2025 MAGMA KOREA USER MEETING

고객사를 위한 최신 프로그램 및 글로벌 혜택

MAGMA Engineering Korea 황범규 부장

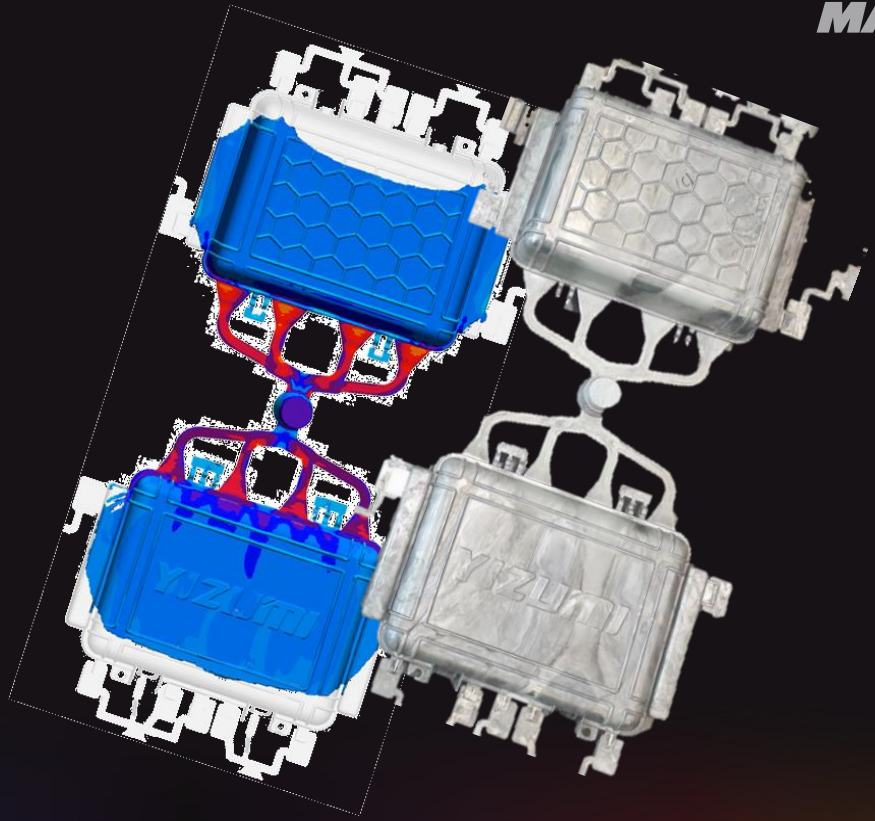
2025년 11월 11일 – 12일
코트야드 메리어트 서울보타닉파크

MAGMASOFT®
autonomous engineering

목차

MAGMA Semisolid

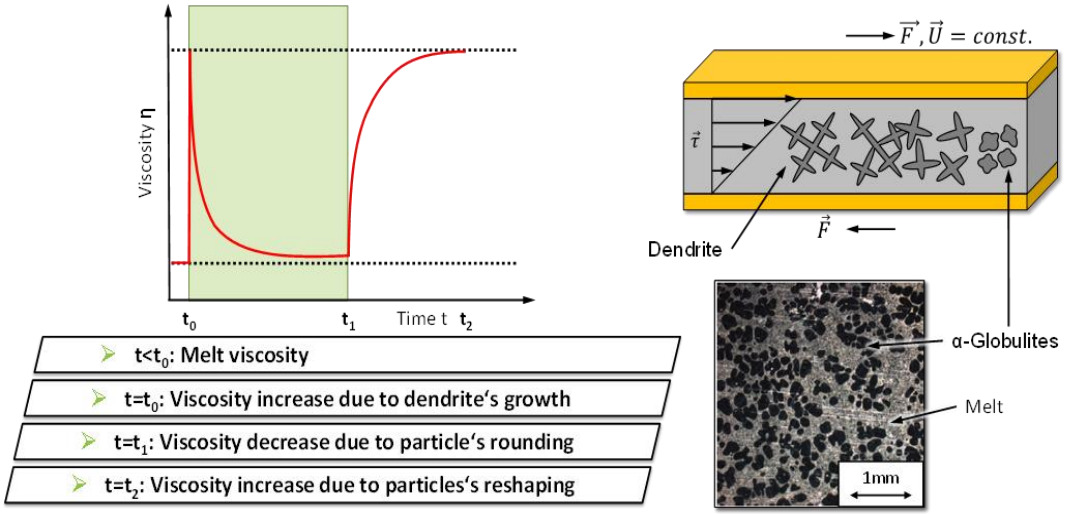
반응고 주조



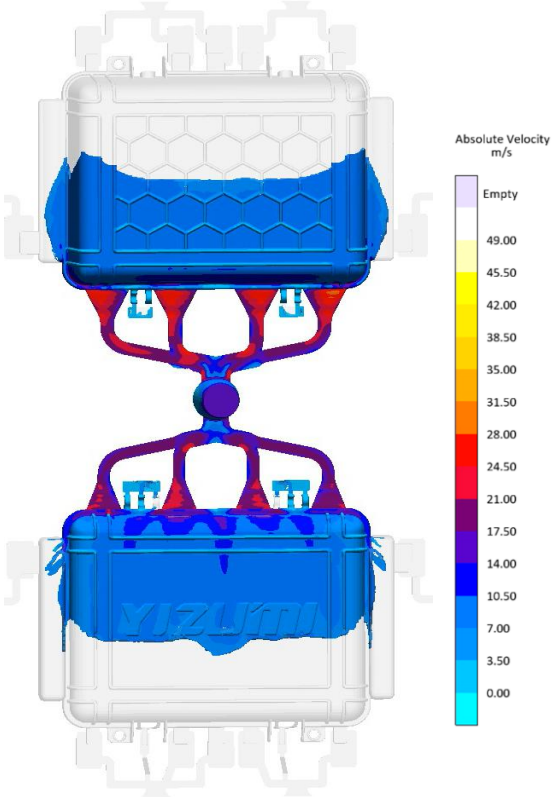
MAGMA Semisolid

Semi-solid(반응고)

