

2025 MAGMA KOREA USER MEETING

고객사를 위한 최신 프로그램 및 글로벌 혜택

MAGMA Engineering Korea 황범규 부장

2025년 11월 11일 - 12일

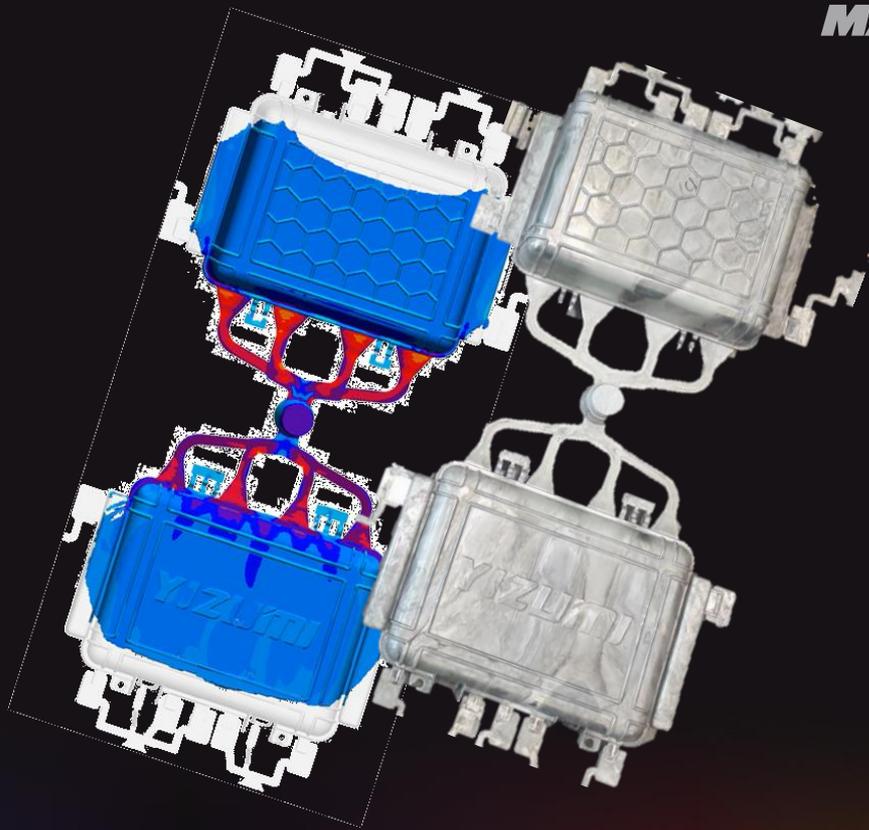
코트야드 메리어트 서울보타닉파크



MAGMASOFT[®]
autonomous engineering

목차

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- 2026년 글로벌 행사
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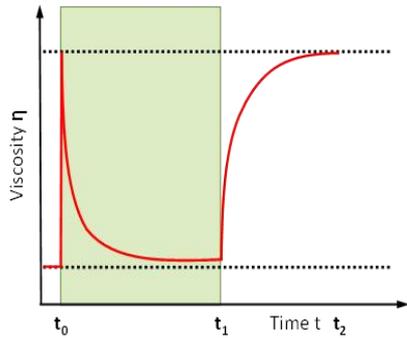
MAGMA Semisolid

반응고 주조

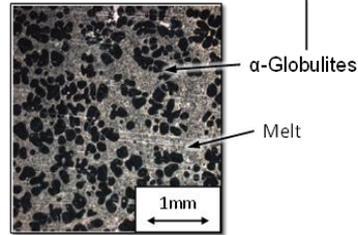
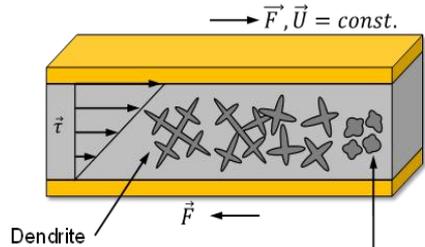
MAGMA Semisolid

Semi-solid(반응고)

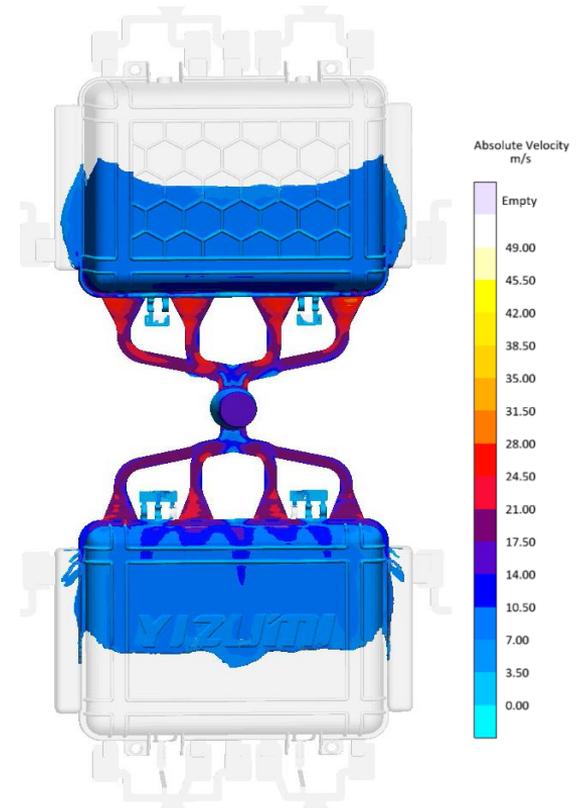
- 반응고 주조의 대표적인 공법인 Rheocasting과 Thixocasting 해석
- Shear stress 하의 Thixotropic 거동 모사(시간 의존적 점도 모델 반영)



- ▶ $t < t_0$: Melt viscosity
- ▶ $t = t_0$: Viscosity increase due to dendrite's growth
- ▶ $t = t_1$: Viscosity decrease due to particle's rounding
- ▶ $t = t_2$: Viscosity increase due to particles's reshaping



