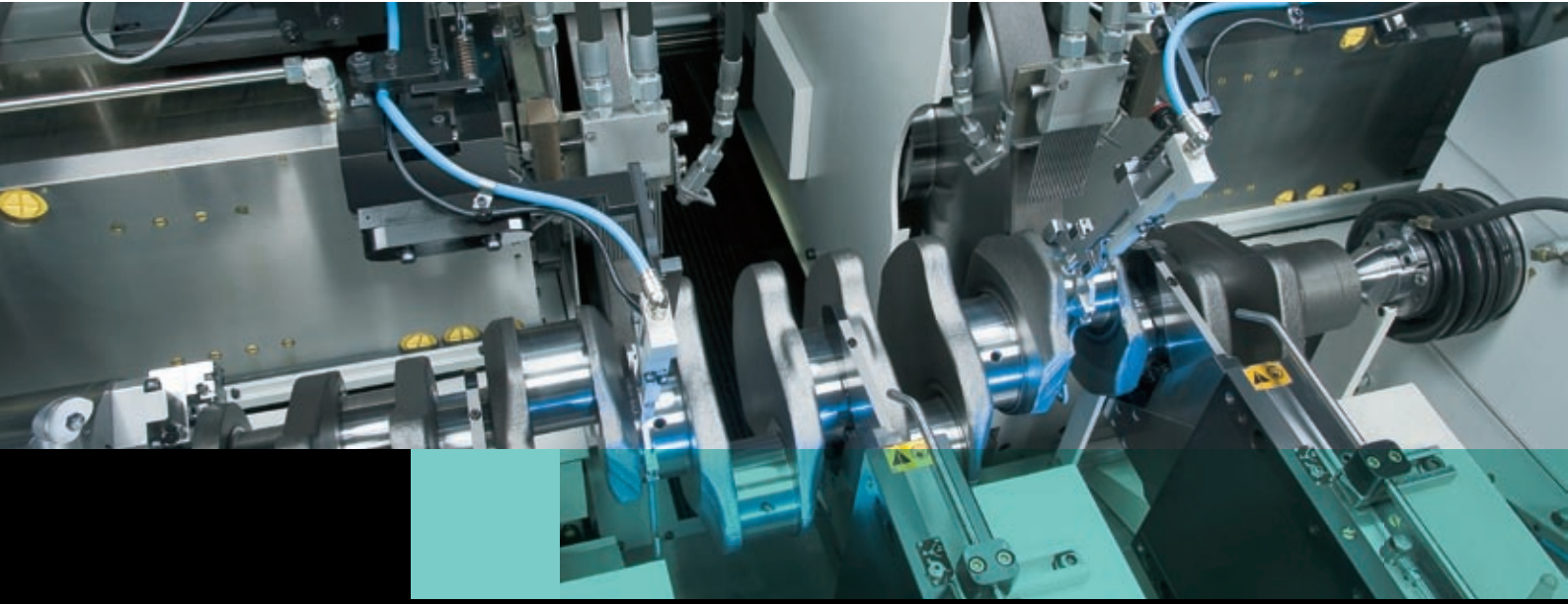


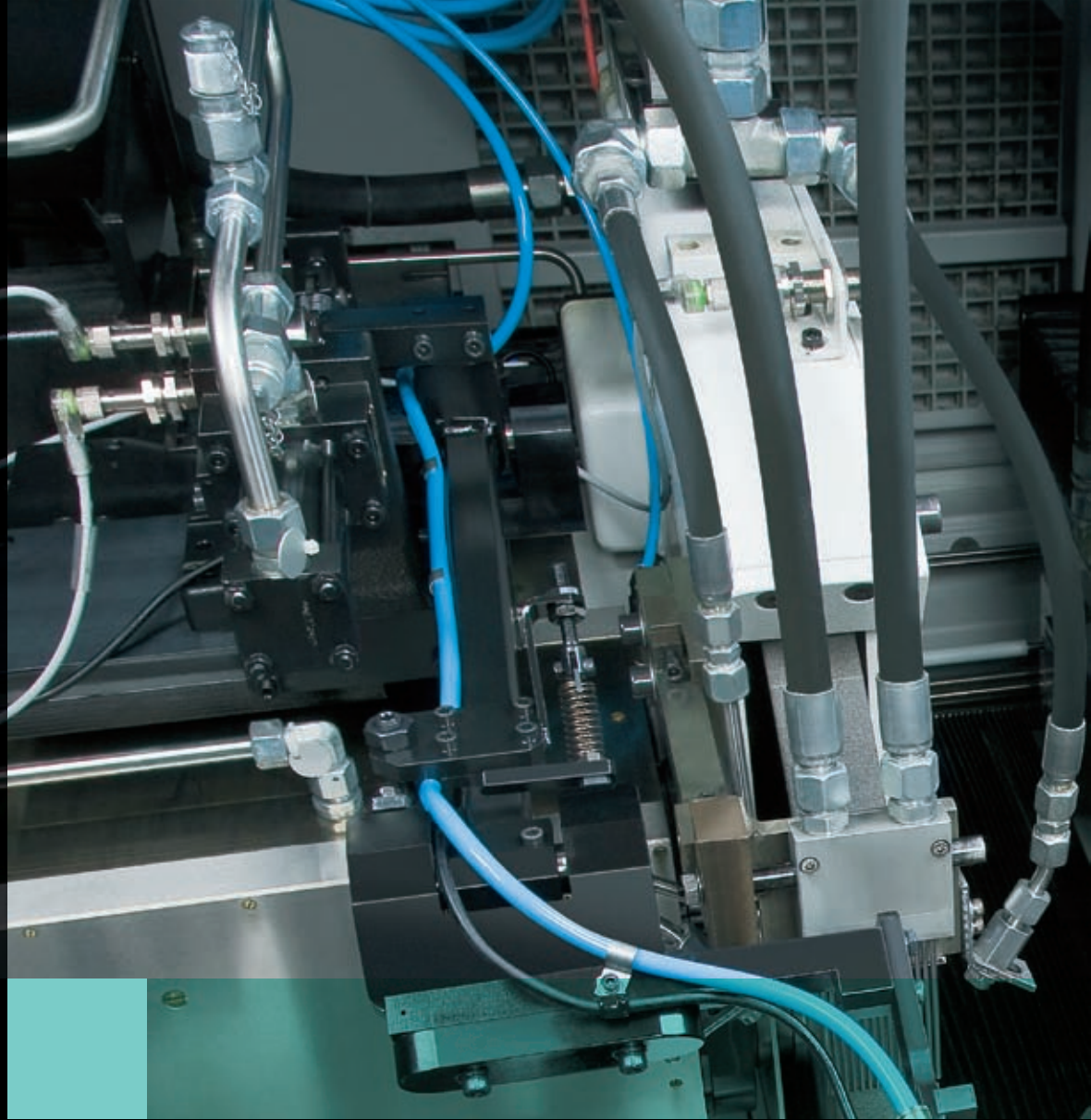
Crankshaft grinders

PM 310

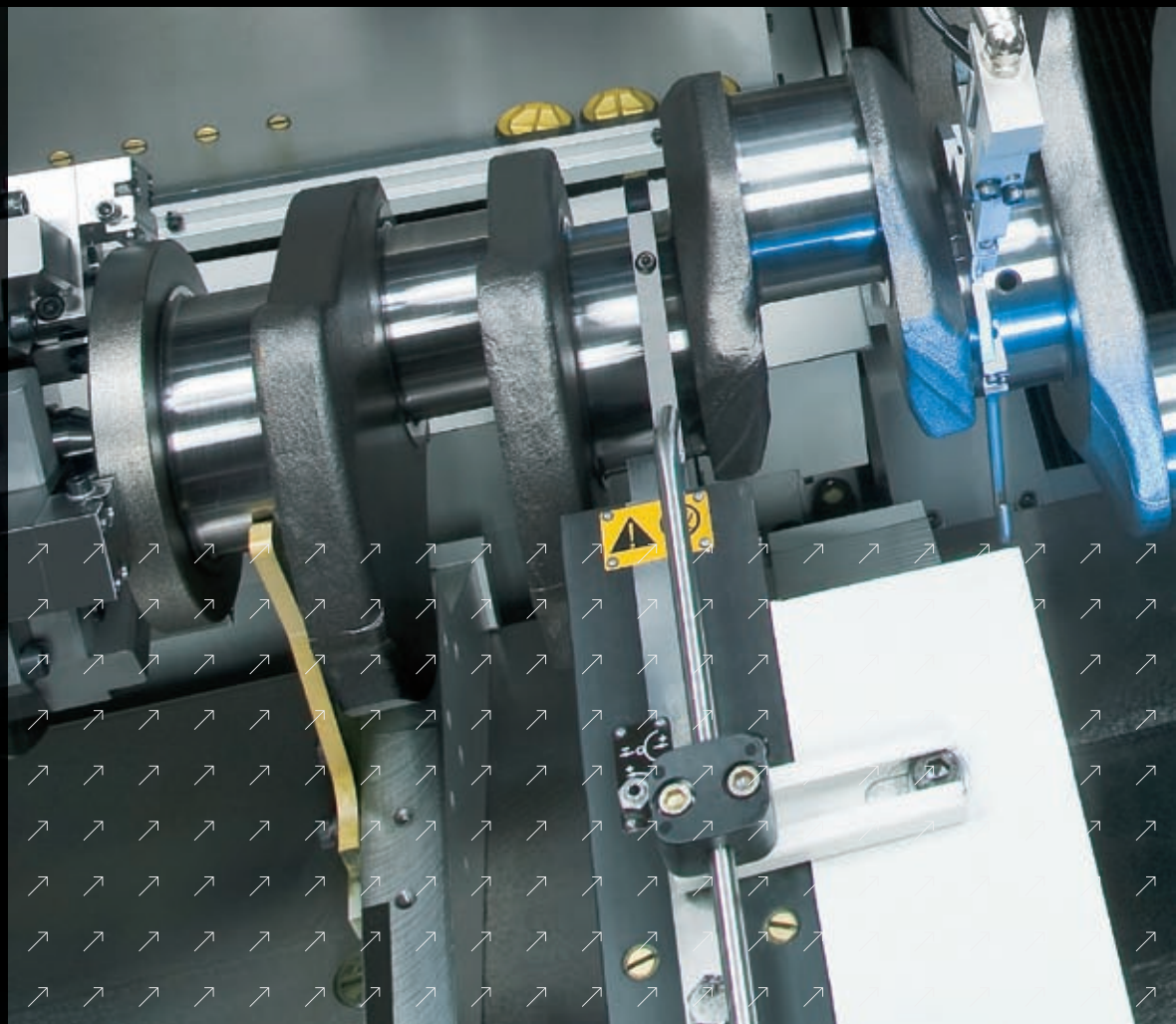
PM 320

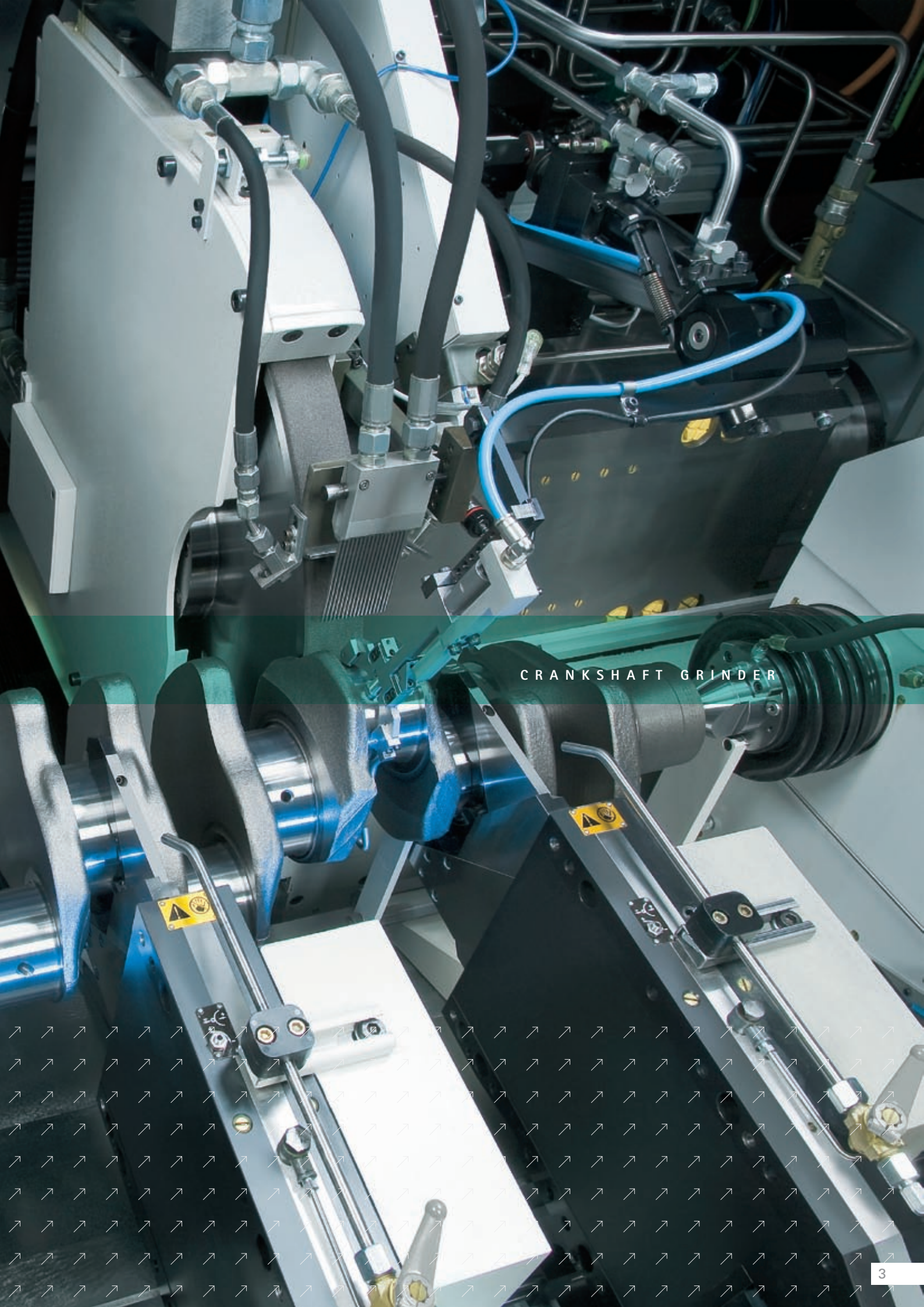


