

27.11.2003

INVITATION

Information, Profit, Relaxation EUROMOLD 2003, Frankfurt 3. - 6. December

Dear Mr. !*FIRST_NAME*! !*LAST_NAME*!,

Are you going to be at the Euromold in Frankfurt?

Then don't miss visiting our booth E 42 in Hall 8 to find out about the latest innovations from MCP-HEK.

One of the highlights is certainly the **MCP Nylon Vacuum Casting** process for producing thermoplastic parts in Nylon-PA 6 in silicone rubber moulds, quickly and cheaply.

We will also be presenting the **SLM - Selective Laser Melting Process with the MCP Realizer^{SLM}**. This world class, innovative process has the widest range of applications for producing body implants, aircraft parts, ultra light structures, tooling for plastics, sheet metal and pressure die casting, all in completely pure and dense steel. Come and see it working.

Last, but not least, we will be showing the **MCP Metal Part Casting Process**, the ideal process chain for producing prototypes and pre-series parts in zinc, aluminium, bronze and brass. Pressure die casting quality guaranteed!

Relaxation. Alongside high-tech for more profit we are inviting you to come along and relax and enjoy a range of refreshments which include tea, coffee, espresso, cappuccino, juice and marzipan from our base town Lübeck. Also for very tired visitors we will have our own sparkling wine, the traditional HEK - Sekt as a refresher.

Looking forward to seeing you.

We remain

MCP - HEK Tooling GmbH

Your MCP-HEK Team

Short Company Profile - MCP Group

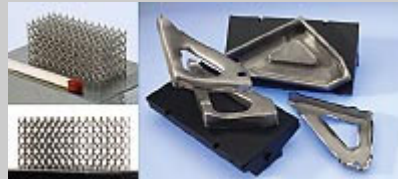
MCP was founded in 1863 and registered in London in 1926 as a mining company and is today involved in the manufacture of high purity metals, metal based chemicals, radiological systems and rapid prototyping equipment. The group has its own manufacturing companies in the United States, England, Germany and subsidiaries throughout Europe and distributors worldwide.

MCP - HEK has had more than 50 years experience in designing and supplying process technologies, equipment and proprietary materials foremost to the aircraft and automotive industry; workholding and material solutions for machining turbine blades and optical lenses; prototype sheet metal forming systems; metal spray mould processes for plastics tooling. One of the most popular processes is MCP Vacuum Casting which MCP introduced as the very first supplier long ago as 1987. MCP Vacuum Casting enables high quality low volume production of plastic and nylon parts and wax parts for metal prototyping. With nearly 1000 installations worldwide in the prototyping industry, MCP is recognised the state of the art supplier with the leading technology. Purpose built, injection moulding machines for prototyping requirement: Silicone, soft tooling technology. 2002: MCP receives the highly regarded TÜV Rheinland certification for vacuum casting machines and is the only manufacturer to supply vacuum casting equipment with the very highest international safety rating: TÜV GS Rheinland, VDE, CE and DIN ISO 9001. 2002: The introduction of the MCP - Realizer SLM

Euromold Frankfurt 3rd - 6th December 2003 Hall: 8.0, Booth No.: E42

The MCP-Realizer^{SLM} Selective Laser Melting

Ultra light structures in stainless steel and cobalt-chrome; some of the most complex and dimensionally demanding geometries ever generated in steel, with over 450 holes and channels per cm³. In this case, SLM technology reduces the density of pure stainless steel from 7.83 g per cm³ to 0.6 g per cm³. Nearly 90% reduction in weight but still retaining an extremely strong structure and stiffness: Applications in aircraft, automotive and medical industries.



Sheet metal forming tools can be produced overnight for rapid prototypes and short run parts. Depending on sheet metal thickness, **SLM tooling can produce up to several thousand parts.**

NEW:

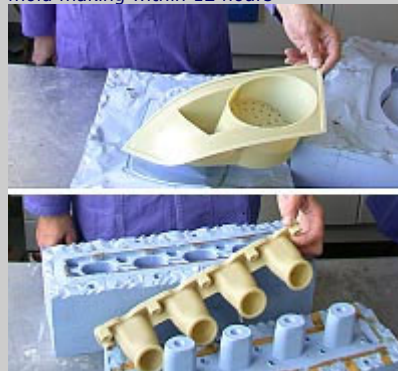
MCP Vacuum Casting of Nylon PA-6 One Step Ahead

A new Rapid Manufacturing Process for producing prototypes and production parts in Nylon PA-6. All the advantages of MCP Vacuum Casting Technology - only much quicker in only 6 minutes.

Some applications: automotive inlet manifolds, engine compartment parts, lamp housings. MCP Vacuum Cast Parts can also be used for clips, living hinges, containers, 2 part inlet manifold shells, air filter housings, radiator water tanks and gears.

The advantages are convincing:

- Quick, accurate, multi-segment silicone mold making within 12 hours



(Photo top with kind permission of Teufel Prototypen GmbH, Photo bottom with kind permission of RPM GmbH)

The MCP Metal Part Casting Process The Finest in Investment Casting Technology

In only 3 days to complicated castings in aluminium and bronze. Use combined technologies! Low Cost Tooling

Utilise the **MCP Silicone Tooling Method**

using Selective Laser Melting Technology which builds Tools and single individual parts in pure, dense steel from CAD data files.

Going back as long as 25 years, all MCP processes have been sold and supplied worldwide with a comprehensive hands-on training course in mould and prototype production through MCP's own technicians. See reference list.

More Information: www.mcp-group.de

to produce quick, low cost, multi segment moulds for wax part production, impossible with standard, traditional tooling methods.

Produce Precision Wax Models

Use the well-established method of master model duplication, the **MCP Vacuum Casting Process**, to produce thin walled, undercut wax models using silicone tooling.

The **MCP Metal Part Casting Process** has been designed specifically to meet the increasing demand for quick, economical metal castings for prototype and pre-series runs.

Pressure Die Casting Guaranteed!

**Full Material Properties. No Voids.
Excellent Surfaces. Minimal Finishing.**

No heat radiation - No dirt - No fumes.



- Bottom left (1) shows the Rapid Prototyping model (RP) in SLA.
- Centre (2) the wax model produced with the **MCP Vacuum Casting Process** in a multi segment mould.
- Right (3) the resulting complex aluminium and bronze components produced with **MCP Metal Part Casting Process**.

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