시간 의존적 점도 모델

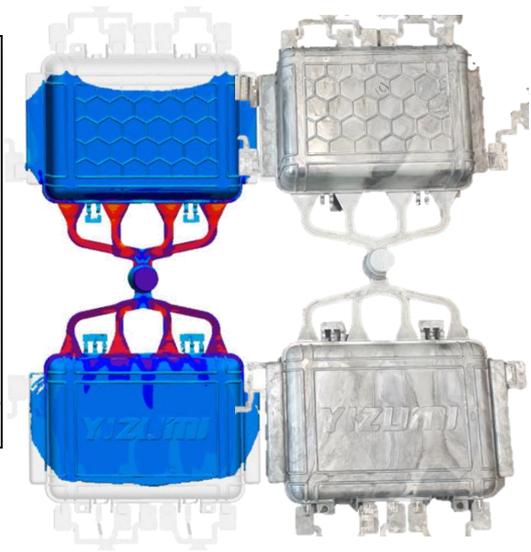
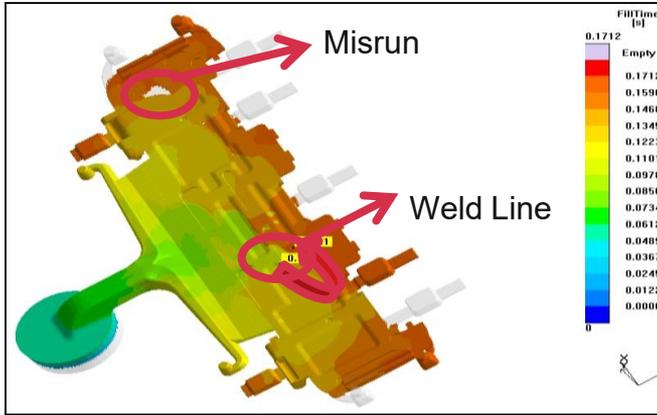
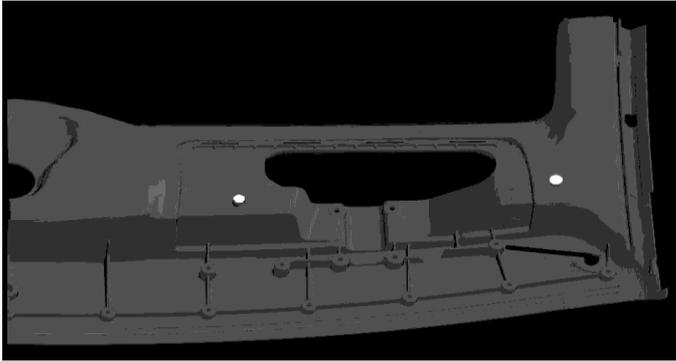


Velocity 결과

MAGMA Semisolid

Semi-solid(반응고)

- SIGMASOFT®에서 MAGMASOFT®
- HPDC module 보유 시 운영 가능
- Semisolid 구독 진행



MAGMA v4.4 Thixo module



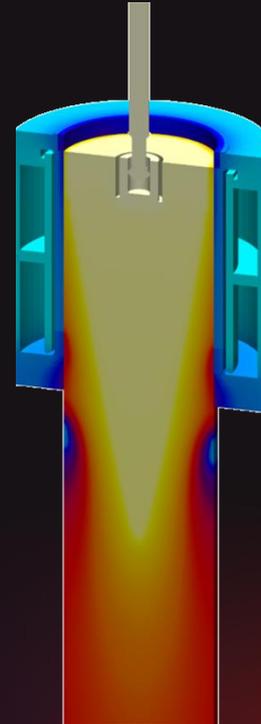
SIGMA v 5.5 Thixo module



MAGMA v6.1 Thixo module

MAGMA Continuous Casting

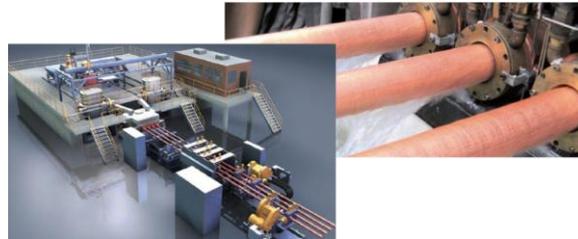
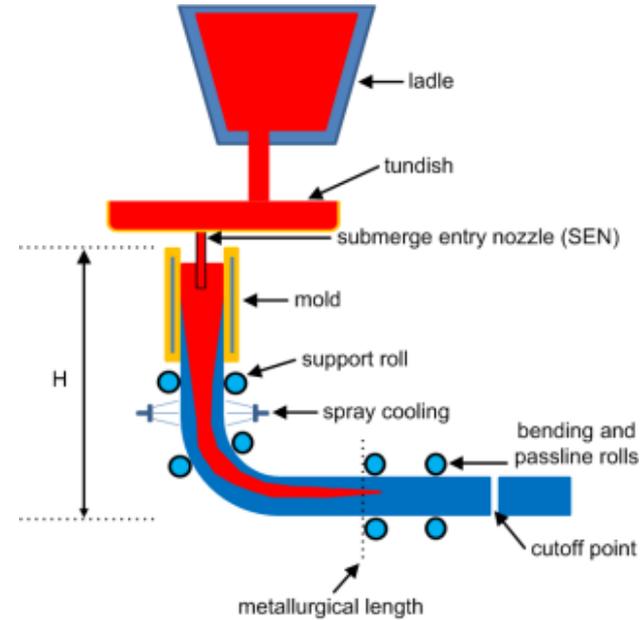
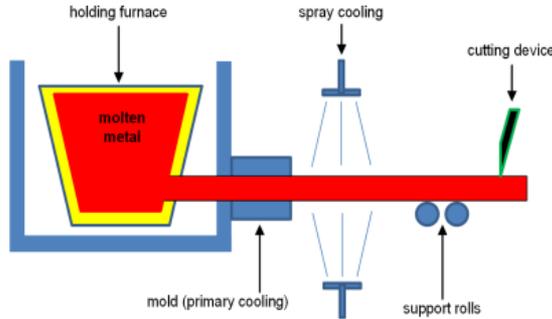
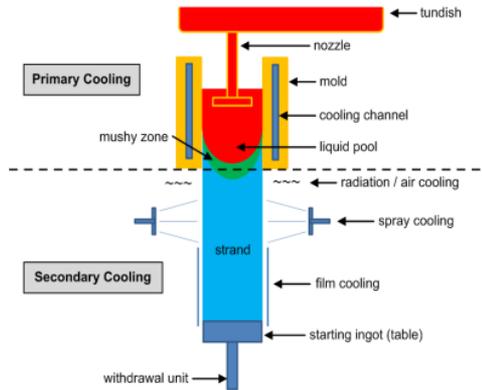
연속 주조



MAGMA Continuous Casting

Continuous Casting(연속주조)

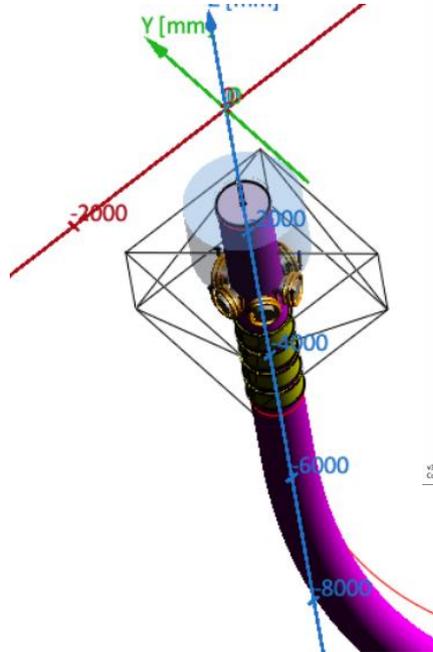
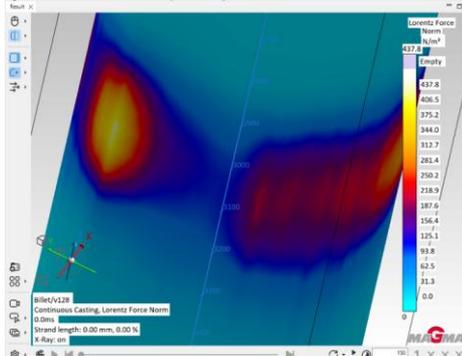
Steel, Al, Cu 합금의 연속 주조 공정 해석 및 최적화를 위한 통합 솔루션



MAGMA Continuous Casting

Continuous Casting(연속주조)