For decades NAXOS-UNION crankshaft grinders have occupied a prominent place in the worldwide manufacture of engine components for passenger cars and heavy goods vehicles. By now their combination of CBN technology and the pin chasing process has become the accepted standard. NAXOS-UNION was the first to apply linear motor technology to the process and now offers highly dynamic drive systems to satisfy production requirements.



P M 3 1 0
P M 3 2 0





CRANKSHAFT GRINDER

Series PM 310 / 320.

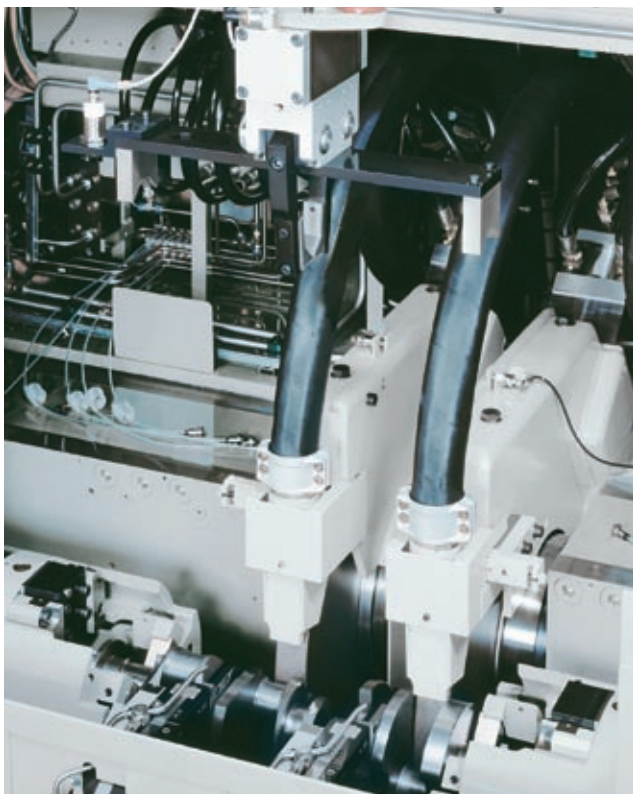
The machine design meets the modern production environment's increased demands for a high degree of availability, a small footprint, simple and time-saving installation and commissioning and easy servicing.