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



시간 의존적 점도 모델

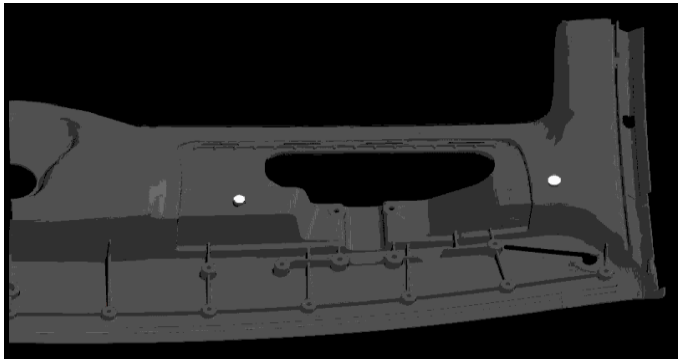


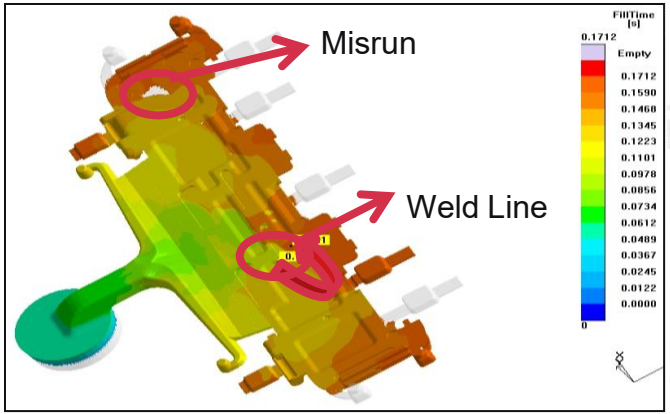
Velocity 결과

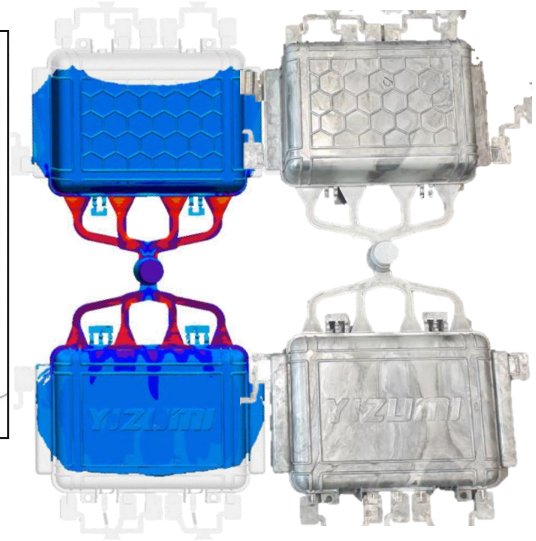
MAGMA Semisolid

Semi-solid(반응고)

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



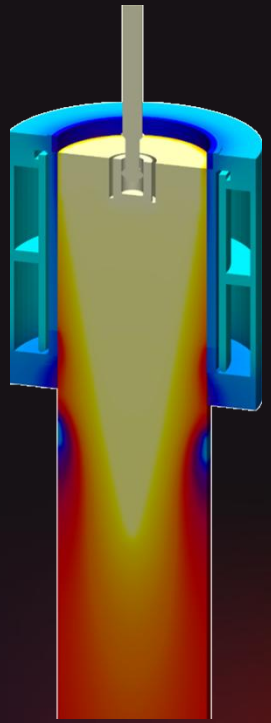




MAGMA v4.4 Thixo module → SIGMA v 5.5 Thixo module → MAGMA v6.1 Thixo module

MAGMA Continuous Casting

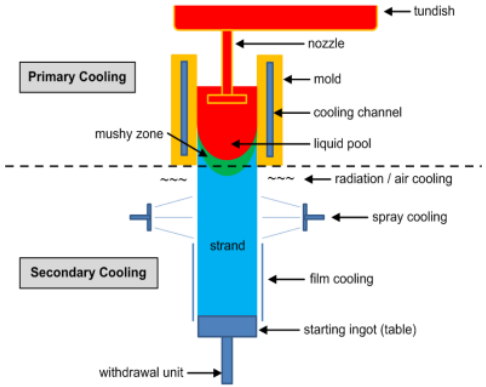
연속 주조

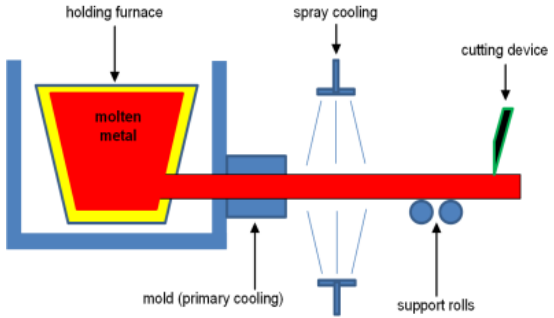


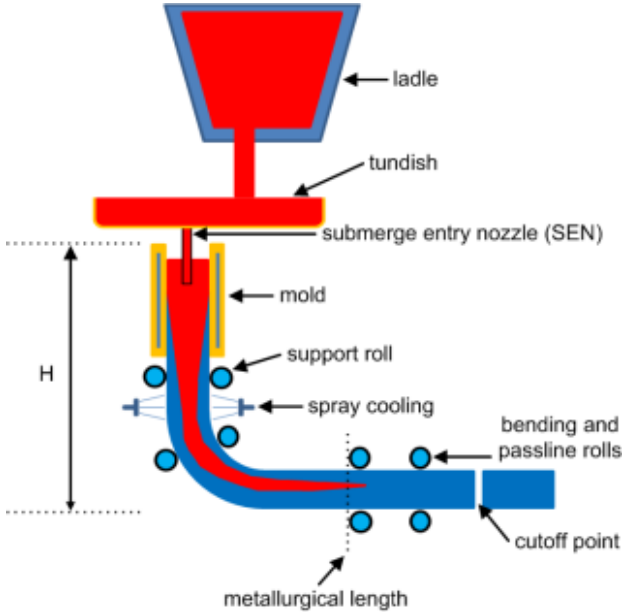
MAGMA Continuous Casting

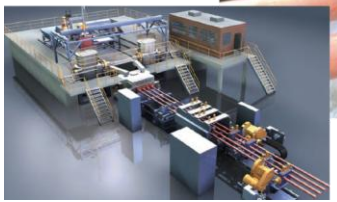
Continuous Casting(연속주조)