→ EMS (Electromagnetic stirring, 전자기 교반)



v34
Continuous Casting, Flow Tracer

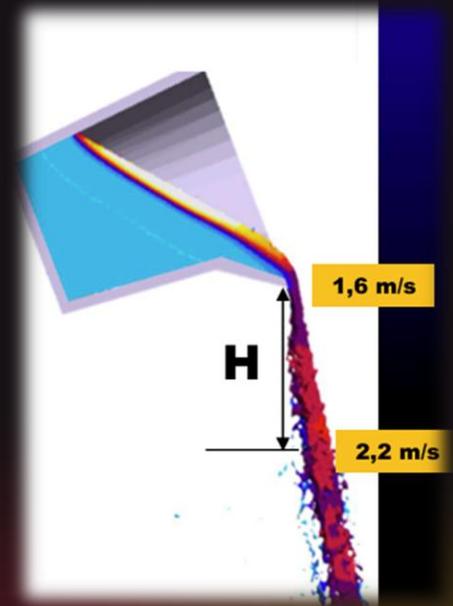


v124
Continuous Casting, Flow Tracer



Global Expert Course

글로벌 전문가의 온라인 강좌



Global Expert Course

글로벌 전문가의 온라인 강좌

Global Expert Course

Cast Iron Online Course

- 대상 : 유지보수 고객사
- 기간 : 2023년 10월 16일 - 11월 29일
- 시간 : 매주 월요일/수요일 오후 6:00 - 7:30 (회당 1시간 30분, 총 18시간)
- 내용 : Solidification & Cooling | Gating System Development | Feeding System Development | Defects & Possible Solutions 등

COURSE HIGHLIGHTS

IN THIS COURSE, YOU WILL LEARN:

Solidification & Cooling

Shrinkage behaviour, nucleation, cooling curves analysis, microstructure.

Gating System Development

Calculation, with/without filters, ceramic gates - how to design gating system for large castings, vertical and horizontal parting line.

Feeding System Development

Calculation, with/without exothermic sleeves, process influence parameters - mould hardness, inoculation, chemical composition, pouring temperature, melt quality.

Defects & Possible Solutions

Shrinkage porosity, core gas, air entrapment, gross inclusion, sand burn/penetration, sand inclusion.

*Simulation examples will be used as case studies.

Testimonial

"A course that exceeded my expectations overall. The trainer managed to teach and simplify something that was complex. I appreciate his patience and his industry knowledge plus his experience in answering the questions that I had."

Alvin Lim, Global Factory Manager
Aluputer Industrial Pte Ltd



CAST IRON FOUNDRY TECHNOLOGY ONLINE COURSE

Monday & Wednesday from Oct 16th to Nov 29th
(except on Nov 13th & 15th, no class)

🕒 05:00PM to 06:30PM SGT

📺 Mode of Delivery: Microsoft Teams Meeting

⌚ Duration: 18 hours

💰 Course Fees: SGD2,000 (subject to 8% GST)*

*Takes of charge for customer with a valid maintenance package

TRAINER PROFILE

Dr. Ricardo Fuoco has extensive experience in foundry technology, working with different casting processes and materials. He has conducted several specific metallurgical and process training sessions for the South American casting market in collaboration with MAGMA Brazil. With over 29 years as a senior casting researcher at the Sao Paulo Technology Institute in Brazil, he was then moved on to serve as the technical director for five foundries of the Metso group in different countries. Currently, he works as a foundry consultant in South America, helping foundries improve casting process efficiency and knowledge.

Trainer's LinkedIn profile: <https://www.linkedin.com/in/ricardofuoco>

Global Expert Course

글로벌 전문가의 온라인 강좌

Global Expert Course

Wheel Online Course

- 대상 : 유지보수 고객사
- 기간 : 2024년 11월 13일 - 12월 6일
- 시간 : 매주 수/금요일 오전 10:30 - 12:30 (회당 2시간, 총 16시간)
- 내용 : Molten Metal Treatment | Degasification | Oxide Inclusions & Metal Cleanliness

Steel Online Course

- 대상 : 유지보수 고객사
- 기간 : 2025년 7월 15일 - 9월 2일
- 시간 : 매주 화/목요일 오전 10:30 - 12:30 (회당 2시간, 총 30시간)
- 내용 : Gating & feeding systems for steels | Metallurgy of carbon & low alloy steels | Types of steel | Melting and deoxidation | Solidification and segregation | Casting defects 등



WHEEL FOUNDRY TECHNOLOGY ONLINE COURSE

Course Days: Wednesdays & Fridays over a 4-week period
Date: November 13, 15, 20, 22, 27, 29, December 4, 6 (2024)
Duration: 16 hours
Format: 8 interactive web sessions via Teams Meeting (2 hours each)
Time Zones:
○ Singapore: 9:30
○ India: 7:00
○ Korea: 10:30
○ Thailand/Vietnam/Indonesia: 8:30
○ Brazil: 22:30 (Tuesday/Thursday)

COURSE HIGHLIGHTS
Dive into the world of Wheel Foundry Technology with our comprehensive course covering:
Molten Metal Treatment | Degasification | Oxide Inclusions & Metal Cleanliness | Grain Refinement | Silicon Modification | Solidification | Low Pressure Permanent Mold Process | Interpretation of Filling & Feeding System Simulations | Heat Treatment of Al-Si Alloys | Mechanical Properties of Al-Si Alloys | Casting Defects & Causes

Who Should Join:
Perfect for foundry professionals, engineers, and anyone looking to expand their knowledge of wheel manufacturing.

Benefits of Attending:

- Learn from industry experts
- Engage in live discussions and Q&A sessions
- Network with international peers

For more details and registration, please reach out to:
academy@magnasoft.com.sg

Don't miss this opportunity to gain technical skills in Wheel Foundry Technology!

Trainer's LinkedIn profile:
www.linkedin.com/in/rajivgupta09



CARBON & LOW ALLOY STEEL CASTING TECHNOLOGY ONLINE COURSE

Course Days: Tuesdays & Thursdays over a 7.5-week period
Date: July 15, 17, 22, 24, 29, 31 (2025)
August 5, 7, 12, 14, 19, 21, 26, 28 (2025)
September 2 (2025)
Duration: 30 hours
Format: 15 interactive web sessions via Teams Meeting (2 hours each)
Time Zones:
○ Singapore / China: 9:30
○ India: 7:00
○ Korea: 10:30
○ Thailand/Vietnam/Indonesia: 8:30
○ Brazil: 22:30 (Monday/Wednesday)

Trainer's LinkedIn profile:
<https://www.linkedin.com/in/rajivgupta09>

COURSE HIGHLIGHTS
IN THIS COURSE, YOU WILL LEARN
Gating & feeding systems for steels | Metallurgy of carbon & low alloy steels | Types of steel | Melting and deoxidation | Solidification and segregation | As-cast microstructures | Heat treatment | Annealing and normalizing | Quenching and tempering | Welding repair and stress relief | Casting defects

PLEASE EMAIL TO:
academy@magnasoft.com.sg

WORLDWIDE REGISTRATION
Singapore: 9:30 AM, India: 7:00 AM, Korea: 10:30 AM, Thailand/Vietnam/Indonesia: 8:30 AM, Brazil: 22:30 PM (Monday/Wednesday)

MAGMA academy

The main title "MAGMATIMES" is displayed in a large, bold, white, sans-serif font. The letter "G" is stylized with a red circular element on its left side. The background behind the text consists of several overlapping, angular, geometric shapes in shades of grey and blue, creating a modern, industrial aesthetic.