Special features:

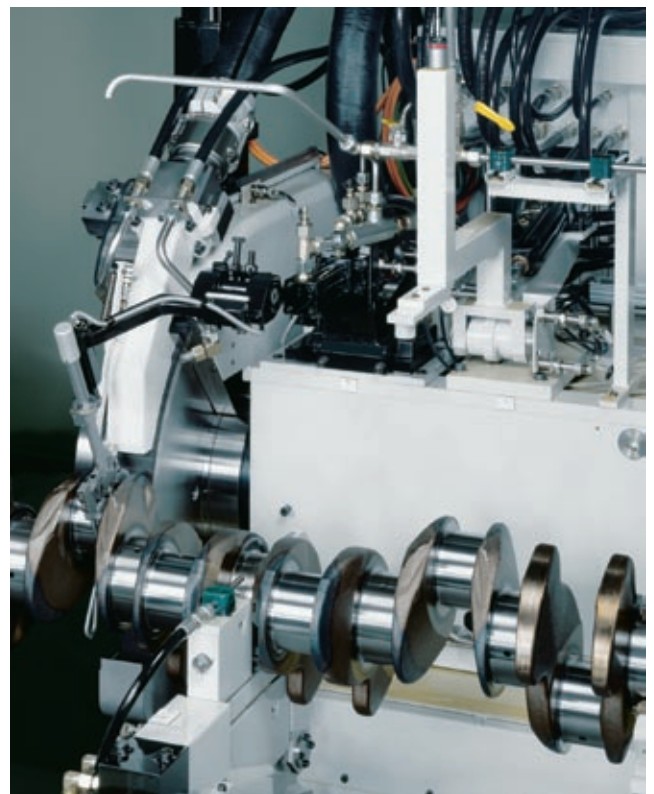
- CBN technology also for the grinding of radii and shoulders
- Pin chasing of the bearings, with the workpiece centrally clamped
- The twin-head version offers highest productivity levels through simultaneous machining with independently working grinding units
- X-axis drive system with anti-backlash linear motor
- Work head with torque motor
- Hydro-static guideways (X- and Z-axis)
- Adaptive in-process gauging system
- Grinding spindle with direct drive (55 kW / 97 kW)
- Machine enclosure detached from machine
- Compact design
- Integrated roundness monitoring and error correction

P M 3 1 0
P M 3 2 0

Twin-head pin grinder for pre-grinding into solid material using an electro-plated CBN wheel.

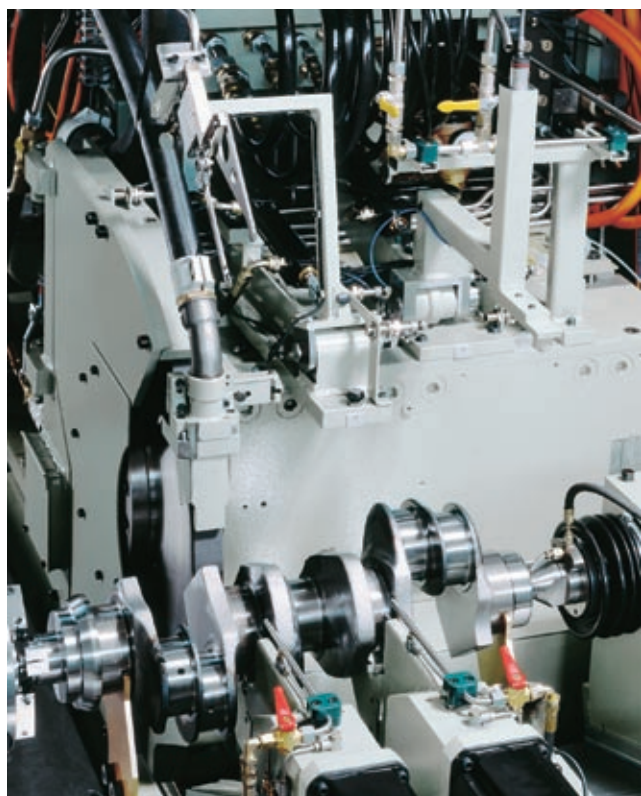


Grinding the pin bearings on a heavy truck crankshaft.