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





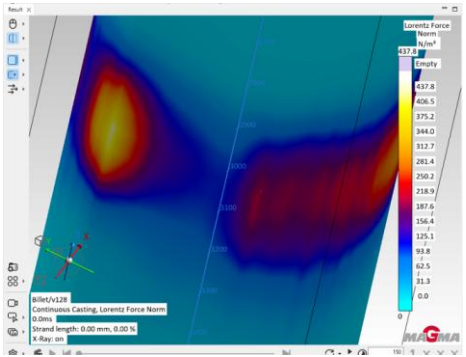


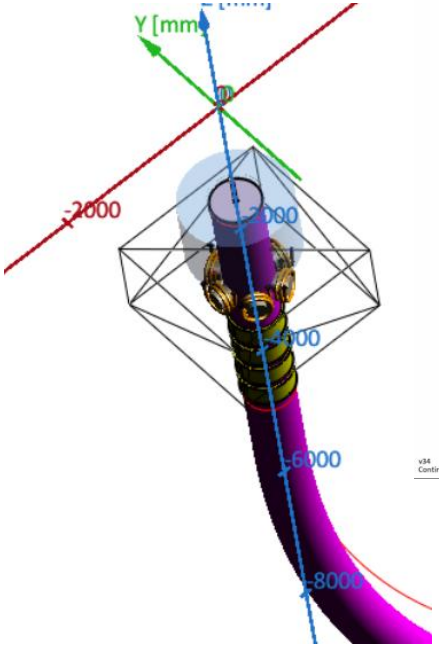


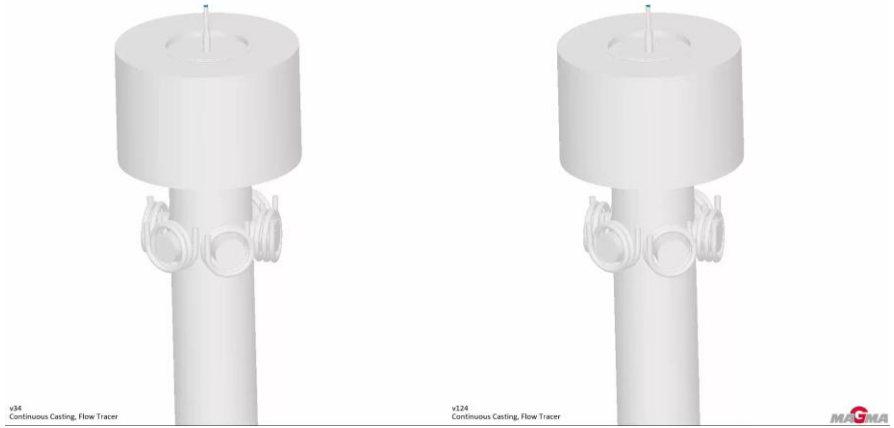
MAGMA Continuous Casting

Continuous Casting(연속주조)

- EMS (Electromagnetic stirring, 전자기 교반)



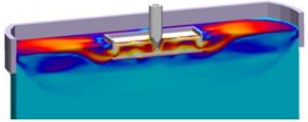




MAGMA

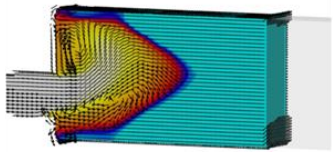
MAGMA Continuous Casting

Continuous Casting(연속주조)

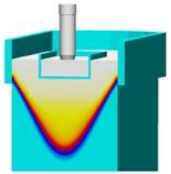


Start-up 중 flow 양상

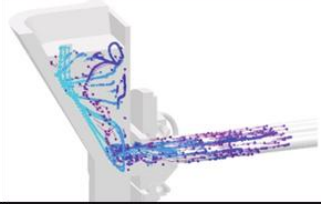
Launder에서의 flow 시각화



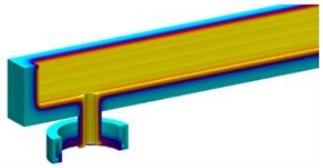
Start-up 중 속도 결과(Horizontal)



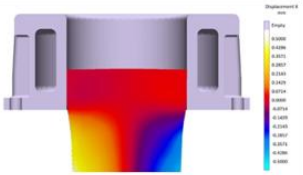
고상화 shell 두께



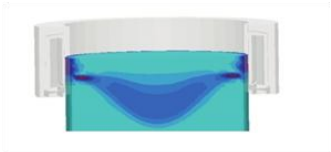
공정 중 flow 시각화(Horizontal)



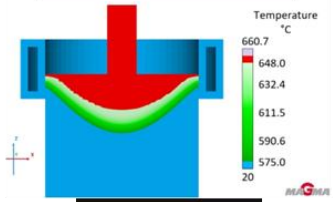
1차 냉각 중 온도 결과



수축 및 gap 형성 고려



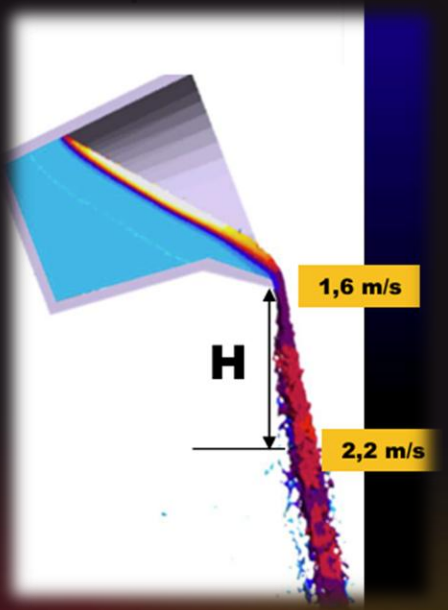
열간 균열 경향



공정 중 액상율

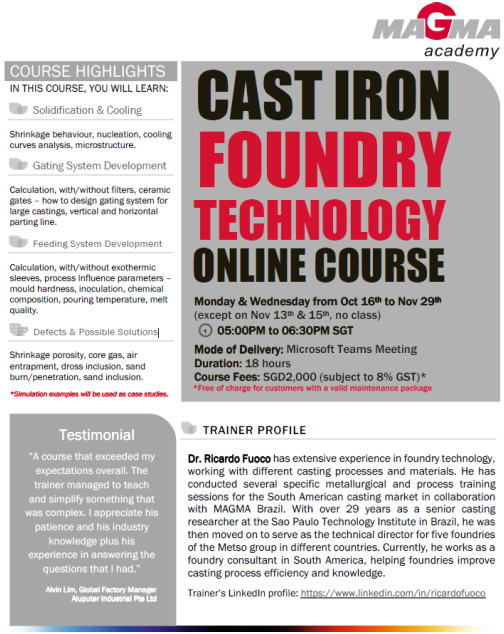
Global Expert Course

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



MAGMA

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 I Degasification I 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 I Metallurgy of carbon & low alloy steels I Types of steel I Melting and deoxidation I Solidification and segregation | Casting defects 등

MAGMA TIMES

글로벌 매거진

MAGMA TIMES

글로벌 매거진

Publication of MAGMA Gießereitechnologie GmbH, Volume 29

No. 2/2024

MAGMATIMES

Designing Permanent Mold Castings –

More Efficiently

Casting offers an ideal solution for efficiently manufacturing complex parts, often meeting all stability and weight requirements. The casting process generates minimal waste compared to machining and involves significantly lower tool costs than manufacturing components from carbon-fiber-reinforced plastic.