MAGMA TIMES

글로벌 매거진

MAGMA TIMES

글로벌 매거진



- MAGMA GmbH 본사에서 발행하는 글로벌 매거진
- 발행 및 형태 : 분기별(연 4회) / 디지털 매거진
- 배포 대상 : 전세계 MAGMASOFT® 사용자 및 고객사
- 주요 내용 :
 - Case study 전세계 고객사의 실제 해석 사례 및 개선 효과 소개
 - New tech : 최신 MAGMASOFT® 기능 및 기술, 모듈별 응용포인트
 - People & Culture : MAGMA 글로벌 직원 인터뷰 및 현지 소식
 - Customer List : 신규 MAGMASOFT® 도입 고객사 리스트 공개

MAGMA TIMES

글로벌 매거진



Publication of MAGMA
Gefüßtechnologie GmbH, Volume 50
NO. 2/2025

Informed Process Optimization With MAGMASOFT® & MAGMA ECONOMICS

Luminus Korea Co., Ltd. manufactures high-quality die-cast aluminum heat sinks for the automotive industry. For cost-effective series production, both casting processes and long tool life are essential. In practice, however, recurring tool breakages occurred in a specific die insert with a frequency of at least two failures per month (Fig. 1). These failure events led to unplanned machine downtimes, lost production time, and high maintenance costs, which significantly affected both the overall equipment effectiveness (OEE) and the profitability of the process.

Root Cause Analysis With MAGMASOFT®: Focus on Thermal Stresses

The Luminus engineering team used MAGMASOFT® applying the MAGMA APPROACH to methodically analyze the

root causes of the tool breakage. Thermomechanical simulations identified cyclically induced thermal stress peaks in highly stressed zones as the main cause of the crack formation and subsequent breakage of the die inserts (Fig. 2). The

analysis revealed that in areas subject to high thermal stress, stress accumulation in the production cycles gradually led to the material limits being exceeded. The experienced engineers identified pouring temperature and spraying time in particular as controllable influencing parameters for systematically influencing the local heat balance.

Virtual Design of Experiments: Quantifying Conflicting Goals

To derive reliable process parameters, the engineers created a virtual design of experiments (virtual DoE) with a total of 15 simulations. Three different pouring temperatures (650 °C, 670 °C, 690 °C) were varied in combination with five different spraying intervals (2-10 s). The evaluation was carried out using parallel coordinate diagrams (Fig. 3) that visualized the effects on die lifetime and component quality. The result: Lower pouring temperatures considerably reduced the thermally induced stress peaks, thus significantly extending tool life. At the same time, the risk of casting defects, such as cold shuts or porosity, increased – a typical goal conflict between component quality and tool life.



Fig. 1: The insert broke frequently, at least twice a month, causing downtimes and high maintenance costs.

국내 고객사 성공 사례 소개

- ─ No. 2/2025호 : “루미너스” 해석 사례 1면 게재
- ─ “MAGMA ECONOMICS를 활용한 히트싱크 금형 비용절감 사례”

글로벌 홍보 효과

- ─ 기술 경쟁력과 혁신 사례를 전 세계 업계에 알릴 수 있는 기회
- ─ 전 세계 60개국 이상 MAGMASOFT® 사용자 및 예비 고객사에 노출
- ─ 동종 업계 벤치마크 사례로 주목

MAGMA TIMES

글로벌 매거진

Virtual Excellence Through a Systematic Approach: Pusan Cast Iron Adopts the MAGMA APPROACH

Today, the production of safety-critical castings requires a degree of process control that has long become impossible to attain with conventional trial-and-error methods. Defects in the casting process not only have an isolated effect on the quality and operational reliability of the individual component, but also reduce both robustness and cost-effectiveness of the entire process chain. Highly stressed components in particular, such as universal joints, have to comply with extremely demanding requirements for leak-tightness, fatigue strength, and reproducible material properties.

Pusan Cast Iron, Korea, a leading supplier of components for drive and combustion systems, was confronted with severe shrinkage defects during the development of a universal joint. These defects prevented component approval, significantly reduced productivity, and resulted in a considerable increase in manufacturing costs.

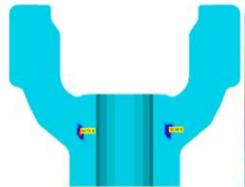


Fig. 1: Porosity in critical areas of the casting resulted in a high scrap rate.

Initial Situation: A Critically Unstable Process

Leak tests revealed severe shrinkage defects in a single cavity of the twelve-cavity mold, compromising the structural integrity of the casting. Although the other eleven cavities produced flawless parts, this single defect was enough to call the entire process into question. The effective yield dropped to eleven instead of twelve sound castings per pour – an unacceptable situation for a company that relies on maximum mold utilization. Steady production with eleven cavities was therefore not an option, as this would have fundamentally undermined the economic efficiency of production. Pusan Cast Iron was therefore faced with a classic dilemma: either conducting a costly and time-consuming trial-and-error search for a solution – or adopting a systematic, simulation-based method that virtually maps the problem, identifies its root causes, and leads to the optimal corrective measure.

The MAGMA APPROACH as a Methodological Framework

Instead of relying on the conventional trial-and-error method, Pusan Cast Iron opted for a paradigm shift: a simulation-based optimization strategy with MAGMASOFT® that virtually represents the entire casting process chain – from the liquid metal, to mold filling, up to solidification.

In the first step, the real defects were reproduced virtually. MAGMASOFT® made it possible to precisely locate the shrinkage areas and to uncover their underlying root causes. The 'Fraction Liquid' and 'Hot Spot FSTime' results revealed isolated solidification areas that led to shrinkage porosity due to insufficient feeding (Fig. 2). For the first time, the focus was not only on observing the defects, but also on developing a physical understanding of their formation – the foundation for sustainable optimization.

The MAGMA APPROACH provides the methodological framework: a structured procedure that combines virtual design of experiments with systematic decision-making logic. This methodology is based on six steps: goal definition, defining degrees of freedom, selecting quality criteria, task structuring, selecting an approach, and implementation of results. Each step is directly linked to the problem, and contributes iteratively and efficiently to its solution.

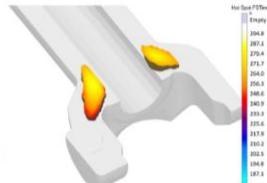


Fig. 2: The simulation of the real process revealed the formation of unwanted hot spots in critical areas of the part.