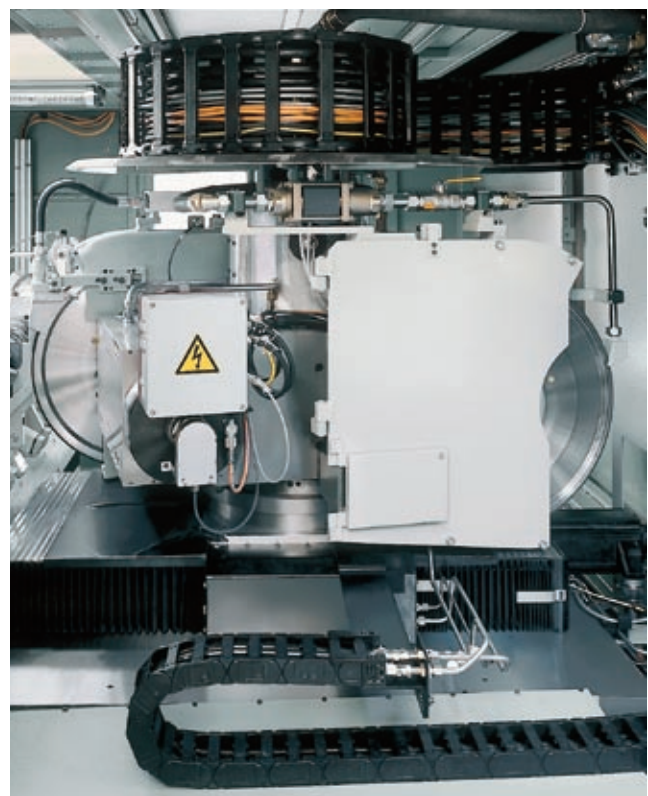




CBN main bearing grinder.



Flexible CBN grinder with B-axis.



Machine variants and grinding technologies.

The modular system allows the configuration of a multitude of machine variants. Whether the main and pin bearings are to be machined in a single setup on the same grinder or on two different

machines, following the classical concept, the decision depends on production requirements.

Single, straight wheel head:

Two straight wheel heads:

Pivoting wheel head:

Angular wheel head:

grinding the main and/or pin bearings

simultaneous grinding of the main and/or pin bearings

combined processes, grinding consecutively

grinding the high and low ends

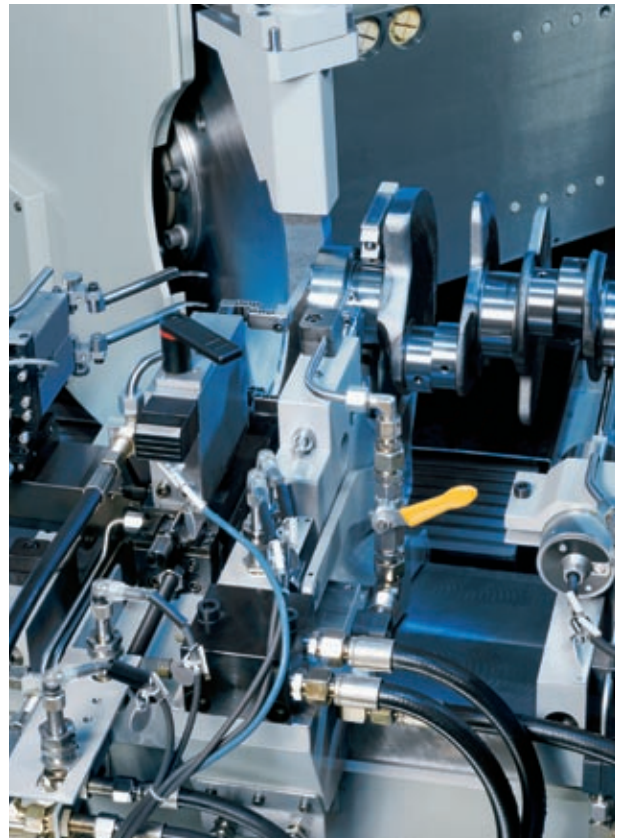
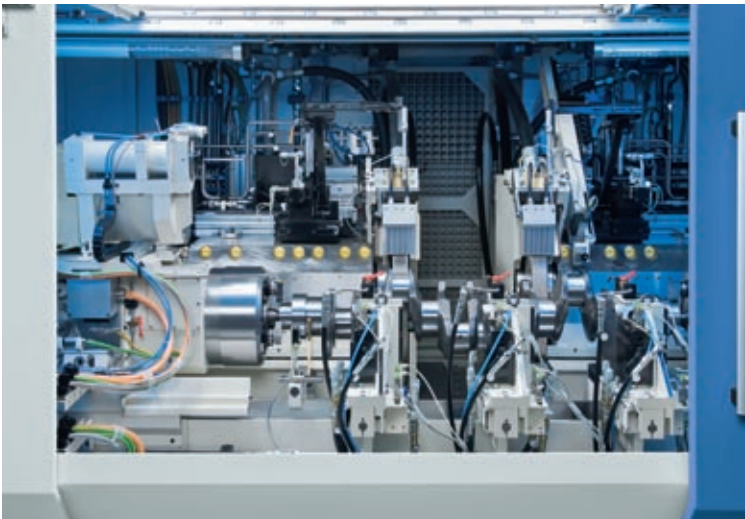
Available grinding technologies:

pre-grinding with electro-plated and finish-grinding with vitrified-bonded CBN grinding wheels; straight plunge grinding of bearing seats with/without shoulders and radii; multiple plunge grinding (bearing width > wheel width); diagonal and kiss grinding; flexible grinding (wheel edge radius < bearing radius); angular plunge grinding with CBN or corundum wheels.

P M 3 1 0
P M 3 2 0

RF angular plunge cut.

PMD 320 twin-head machine for simultaneous grinding.



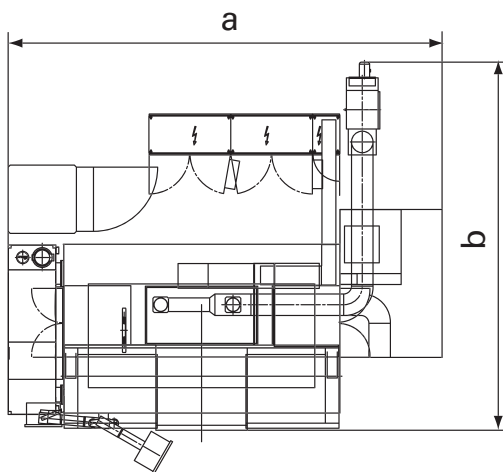
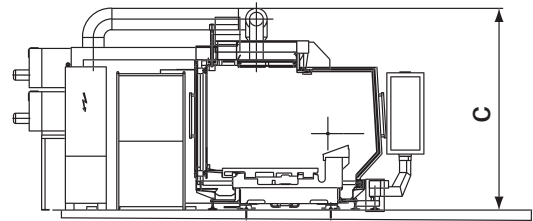
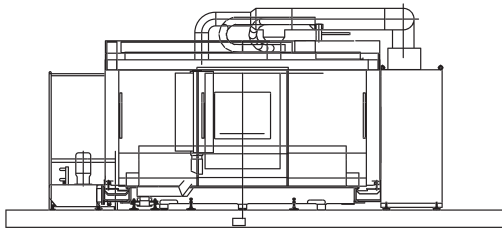


Technical data.

Capacity		PM 310	PM 320
Max. workpiece length	mm	1,000	1,500
Max. workpiece weight	kg	80	180
Max. swing diameter*	mm	320	320
Max. pin radius*	mm	110	110 / 140
Grinding centre above bottom edge of machine	mm	1,100	1,300
Grinding wheels			
Wheel diameter*	mm	650	650 / 700
Max. wheel width*	mm	50	50 / 60
Max. cutting speed	m/s	125 – 200	125 – 200
Coolant		emulsion or grinding oil	
Drives			
X-axis		SIEMENS linear motor	
Feed force in X	Nm	5,100	5,100
Rapid traverse speed in X / Z	m/min	25 / 20	25 / 20
Control system			
SIEMENS 840 D			
Weights and measurements			
Length a	mm	5,800	7,300
Width b	mm	3,800	4,140
Height c	mm	2,810	3,010
Weight of single-wheel machine	kg	17,000	21,000
Weight of twin-head machine	kg	20,500	25,500

* Individual case check required, taking into consideration workpiece geometry, back rest and pin chasing aspects.

Floor plan PM 310 / 320



Subject to change without prior notice.

At home in the world.

