33 248 7711-00
Fax: +33 248 7111-29
E-Mail: info.france@emag.com

EMAG MILANO S.r.l.
Sucursal en España
Pasaje Arrahona, n° 18
Polígono Industrial Santiga
08210 Barberà del Vallès (Barcelona)
Spain
Phone: +34 93 7195080
Fax: +34 93 7297107
E-mail: info.spain@emag.com

EMAG UK Ltd.
Chestnut House
Kingswood Business Park
Holyhead Road
Albrighton
Wolverhampton WV7 3AU
Great Britain
Phone: +44 1902 37609-0
Fax: +44 1902 37609-1
E-mail: info@uk.emag.com

EMAG OOO
ul. Akademika Chelomeya 3/2
117630 Moscow
Russia
Phone: +7 495 287 0960
Fax: +7 495 287 0962
E-mail: info@russia.emag.com

AMERICA

EMAG L.L.C. USA
38800 Grand River Avenue
Farmington Hills, MI 48335
USA
Phone: +1 248 477-7440
Fax: +1 248 477-7784
E-mail: info@usa.emag.com

EMAG MEXICO
Maquinaria EMAG Mexico S de RL de CV
Av. Hercules 301 Nave 1
Polígono Empresarial Santa Rosa
76220 Santa Rosa Jauregui, Querétaro
Mexico
Phone: +52 442 291 1552
E-mail: info.mexico@emag.com

EMAG DO BRASIL
Edifício Neo Corporate Offices,
CJ 1503
Rua Enxovia, 472
04711-030 São Paulo SP
Brazil
Phone: +55 11 38370145
Fax: +55 11 38370145
E-mail: info@brasil.emag.com

ASIA

EMAG (China) Machinery Co., Ltd.
Building A3 & B7 Cangneng
Europe & America Technology Park
No. 8 Loujiang Rd. (N.)
215400 Taicang
Jiangsu, China
Phone: +86 512 5357-4098
Fax: +86 512 5357-5399
E-mail: info@emag-china.com

EMAG (Chongqing) Machinery Co., Ltd.
No. 10th Lailong Road
Yongchuan District
402160 Chongqing
China
Phone: +86 23 49783399
Fax: +86 23 49783388
E-mail: info@emag-china.com

TAKAMAZ EMAG Ltd.
1-8 Asahigaoka Hakusan-City
Ishikawa Japan, 924-0004
Japan
Phone: +81 76 274-1409
Fax: +81 76 274-8530
E-mail: info@takamaz.emag.com

EMAG INDIA Pvt. Ltd.
Technology Centre
No. 17/G/46-3, Industrial Suburb,
2nd Stage, Yeshwantpur,
Bengaluru – 560 022
India
Phone: +91 80 50050163
E-mail: info@india.emag.com

EMAG KOREA Ltd.
Rm204, Biz center, SKn Technopark,
124 Sagimakgol-ro, Sangdaewon-dong,
Jungwon-gu, Seongnam City,
Gyeonggi-do, 462-721
South Korea
Phone: +82 31 776-4415
Fax: +82 31 776-4419
E-mail: info@korea.emag.com

EMAG

www.emag.com

201-1-GB/01.2019 · Printed in Germany ·