1. Define the Goal: Precision and Efficiency as Key Criteria

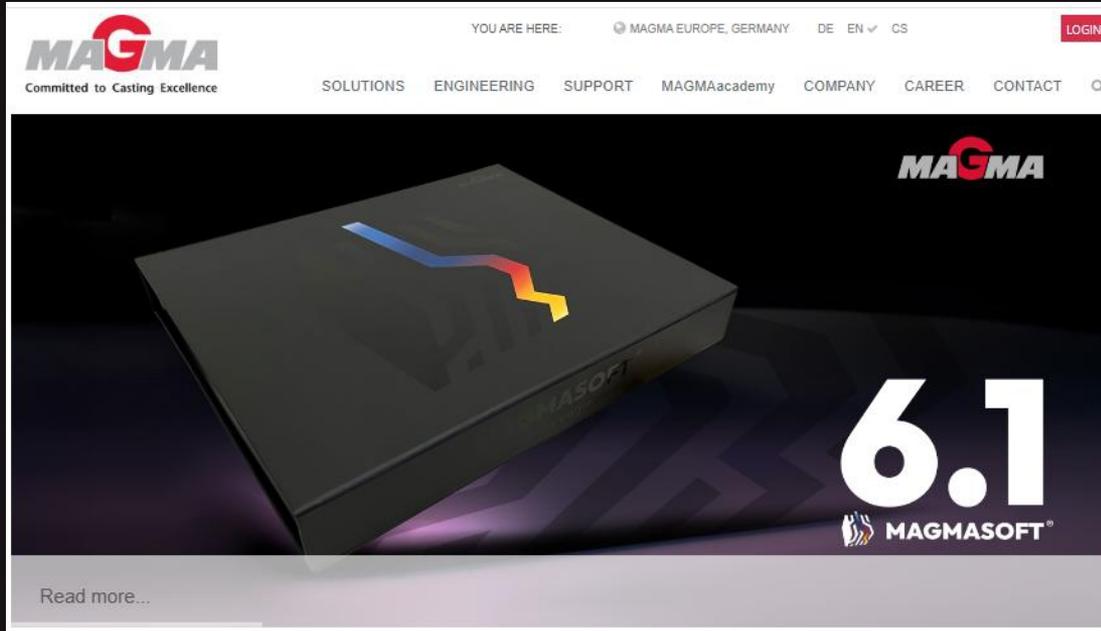
The primary goal was clear: to eliminate all shrinkage defects while restoring the original productivity of the twelve-cavity mold. Secondary objectives included reducing scrap and ensuring robust process control in the long term. This step clearly

국내 고객사 성공 사례 소개

- No. 3/2025호 : “부산주공” 해석 사례 게재
- “Implementation Plan을 통한 슬립 요크 수축결함 최적화 사례”

글로벌 홍보 효과

- 기술 경쟁력과 혁신 사례를 전 세계 업계에 알릴 수 있는 기회
- 전 세계 60개국 이상 MAGMASOFT® 사용자 및 예비 고객사에 노출
- 동종 업계 벤치마크 사례로 주목



MAGMA Website

웹사이트

MAGMA Website

Case studies



Less Is Not Always More: Reduce Porosity With Geometry Optimization

Hyundai WIA produces differential gearboxes for automobiles made of ductile iron GJS-700. The demands on gearboxes are high. As safety-critical castings, they should be durable and withstand high mechanical loads. Therefore, the best casting quality is required to ensure durability, avoid unnecessary and costly repairs, and thus live up to the company's good reputation.

Less Melt, More Problems

The product design seemed perfect. The objective of the foundry was to use as little material as possible, that is, to produce the part with optimal material usage. However, the result of the subsequent process development was not as good as required to meet the demands. The simulation of the preferred casting layout suggested a strong tendency towards shrinkage porosity. According to the simulation, this was due to feeder and feeder neck failing to compensate for the volume deficiency during solidification (Fig. 1).

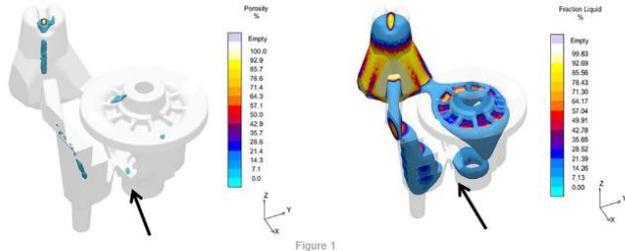


Figure 1

Hyundai WIA produced a prototype that confirmed the simulation results: The prototype showed excessive porosity in the critical areas. During service, the gearbox might not be able to permanently withstand the mechanical loads and might fail to meet the manufacturer's quality standards. With this layout, series production was out of the question (Fig. 2).

- MAGMA GmbH 웹사이트 > Solutions
- 공정별 글로벌 고객사의 Case study 소개
- Cast Iron : 현대위아
- HPDC : 한국 GM, KIA

- MAGMA TIMES 사례도 웹사이트에 게재 예정

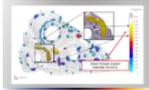
MAGMA Website

자료실

- 회원가입 후 > Support 로그인
- Tips & Tricks : MAGMASOFT® 활용 꿀팁
- Webinar 및 세미나 자료 다시보기
- MAGMA 기본 교육 자료 다운로드
- MAGMA TIPs 자료 다운로드
- UGM 자료 다시보기
- MAGMAinteract® 다운로드 : 무료 뷰어
- MAGMASOFT® 매뉴얼 다운로드
- MAGMASOFT® 프로그램 다운로드

Tips & Tricks SUPPORT / Tips & Tricks

MAGMASOFT®를 사용하는데 유용한 Tips and Tricks이 있습니다.
오른쪽의 찾기 기능을 사용하여 목록을 선별할 수 있습니다.

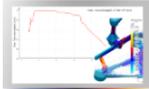


No. 052: Modified 'Hot Spot FSTime' Result as 'User Result'

2021년 6월 14일

In this MAGMATIP will show you how to use a modified 'Hot Spot FSTime' result to see at a glance whether a hot spot is critical or not.

[Download PDF](#)

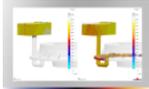


No. 065: Assessing Maximum Velocities in the Gate

2021년 1월 26일

In this MAGMATIP, you will learn how to create a curve showing the maximum velocity in a gate during the filling phase.

[Download PDF](#)



No. 011: How to Model a Bottom Pour Ladle

2020년 12월 21일

In this MAGMATIP, you will learn how to define a filter as a stopper and for what applications you can use this procedure. You can control the interruption (stopper or retardation plate) either by time or by percentage.

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Tips - Downloads



Learning World

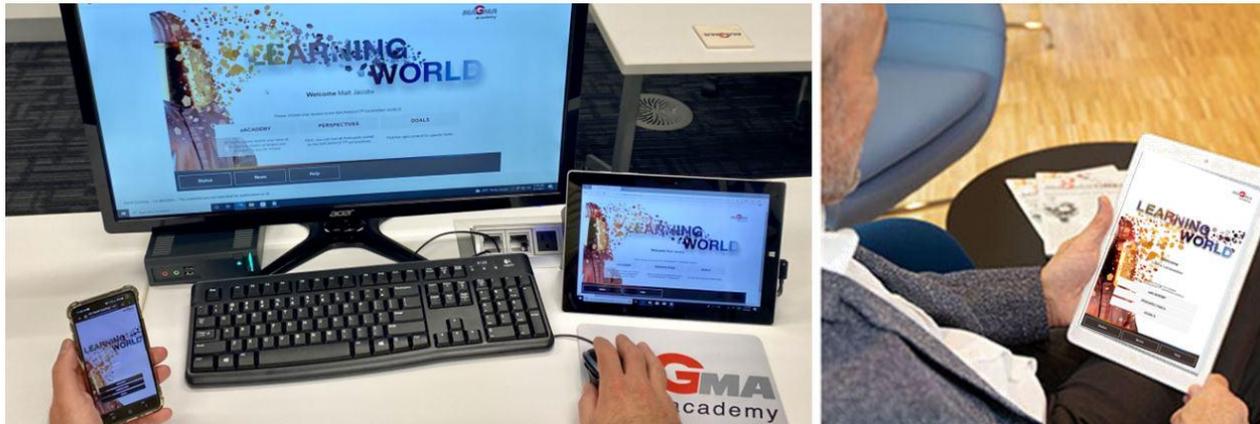
Learning World

온오프라인 교육 프로그램

Learning World

Learning World ?