Traditional trial-and-error methods or energy-intensive sample production can result in long development times, making them unsuitable, particularly when time and cost-efficiency are of the essence. This is where casting process simulation provides a competitive advantage. An experienced and skilled user can reduce both development time and number of energy-intensive prototype castings, thus enabling foundries to meet even the tightest schedules and achieve cost-effective production.

Fig. 1: Manufacturer Rosenbauer's finished hybrid fire engine

Time constraints are a common challenge in foundries. In this example, manufacturer Rosenbauer aimed to develop and produce a hybrid-powered fire engine (Fig. 1) within two years. The vehicle needed to be lightweight, while maintaining structural integrity to meet both safety and hybrid vehicle standards. A lighter fire engine increases the battery driving range and improves agility, which is particularly beneficial in urban traffic.

The development team opted for utilizing a casting process to manufacture the door frames. They rejected milling due to its excessive material waste and slow processing speed. They also ruled out carbon-fiber-reinforced plastic because of prohibitive tooling and manufacturing costs.

Mettec faced the challenge of meeting tight manufacturing tolerances within a very narrow time frame. To address this and ensure cost-effectiveness, and given the limited production volume, the team decided to use a permanent mold casting process for the doors. They used a CAD model of the previous door design as the basis for the new manufacturing process.

Closing Old Doors – Adjusting Both Design and Risering

The original frame design featured an X-shaped element for stabilization, but initial simulations showed it was unsuitable for casting due to significant porosity (Fig. 2), which would jeopardize the door's structural integrity and would have increased the scrap rate during production.

Mettec had the opportunity to modify the design, provided that both stability and weight of the part were still ensured and, more importantly, that they would be able to adhere to the tight schedule.

The experts proposed an S-shaped design (Fig. 3) to create more efficient feeding paths in the part, leading to reduced porosity. This design change

- 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 Gießereitechnologie GmbH, Volume 30
No. 2/2025

MAGMATIMES

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, short stable processes and long tool lifes 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.

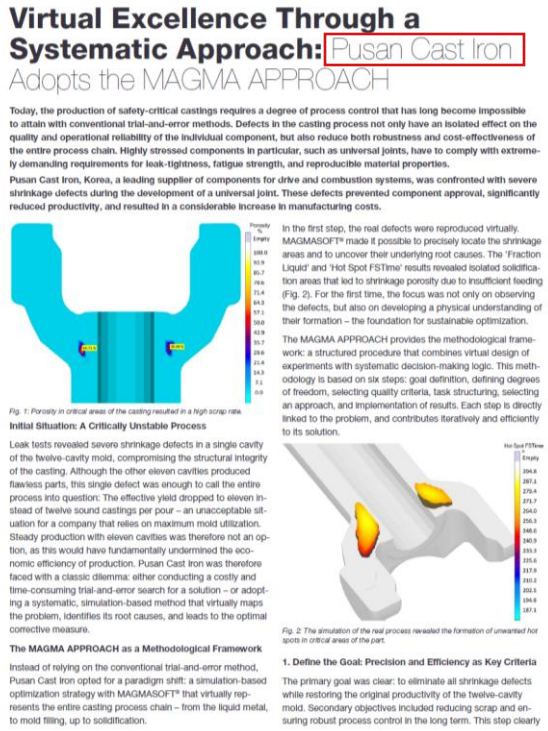
Virtual Design of Experiments: Quantifying Conflicting Goals

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.

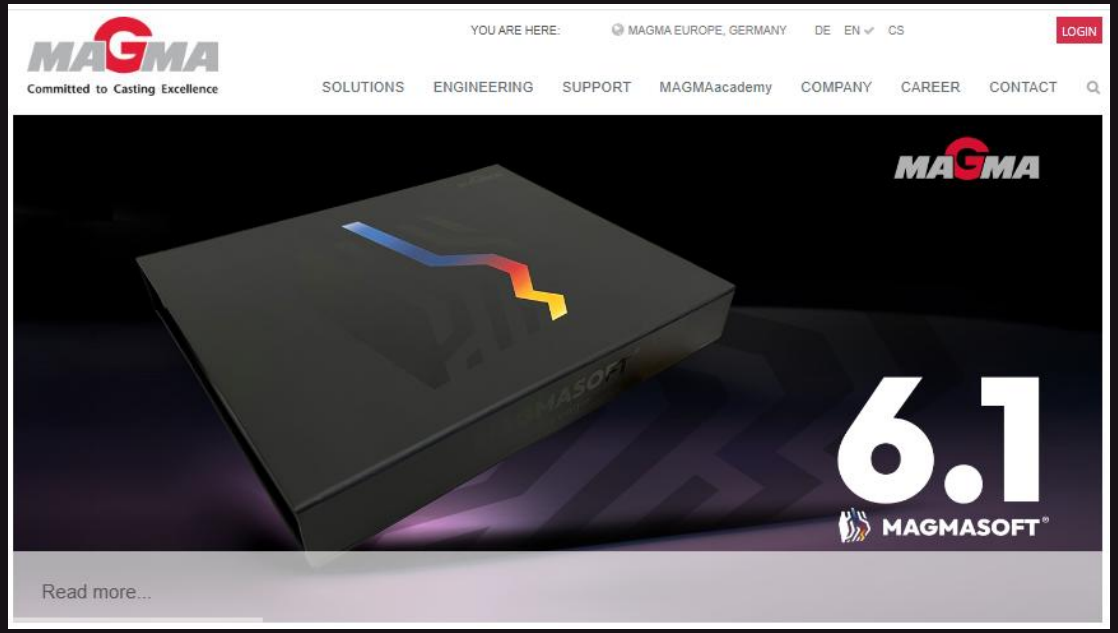
Fig. 2: The simulation of the real process revealed the formation of unwanted hot spots in critical areas of the part.