EMAG

Gruppen-Vertriebs- und Service GmbH

Salach

Austrasse 24
73084 Salach
Germany
Phone: +49 (0)7162 17 0
Fax: +49 (0)7162 17 820
E-mail: info@salach.emag.com

Köln

Robert-Perthel-Strasse 79
50739 Köln
Germany
Phone: +49 (0)221 126152 0
Fax: +49 (0)221 126152 19
E-mail: info@koeln.emag.com

Herford

Arndtstrasse 8
32052 Herford
Germany
Phone: +49 (0)5221 9333 0
Fax: +49 (0)5221 9333 25
E-mail: info@herford.emag.com

Frankfurt

Orber Strasse 8
60386 Frankfurt/Main
Germany
Phone: +49 (0)69 40802 0
Fax: +49 (0)69 40802 412
E-mail: info@frankfurt.emag.com

Leipzig

Pittlerstrasse 26
04159 Leipzig
Germany
Phone: +49 (0)341 4666 0
Fax: +49 (0)341 4666 114
E-mail: info@leipzig.emag.com

München

Zamdorferstrasse 100
81677 München
Germany
Phone: +49 (0)89 99886 250
Fax: +49 (0)89 99886 160
E-mail: info@muenchen.emag.com

WORLDWIDE

NODIER EMAG INDUSTRIE S.A.

Service commercial Unital:
38, rue André Lebourblanc - B.P. 26
78592 Noisy le Roi Cedex
France
Phone: +33 1 30 80 47 70
Fax: +33 1 30 80 47 69
E-mail: info@nodier.emag.com

EMAG MAQUINAS HERRAMIENTA S.L.

Pasaje Arrahona, No.18
Centro Industrial Santiga
08210 Barberà del Vallès (Barcelona)
Spain
Phone: +34 93 719 5080
Fax: +34 93 729 7107
E-mail: info@emh.emag.com

ZETA EMAG SpA

Viale Longarone 41/A
20080 Zibido S.Giacomo (MI)
Italy
Phone: +39 02 905942 1
Fax: +39 02 905942 21
E-mail: info@zeta.emag.com

EMAG (UK) Ltd.

Chestnut House,
Kingswood Business Park
Holyhead Road
Albrighton
Wolverhampton WV7 3AU
Great Britain
Phone: +44 1902 376090
Fax: +44 1902 376091
E-mail: info@uk.emag.com

KP-EMAG

ul. Butlerova 17
117342 Moscow
Russia
Phone: +07 495 3302574
Fax: +07 495 3302574
E-mail: info@kp.emag.com

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

Colina de la Umbria 10
53140 Boulevares
Naucalpan Edo. de México
Mexico
Phone: +52 55 5 3742665
Fax: +52 55 5 3742664
E-mail: info@mexico.emag.com

EMAG DO BRASIL Ltda.

Rua Schilling, 413
Vila Leopoldina
05302-001 São Paulo
SP, Brazil
Phone: +55(0)11 3837 0145
Fax: +55(0)11 3837 0145
E-mail: info@brasil.emag.com

**Dänemark**

Horsvangen 31
7120 Vejle Ø
Denmark
Phone: +45 75 854 854
Fax: +45 75 816 276
E-mail: info@daenemark.emag.com

Schweden

Glasgatan 19B
73130 Köping
Sweden
Phone: +46 (0)221 40305
E-mail: info@sweden.emag.com

Österreich

Dorfstrasse 343
5423 St. Koloman
Austria
Phone: +43 (0)6241 640
Fax: +43 (0)6241 26204
E-mail: info@austria.emag.com

EMAG Machine Tools (Taicang) Co., Ltd.

Room 2315 B, Far East International Plaza
No. 317 Xianxia Road
200051 Shanghai,
P.R. China
Phone: +86 21 62 35 15 20
Fax: +86 21 62 35 01 18
E-mail: info@china.emag.com

EMAG INDIA Private Limited

#12, 12th Main Street, 17th Cross
Malleswaram
Bangalore - 560 055,
India
Phone: +91 80 2344 7498
Fax: +91 80 2344 7498
E-mail: info@india.emag.com

EMAG KOREA Ltd.

Lotte IT Castle 1st B/D, Rm 806
550-1, Kasan-dong
Kamchun-gu
153-803 Seoul
South Korea
Phone: +82 2 2026 7660
Fax: +82 2 2026 7670
E-mail: info@korea.emag.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 SOUTH AFRICA

P.O. Box 2900
Kempton Park 1620
Rep. South Africa
Phone: +27 11 3935070
Fax: +27 11 3935064
E-mail: info@southafrica.emag.com

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