- 오프라인 교육 세션과 온라인에서의 학습 시나리오를 결합하여 제공하는 다양한 교육 프로그램
- 자기 주도적으로 일정 조정이 가능한 온라인 학습은 오프라인 교육을 보완 가능
- MAGMAacademy steps에 따라 수료한 교육프로그램에 의해 제공되는 콘텐츠가 달라짐



Learning World

Benefit

- MAGMAacademy의 오프라인 교육과 MAGMASOFT® Learning World를 결합하면 학습 효율을 극대화 할 수 있음
- 기능에 대한 사용 방법을 매뉴얼이 아닌 사진과 함께 자세히 알려주기 때문에 이해하기 쉬움
- 스스로 실습하기 위한 CAD 파일과 실습 가이드가 제공되고 MAGMA skill up을 위한 자발적인 학습 가능
- 시간, 장소에 구애 받지 않고 유저가 스스로 결정하여 학습 가능
- 지속적인 업데이트로 최신 기능에 대한 학습 가능

Learning World

Learning World 접속 방법

LEARNING WORLD

YOU ARE HERE: MAGMA KOREA EN KO LOGOUT

SOLUTIONS ENGINEERING SUPPORT MAGMAAcademy COMPANY CONTACT

LEARNING WORLD SUPPORT / LEARNING WORLD

MAGMA Support Login
Welcome to MAGMA Support
Support Request
Upload / Download
LEARNING WORLD
Product Documentation
Tips & Tricks
MAGMASOFT 6.0
Support Info
MAGMA Internal
My Profile
Webinars
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Tips & Tricks
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Support Info
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My Profile
Webinars
Interact Download
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MAGMASOFT® 고객은 새롭게 출시된 MAGMASOFT® LEARNING WORLD를 통해 MAGMAAcademy 교육 과정의 학습 콘텐츠에 액세스 할 수 있습니다. 당사가 제시하는 "blended learning"은 새롭게 습득한 지식을 지속적으로 연습하여 MAGMASOFT® 어플리케이션의 이점을 지속적으로 증대 시키는 데 매우 적합합니다.

Continue to the MAGMASOFT® LEARNING WORLD

Log in with your usual login data.

WHAT IS BLENDED LEARNING?

www.magmasoft.co.kr

로그인 후 > Support > Learning world 클릭

Learning World

The screenshot shows a web browser window with the URL `magmasoftlearning.de/start/magmasoft/`. The page title is "Learning Cloud". The main content area displays a grid of course cards. Each card features a white icon of a smartphone with a globe on its screen, set against an orange background. Below the icon, the text reads: "High Pressure Die Casting – c/o MAGMA – The contents are not intended for... Learning world". The same text is repeated for "Permanent Mold Casting" and "Sand Casting". A red box highlights the top row of three cards, and another red box highlights the bottom row of three cards. A red line connects the two boxes, indicating a zoom or transition. In the bottom right corner, there is a dark grey button with the text "Module 선택".

Learning Cloud

High Pressure Die Casting – c/o MAGMA – The contents are not intended for... Learning world

Permanent Mold Casting – c/o MAGMA – The contents are not intended for... Learning world

Sand Casting – c/o MAGMA – The contents are not intended for publicatio... Learning world

High Pressure Die Casting – c/o MAGMA – The contents are not intended for... Learning world

Permanent Mold Casting – c/o MAGMA – The contents are not intended for... Learning world

Sand Casting – c/o MAGMA – The contents are not intended for publicatio... Learning world

Module 선택

Learning World

LEARNING WORLD

MAGMA academy

Welcome Ji Woong Park

Training 기준 Perspective 기준 Objective 기준

Please choose your access to the MAGMASOFT® LEARNING WORLD

eACADEMY	PERSPECTIVES	GOALS
All the Academy events you have attended are clearly arranged and available to you for review.	Here, you can find all flashcards sorted by the MAGMASOFT® perspectives.	Find the right content for specific tasks.

Status News Help

High Pressure Die Casting - c/o MAGMA - The contents are not intended for pub...

Learning World

eAcademy

The screenshot shows a web browser window with the URL magma-software.com/learning-de/pub/magma-software/file/UOAD0E9A32FC741F2990CD65D34C37067EN/U883B46FB83464C17AF540409ABE41989EN/lw/C32C4D25B316A4E798E686D58DF45C89EEN/index.html?cloudlink.... The page title is "eACADEMY" and the logo "MAGMA academy" is in the top right. Below the title, it says "Select the learning contents of your attended events to review them:". The main content is divided into three columns: "TRAININGS" (yellow header), "WORKSHOPS" (red header), and "SEMINARS" (blue header). Each column contains a list of items with a red checkmark icon. At the bottom, there is a dark grey bar with a left-pointing arrow and the text "Back to the main page".

eACADEMY

Select the learning contents of your attended events to review them:

- TRAININGS**
 - Basic Training
 - Process Training – Cast Iron
 - Process Training – Steel Casting
 - Process Training – Non-Ferrous ...
 - Process Training – Investment C...
 - Process Training – Stresses in S...
 - Process Training – Core Product...
 - Virtual Process Optimization
- WORKSHOPS**
 - Geometry Creation for Optimizat...
 - Tips & Tricks
 - Inverse Optimization and 'User R...
 - Coaching MAGMASOFT®
 - Interpretation of Simulation and ...
 - Coaching MAGMAstress
- SEMINARS**
 - Evaluation of Simulation Results...
 - Seminar 2
 - Seminar 3

[Back to the main page](#)

Sand Casting – c/o MAGMA – The contents are not intended for publication or di...

수료한 교육프로그램에 맞는 Contents 제공

International MAGMA User Meeting 2024

October 9-11, 2024

RADISSON BLU – Frankfurt

Don't forget
to **SAVE** the
DATE!
&
REGISTER
NOW!