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

5

- 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

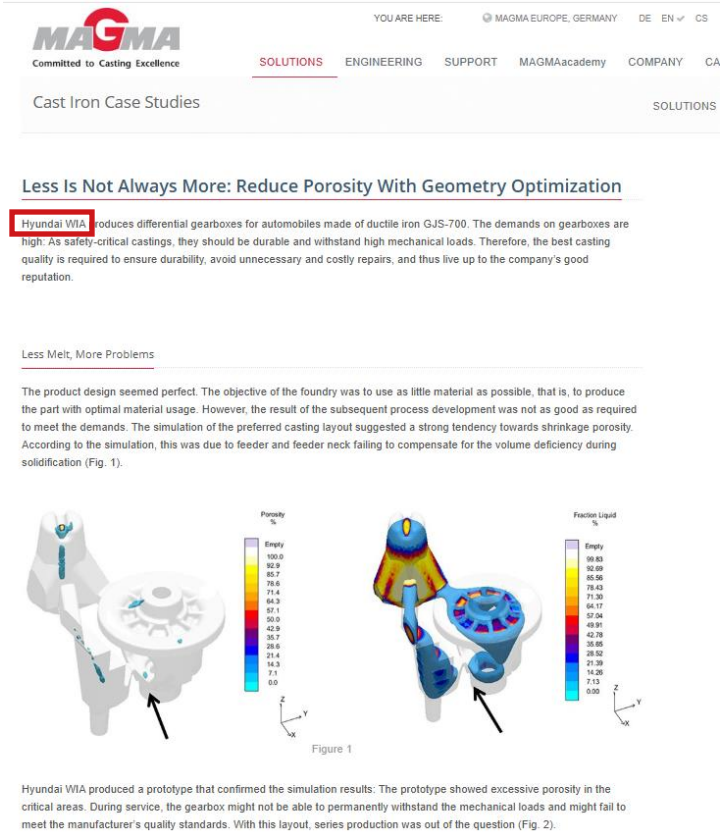


MAGMA Website

웹사이트

MAGMA Website

Case studies



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Cast Iron Case Studies

SOLUTIONS

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

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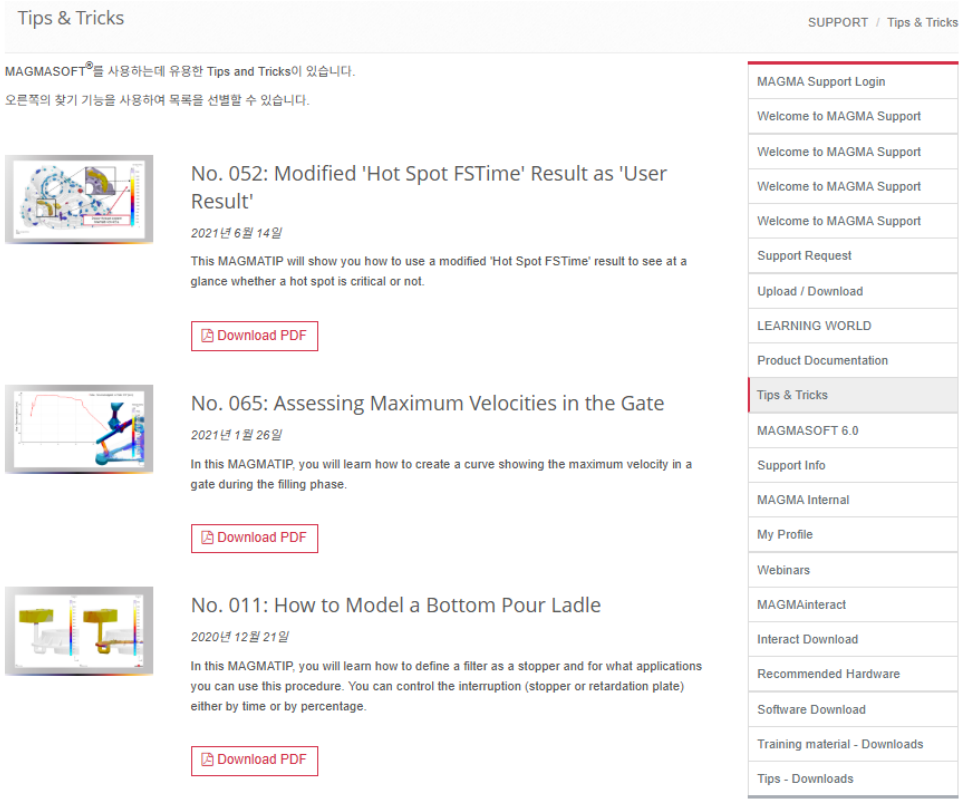
- Tips & Tricks : MAGMASOFT® 활용 꿀팁
- Webinar 및 세미나 자료 다시보기
- MAGMA 기본 교육 자료 다운로드
- MAGMA TIPs 자료 다운로드
- UGM 자료 다시보기
- MAGMAinteract® 다운로드 : 무료 뷰어
- MAGMASOFT® 매뉴얼 다운로드
- MAGMASOFT® 프로그램 다운로드



