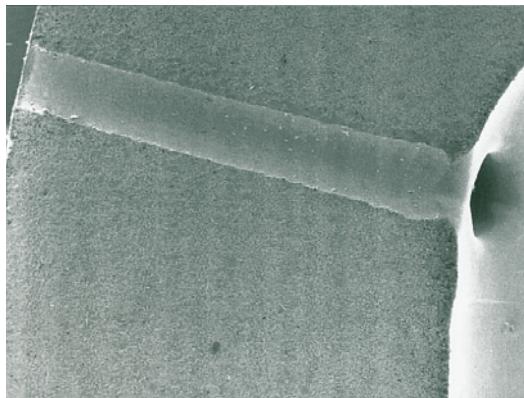
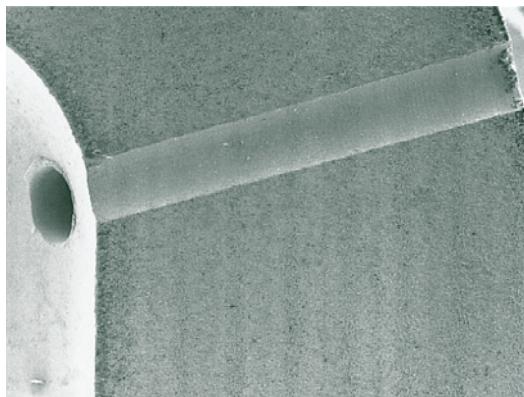


Original MaK Injector Nozzle Elements

MaK

Parts Development Based on Know-How, Technology and Experience

For MaK Marine Engines



**Injection nozzle holes before
and after treatment, scale 25:1**

M 332 C	M 20 C
M 35	M 25 C
M 453 C	M 32 C
M 552 C	M 43 C
M 601 C	

- **Optimised Lifetime**
- **Excellent Quality**
- **Excellent Reliability**
- **Short Delivery Time**
- **Low Total Cost**

■ **Optimised Lifetime**

MaK Premium Injector Nozzle Elements are designed and manufactured for a lifetime of 7,500 h (6,000 h for M 332 C, M 35, M 453 C, M 552 C, M 601 C), if MaK's Instructions for Heavy Fuel Operation are followed. Only the best materials and processes are used to provide long component lifetime.

■ **Excellent Quality**

A special aftertreatment to the injection holes developed by MaK engineers enables the Nozzle Element to provide an optimised spray pattern over the entire lifetime. The Nozzle Element is designed to work precisely with all other parts of the combustion chamber. The optimised spray pattern is a major contribution to an optimised burning process in the combustion chamber. A perfect spray pattern protects the liner from carbon deposits and makes a contribution to achieve low fuel consumption. The optimised burning process provides longer life for valves as well as liners, piston rings and piston crowns. This is best possible with Original MaK Injector Nozzle Elements which are optimised for use in our engines.



Parts News

Original MaK Injector Nozzle Elements



■ Excellent Reliability

Every Original MaK Injector Nozzle Element is tested with a process specially designed by MaK engineers. All measurements are recorded to ensure our quality is constantly maintained. Additionally, we use field information for continuous improvement.

■ Short Delivery Time

Original MaK Injector Nozzle Elements are usually shipped within 24h after the order has been placed, as are most MaK Original Spare Parts, to best serve our customers.

■ Low Total Cost

Original MaK Injector Nozzle Elements provide extra value for the price the customer pays. The operation costs for the engine is reduced.

► **For quotations or orders please contact
your local MaK Service Organization.**

Original MaK Injector Nozzle Elements
are World-Class High-Tech Products!

Caterpillar Marine Power Systems

Headquarters

**Caterpillar Marine
Power Systems**
Neumühlen 9
22763 Hamburg/Germany

Phone: +49 40 2380-3000
Telefax: +49 40 2380-3535

Europe, Africa, Middle East

**Caterpillar Marine
Power Systems**
Neumühlen 9
22763 Hamburg/Germany

Phone: +49 40 2380-3000
Telefax: +49 40 2380-3535

Americas

MaK Americas Inc.
3450 Executive Way
Miramar Park of Commerce
Miramar, FL. 33025/USA
Phone: +1 954 447 71 00
Telefax: +1 954 447 71 15

Asia Pacific

**Caterpillar Marine Trading
(Shanghai) Co., Ltd.**
25/F, Caterpillar Marine Center
1319, Yan'an West Road
200050 Shanghai/P. R. China
Phone: +86 21 6226 2200
Telefax: +86 21 6226 4500

**Caterpillar Marine Asia
Pacific Pte Ltd**
14 Tractor Road
Singapore 627973/
Singapore
Phone: +65 68287-600
Telefax: +65 68287-624

For more information please visit our website:
www.cat-marine.com or www.mak-global.com

Subject to change without notice.
Leaflet No. 411 · 09.08 · e · L+S · VM3

© 2008 Caterpillar All Rights Reserved. CAT, CATERPILLAR, their respective logos, „Caterpillar Yellow” and the POWER EDGE trade dress, as well as corporate identity used herein, are trademarks of Caterpillar and may not be used without permission

MAK

CATERPILLAR®