MAGMA

International MAGMA User Meeting 2024

2024년 10월 9일 - 11일, 독일 프랑크푸르트

International MAGMA User Meeting 2024

October 9-11, Frankfurt, Germany

- 장소 : 독일 프랑크푸르트
- 일정 : 10/9(수)~10/11일(금), 2박 3일
- 국내 참석 업체 : 현대자동차, 서진시스템
- I-UGM 참석자 규모 : 약 350명
- 참가비 : 무상 (유지보수 고객)



International MAGMA User Meeting 2024

AGENDA



Wednesday, October 9, 2024

19:00 **MAGMAwelcome**

Thursday, October 10, 2024

08:30 Registration

09:00 **Welcome and Plenary Presentation I**

Modeling of Material Properties - From

Deterministic to Probabilistic Modeling

Vanessa Glöck-Nard, MAGMA GmbH, Germany

Data-Driven Prediction Study of Elongation

Dispersion in High-Pressure Cast Components

Jin-Hwan Kim, Hyundai Motor Company Namyang

R&D Center, South Korea

Creative Solutions for an E-Mobility Housing

Using Sand Cores in Low-Pressure Casting

Baris Cavrut & Deniz Güler, Doktag A.Ş., Manisa,

Turkiye

10:30 Coffee Break

11:00 **Plenary Presentation II**

MAGMASOFT® 6.1

Tibetan Kottuhf, MAGMA GmbH, Germany

Developments in MAGMASOFT® -

An Outlook

Jasper Thorborg, MAGMA GmbH, Germany

12:30 Lunch

14:00 **MAGMAworkshops**

Cast Iron

Application of MAGMASOFT® on Engine

Components

Chan Xiuming, Weichai Power Co. Ltd., China

Finding a Real Solution

Ayyappan Manikandan, Aquasub Engineering

Unit V, India

Continuous Improvement with Creative

Solutions for Optimizing Casting Quality

Volkan Nasoğlu, Trakya Döküm San. ve Tic. A.Ş.,

Head Office, Türkiye

Lightweight Efforts on Cast Iron Parts

Osım Ayarlı & Mehmet Mert Buldu, Doktag Döküm,

çelik Ticaret ve Sanayi A.Ş., Orhangazi, Türkiye

MAGMA ECONOMICS

Matthias Bosenberg, MAGMA GmbH, Germany

Steel Casting

Overcoming Challenges of Steel Castings in

Pinar Döküm with MAGMASOFT®

Gülşah Uslu, Pinar Döküm Sanayi ve Tic. A.Ş., Türkiye

Record-Breaking Casting Success Powered

by MAGMA's Expertise

Carsten Siggler, Andes Döküm Sanayi ve Tic. A.Ş.,

Türkiye

Simulation Topics of Solidification of Sand

Steel Casting

Albert An, China Machinery Industrial Products Co.,

Ltd., China

Optimized Production Using MAGMASOFT®

Rotacaster & Investment Casting

Emir Subašić, ACCESS a.V., Germany

Useful Tips for Realistic Simulation of Steel

Investment Castings

Petr Kotas, MAGMA GmbH, Czech Republic

MAGMA ECONOMICS

Paul Farnes, MAGMA GmbH, Germany

Die Casting (HPDC)

Using a Modified Neural Network with

MAGMASOFT® Optimization Data to Select

Optimum Conditions for HPDC Processes

Frank Cooper, Pressure Die Casting Pty. Ltd.,

South Africa

Adjustment of Alloy Properties and

Heat Transfer Conditions for Realistic

Simulations

Siddhant Thobhani, Bocar GmbH, Germany

Indirect Squeeze Casting Technology for

the Automotive Industry

Milan Luňák, Top Alut s.r.o., Czech Republic

How to Achieve the Best Compact Gating

Design and Balanced Filling for Multi-Cavity

HPDC

Devrim Bıldırcı, Süperpar Otomotiv Sanayi ve

Tic. A.Ş., Türkiye

행사일정표

10월 9일 : MAGMA Welcome

MAGMA Welcome : 참석자들을 위한 웰컴 이브닝 파티 진행

저녁 식사와 함께 상호 유대를 쌓는 시간 마련(MAGMA 제공)

10월 10일 : 글로벌 사용자 발표 및 Workshop 진행

글로벌 사용자 발표 : MAGMASOFT® 사용자 및 매니지먼트들이 프로그램을 활용해 제품개발, 품질개선, 비용절감, 생산성 향상, 공정 확립 등 자사 제품에 대해 개선한 사례와 경험에 대해 발표

Workshop : 각 공정별 특화된 사용자 발표 (6개 공정 中 택 1)

주철 / 주강 / 고압 다이캐스팅 / 비철(저압 다이캐스팅 사형주조, 퍼머넌트 몰드 등) / 코어 메이킹 / 연속주조

10월 11일 : 글로벌 사용자 발표 및 Forum 진행

Forum : 특정 주제에 대해 참석자들이 서로 토론하고 경험을 공유하는 세션 (주제는 추후 확정 예정)

International MAGMA User Meeting 2024

10월 9일 : MAGMA Welcome



MAGMA Welcome

- 시간 : 오후 7시
- 장소 : 래디슨블루 호텔
 - 소름 & 가이아홀 & 로즈홀 & 야외테라스에서 진행
- 메뉴 : 핑거 푸드 및 바비큐 맥주, 와인 등 주류 포함
- 목적 : 참석자 간 상호 유대 형성을 위한 편안한 분위기의 식사 및 파티 진행

International MAGMA User Meeting 2024

10월 10일 : 글로벌 사용자 발표 & Workshop

└ 글로벌 사용자 발표

└ 일시 : 2024년 10월 10일(목), 9:00 ~ 11:00

└ 발표자 및 발표 제목 : 아래 발표 외 상세 첨부 아젠더 참조 (하기 발표는 10/10 또는 10/11 발표 예정)

소속	발표제목	발표자	나라
Volkswagen AG	Validating Flow Simulations with AI-Based Optical Quality Control: A Systematic	Stephan Goeke	Germany
Weichai Power Co. Ltd	<i>Application of MAGMASOFT® on Engine Components</i>	Chen Xiuming	China
Fonderie Mario Mazzucconi S.p.A.	<i>Mechanical Properties Comparison Between Simulated and Measured Data on an AISi7Mg03 LPDC Crossmember Through T6 Heat Treatment</i>	Allessia Casari	Italy
Hyundai Motor Company	Data-Driven Prediction Study of Elongation Dispersion in High-Pressure Cast Components 데이터기반 고압주조 부품의 연신율 산포 예측연구	Jin-Kwan Kim	Korea
Top Alulit s.r.o	<i>Indirect Squeeze Casting Technology for the Automotive Industry</i>	Milan Luňák	Czech Republic
Trakya Dokum San. ve Tic. A.Ş. Head Office	<i>Continuous Improvement with Creative Solutions for Optimizing Casting Quality</i>	Nebi Akgun	Turkiye

International MAGMA User Meeting 2024

10월 10일 : 글로벌 사용자 발표 & Workshop

Workshop

- 일시 : 2024년 10월 10일(목), 14:00 ~ 17:00
- 공정별 Workshop 진행 :
 - Cast Iron – 주철
 - Steel – 주강
 - Die Casting (HPDC) – 고압 다이캐스팅
 - Non-Ferrous (Permanent Mold, LPDC, Sand Casting)
– 비철 (퍼머넌트 몰드, 저압 다이캐스팅, 사형주조)
 - Core Making Processes – 코어 메이킹
 - Continuous Casting – 연속 주조
- 참석자는 총 6개 공정 중 1개를 선택하여 참여 가능



International MAGMA User Meeting 2024

10월 10일 : MAGMAevening



MAGMAevening

- 시간 : 오후 6시 30분
- 장소 : DEPOT 1899
 - 실내 또는 야외에서 진행
- 메뉴 : 독일 현지 요리
 - 소고기, 슈니첼, 소시지, 햄버거 등
 - 맥주 등 주류 포함
- 목적 : 참석자를 위한 저녁식사 및 만남과 교류의 장 제공