Learning World

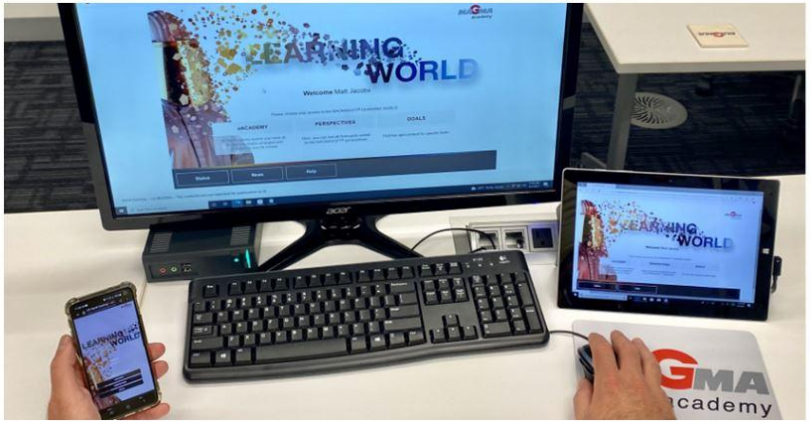
Learning World

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



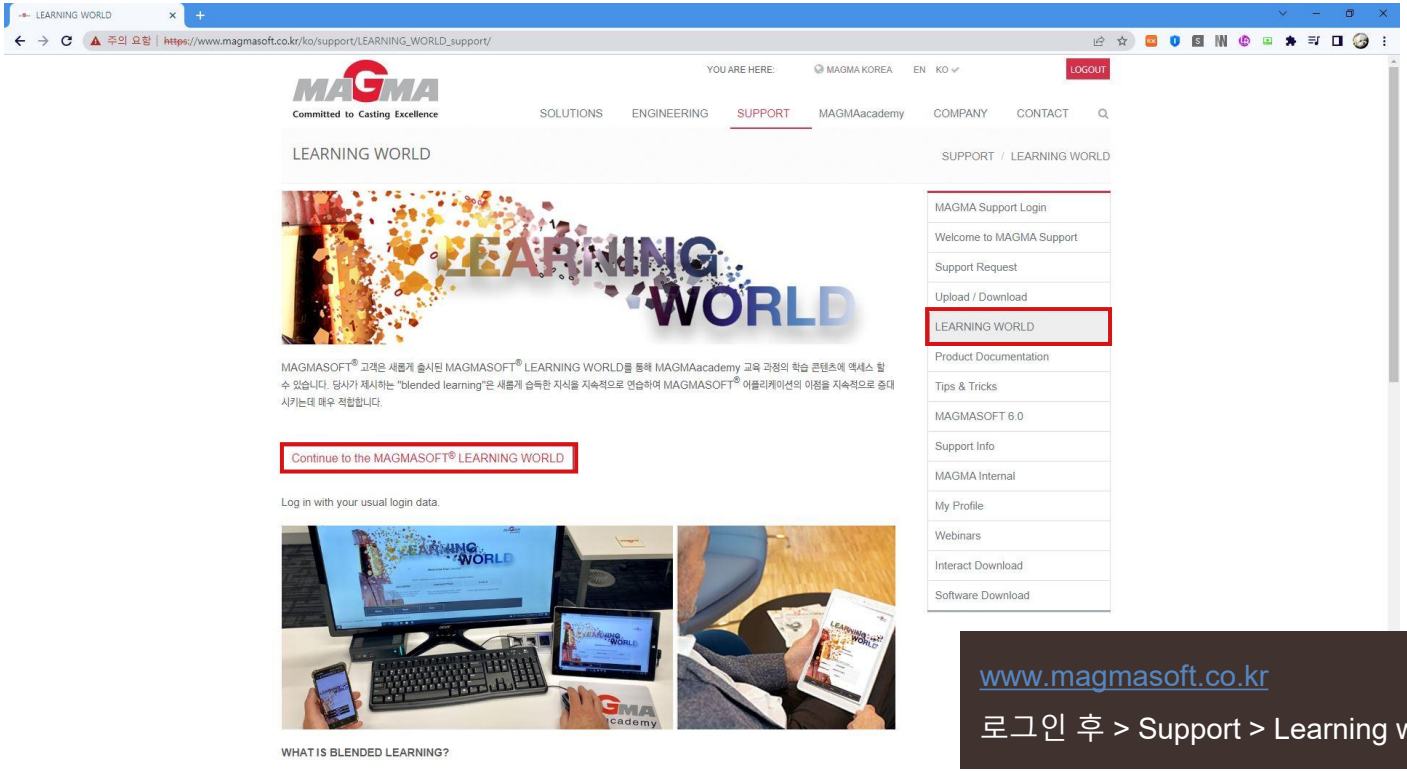
Learning World