International MAGMA User Meeting 2024





EUROGUSS 2024

세계 최대 다이캐스팅 전문 전시회

EUROGUSS 2024

2024년도 전시 결과

- 장소 : 독일 뉘른베르크
- 일정 : 2024년 1월 16일 - 1월 18일
- 규모 : 33개국 641개 기업이 참가
14,300명 이상 방문

- MAGMA 전시 부스 : Hall 7, Booth 7-430

- MAGMA Presentations

- **Semi-Solid Casting** – Robust Industrialization by Combining a Digital Twin and Systematic Casting Trials
- Dr. Horst Bramann, MAGMA Gießereitechnologie GmbH
- **From Design to prediction of local mechanical properties** – casting simulation of large structural components
- Dr. Horst Bramann & Dr. Marcus Schopen, MAGMA Gießereitechnologie GmbH



2024 MAGMASOFT®

해외기술공유세미나

"GET ADVANCED KNOWLEDGE"



2024.12.5 / 13.00 PM



대구기계부품연구원

- 국내 및 해외 해석 사례
- MAGMASOFT® 6.1
- MAGMA ECONOMICS



MAGMAacademy Seminar 2024 | 해외기술공유세미나

2024년 12월 5일, 대구기계부품연구원

MAGMAacademy Seminar 2024

개요

- ㄱ 세미나 제목 :
 - ㄱ MAGMAacademy Seminar 2024 | 해외기술공유세미나
- ㄱ 취지
 - ㄱ 국내 고객사에서 해외 사례에 대한 관심도 높음
 - ㄱ 해외 주조해석 사례 공유를 통한 MAGMASOFT® 활용 방향성 협의
- ㄱ 대상
 - ㄱ 모든 고객
- ㄱ 내용
 - ㄱ I-UGM 유저 발표 내용 공유
 - ㄱ 해외 적용사례에 대한 이해 및 고객사에 대한 적용 가능성 검토
 - ㄱ 실 적용사례에 대한 분석을 통해 추가적인 확대 적용 가능성 검토

MAGMAacademy Seminar 2024

제 2회 해외기술공유세미나

- 일정 및 장소 : 2024년 12월 5일(목), 대구기계부품연구원
- 참석 업체 : 7개 업체 13명 참석
- 내용 : 12개의 해외사례 공유



MAGMAacademy Seminar 2024

Agenda

시간	발표	발표자
12:00 – 13:00	점심식사	
13:00 – 13:15	Welcome Greeting & MAGMAacademy Implementation Plan 안내	조연상 지사장
13:15 – 14:00	MAGMA Economics 소개 <ul style="list-style-type: none">MAGMA Economics: 주조 비용과 CO₂ 배출량 예측 신기능주입 온도 변화에 따른 주조 비용 절감 사례금형 크랙 개선 및 주입 온도, 탄소 배출 감소를 통한 비용 절감 사례	정재민 차장
14:00 – 14:30	Cast Iron & Steel <ul style="list-style-type: none">MAGMASOFT®와 MAGMAlink를 활용한 주철 제품 경량화 사례Inverse optimization을 이용한 Sand mold 물성치 매칭대형 주강품의 주조방안 변경을 통한 Hot tear 개선 사례	박지용 과장
14:30 – 14:40	Coffee Break	
14:40 – 15:40	HPDC <ul style="list-style-type: none">GIGA Casting 해석을 위한 접근 방식 제안멀티 캐비티를 위한 최상의 게이팅 설계와 균형 충전 달성 사례Plunger 구간별 최적화 사례	이동규 대리
15:40 – 15:50	Coffee Break	
15:50 – 17:00	LPDC <ul style="list-style-type: none">Sand core를 사용하는 전기차용 커넥터 하우징 해석 사례열처리된 크로스멤버의 해석 데이터와 측정 데이터 간 기계적 특성 비교 사례LPDC/Wheelin MAGMASOFT® 6.1	정재민 차장
17:00 – 17:30	MAGMASOFT® 6.1 <ul style="list-style-type: none">What's New in MAGMASOFT® 6.1	이주형 대리
17:30 – 18:00	Open questions	

International MAGMA User Meeting 2026

7 - 9. Oct. 2026, Salzburg, Austria

SAVE THE DATE!
SALZBURG **2026**

International MAGMA User Meeting 2026

7. - 9. Oktober 2026
WYNDHAM GRAND – Salzburg, Österreich



EUROGUSS 2026

Hall 4, Booth 4-342



Leading Trade Fair for Die Casting, Technology, Processes, Products
13 - 15 January 2026

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Hall 4 / Booth Number 4-342

MAGMA Gießereitechnologie GmbH

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Committed to Casting Excellence

Visit EUROGUSS 2026

The international die casting industry will meet in Nuremberg from January 13 to 15, 2026.

[Get your Ticket now!](#)

- 장소 : 독일 뉘른베르크
- 일정 : 2026년 1월 13일 - 1월 15일
- MAGMA GmbH 전시 참가
- Hall 4 Booth 4-342



창립 20주년 기념

MAGMA

2025 MAGMA KOREA USER MEETING

UGM

2025. 11. 11 - 11. 12

코트야드 메리어트 서울 보타닉파크

11.11 화 ●●●●●●●●
주조의 경제적 가치와 지속가능성
● 비용절감 · 품질향상 · 친환경 전략

11.12 수 ●●●●●●●●
SI가 바꾸는 주조의 미래
● 차세대 주조 혁신과 미래 경쟁력

2025 MAGMA KOREA USER MEETING

2025년 11월 11일 - 12일, 서울

2025 MAGMA KOREA USER MEETING

마그마 행사 진행 계획

▣ MAGMA Korea User Meeting

- ▣ MEK UGM : 국내 고객들의 사례 공유와 교류를 위한 국내 행사
- ▣ 진행 계획 : 격년 (홀수 년)

▣ MAGMA International User Meeting

- ▣ I-UGM : 전세계 고객들의 사례 공유와 교류를 위한 국제 행사
- ▣ 진행 계획 : 격년 (짝수 년)

▣ 향후 진행 계획

- ▣ 2024 **MAGMA International User Meeting**, 10월, 독일 프랑크푸르트 / **MAGMAacademy Seminar** 12월, 대구
- ▣ 2025 **MEK MAGMA User Meeting**, 11월, 서울
- ▣ 2026 **MAGMA International User Meeting**, 10월, 오스트리아 잘츠부르크 / **MAGMAacademy Seminar** 12월, 대구
- ▣ 2027 **MEK MAGMA User Meeting**, 11월, 서울
- ▣ ...

국내외 마그마 행사 소개

내년 행사 계획

- ㄱ 2026년 4월 13일 ~ 17일
 - ㄱ 대한민국 서울 | SIMTOS 2026, 로봇 및 디지털제조기술 특별전 (한국다이캐스팅학회 연계)
- ㄱ 2026년 10월 7일 ~ 9일
 - ㄱ 오스트리아 잘츠부르크 | International MAGMA User Meeting 2026
- ㄱ 2026년 12월
 - ㄱ 대한민국 대구 | MAGMAacademy Seminar 2026 | 해외기술공유세미나

Thank you for your attention.

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