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



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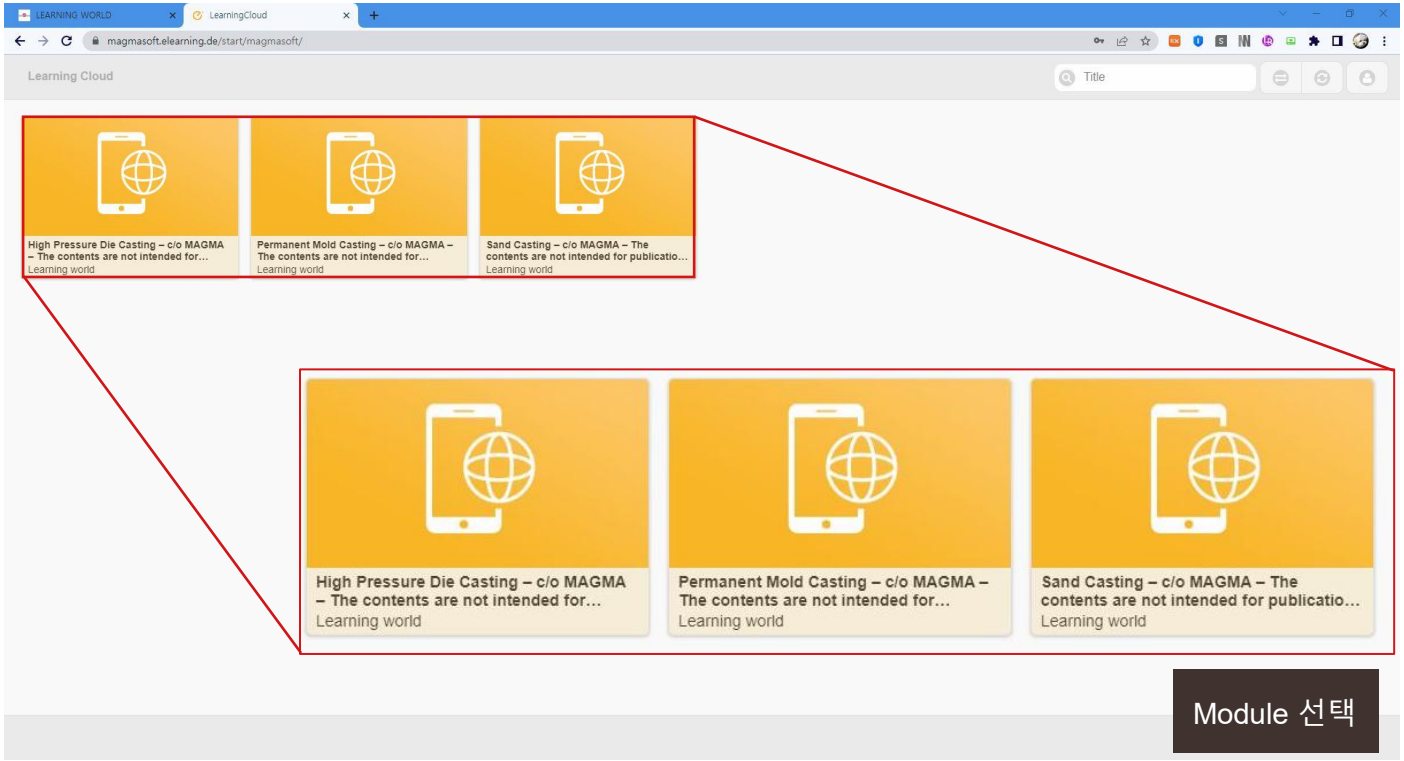
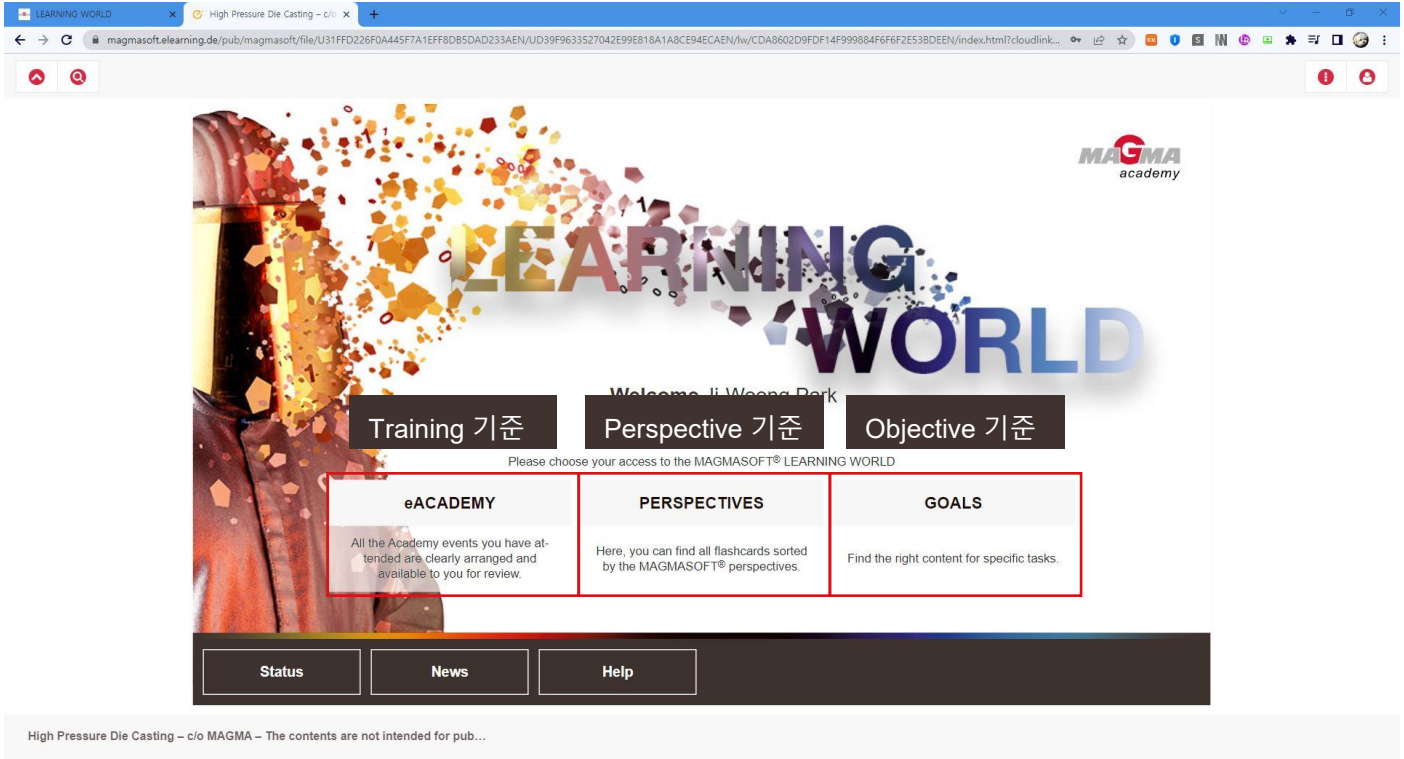
로그인 후 > Support > Learning world 클릭

Learning World

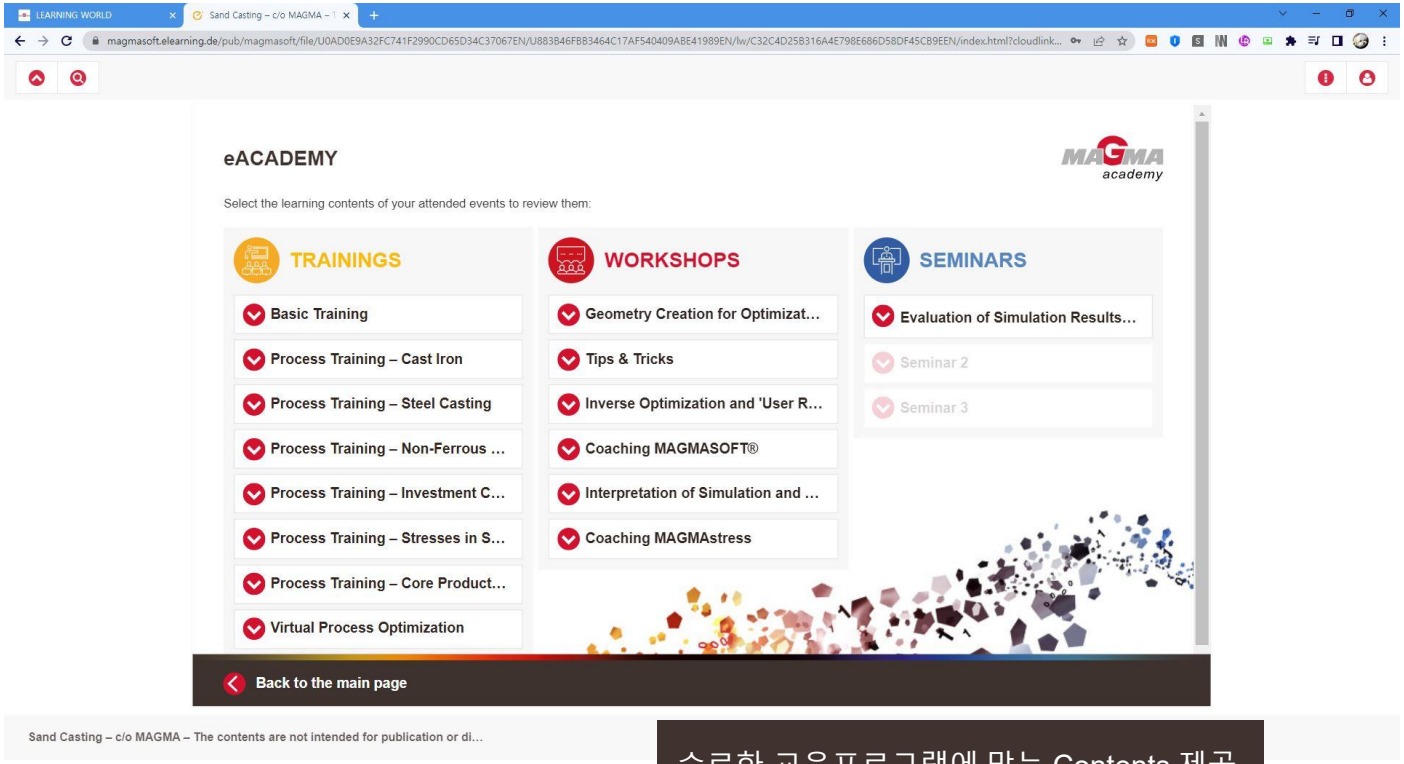


Learning World



Learning World

eAcademy



수료한 교육프로그램에 맞는 Contents 제공

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 Glück Nardi, MAGMA GmbH, Germany
- **Data-Driven Prediction Study of Elongation Dispersion in High-Pressure Cast Components**
  Jin-Kwan Kim, Hyundai Motor Company Namyang R&D Center, South Korea
- **Creative Solutions for an E-Mobility Housing Using Sand Cores in Low-Pressure Casting**
  Barış Çavunt & Deniz Göler, Döktaş A.Ş. Manisa, Türkiye

10:30 Coffee Break

11:00 **Plenary Presentation II**

- **MAGMASOFT® 6.1**
  Tristan Kotthoff, MAGMA GmbH, Germany
- **Developments in MAGMASOFT® – An Outlook**
  Jesper Thorborg, MAGMA GmbH, Germany

12:30 Lunch

14:00 **MAGMAworkshops**

Cast Iron

- **Application of MAGMASOFT® on Engine Components**
  Chen Xuming, 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 Nasipoglu, Trakya Döküm San. ve Tic. A.Ş. Head Office, Türkiye
- **Lightweight Efforts on Cast Iron Parts**
  Cem Aydin & Mahmut Mert Buldu, Döktaş Dökümcülük Ticaret ve Sanayi A.Ş. Orhangazi, Türkiye
- **MAGMA ECONOMICS**
  Mathias Bodenburg, MAGMA GmbH, Germany

Steel Casting

- **Overcoming Challenges of Steel Castings in Pınar Döküm with MAGMASOFT®**
  Gülşah Uslu, Pınar Dökum Sanayi ve Tic. A.Ş., Türkiye
- **Record-Breaking Casting Success Powered by MAGMA's Expertise**
  Canan Seçgen, Akdas 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® Rotacastor & Investment Casting**
  Emir Subasic, ACCESS e.V., Germany
- **Useful Tips for Realistic Simulation of Steel Investment Castings**
  Petr Kotas, MAGMA GmbH, Czech Republic
- **MAGMA ECONOMICS**
  Paul Fährmer, MAGMA GmbH, Germany

Die Casting (HPDC)

- **Using a Modified Neural Network with MAGMASOFT® Optimization Data to Select Optimum Conditions for HPDC Processes**
  Fredrik 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 Lufák, Top Alufit s.r.o., Czech Republic
- **How to Achieve the Best Compact Gating Design and Balanced Filling for Multi-Cavity HPDC?**
  Devrim Elfidirici, 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
  - 쇼룸 & 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	*Application of MAGMASOFT® on Engine Components*	Chen Xiuming	China
Fonderie Mario Mazzucconi S.p.A.	*Mechanical Properties Comparison Between Simulated and Measured Data on an AlSi7Mg03 LPDC Crossmember Through T6 Heat Treatment*	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	*Indirect Squeeze Casting Technology for the Automotive Industry*	Milan Luňák	Czech Republic
Trakya Dokum San. ve Tic. A.Ş. Head Office	*Continuous Improvement with Creative Solutions for Optimizing Casting Quality*	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

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

MAGMAacademy Seminar 2024 | 해외기술공유세미나

2024년 12월 5일, 대구기계부품연구원

MAGMAacademy Seminar 2024

개요

- 세미나 제목 :
  - MAGMAacademy Seminar 2024 | 해외기술공유세미나
- 취지
  - 국내 고객사에서 해외 사례에 대한 관심도 높음
  - 해외 주조해석 사례 공유를 통한 MAGMASOFT® 활용 방향성 협의
- 대상
  - 모든 고객
- 내용
  - I-UGM 유저 발표 내용 공유
  - 해외 적용사례에 대한 이해 및 고객사에 대한 적용 가능성 검토
  - 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** • MAGMA Economics : 주조 비용과 CO_2 배출량 예측 신기능 • 주입 온도 변화에 따른 주조 비용 절감 사례 • 금형 크랙 개선 및 주입 온도, 탄소 배출 감소를 통한 비용 절감 사례	정재민 차장
14:00 – 14:30	**Cast Iron & Steel** • MAGMASOFT®와 MAGMAlink를 활용한 주철 제품 경량화 사례 • Inverse optimization을 이용한 Sand mold 물성치 매칭 • 대형 주강품의 주조방안 변경을 통한 Hot tear 개선 사례	박지웅 과장
14:30 – 14:40	Coffee Break	
14:40 – 15:40	**HPDC** • GIGA Casting 해석을 위한 접근 방식 제안 • 멀티 캐비티를 위한 최상의 게이팅 설계와 균형 충진 달성 사례 • Plunger 구간별 최적화 사례	이동규 대리
15:40 – 15:50	Coffee Break	
15:50 – 17:00	**LPDC** • Sand core를 사용하는 전기차용 커넥터 하우징 해석 사례 • 열처리된 크로스멤버의 해석 데이터와 측정 데이터 간 기계적 특성 비교 사례 • LPDC/Wheel in MAGMASOFT® 6.1	정재민 차장
17:00 – 17:30	**MAGMASOFT® 6.1** • 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

EUROGUSS 2026

Hall 4, Booth 4-342

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

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

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

Thank you for your attention.

황범규 부장

MAGMA Engineering Korea

info@magmasoft.co.kr