

**FRECH Online-Training & Consulting**  
**By the end of September 2020**  
 by Frech Service

**Deadline extended**  
**Up to 30.09.2020**



**Deadline extended up to September 30<sup>th</sup>, 2020**

Your alternative when you have to stay in your foundry or office/home office, but you still want to educate and improve yourself.

Press the "online button" together with us!

**Operators  
Machine  
setters**

**Die designers  
Technologists**

**Everyone who  
wants to  
educate  
themselves**

**Diecasters  
learning  
online**

# FRECH Online-Training & Consulting

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	Overview & Terms Training Modules T1-T3 Consulting Modules C1 – C3		Training 3 hr web session	Consulting Analysis, docs, 2 hr web session
T1	<b>Temperature parameters</b> Understanding, adjusting & troubleshooting	Hot chamber	€450	
T2	<b>The 3 most important screen pages</b> Calculation, profile input, casting graphics	Hot chamber	€450	
T3	<b>The 3 most important screen pages</b> Calculation, profile input, casting graphics	Cold chamber	€450	
C1	<b>Component check</b> Your "problem cases"	Hot chamber Cold chamber		€900
C2	<b>Die check</b> Your "problem cases"	Hot chamber Cold chamber		€900
C3	<b>Simulation-based casting system check</b> Your "problem cases"	Hot chamber Cold chamber		€3,600

## FAQ & General information

### Who are the trainers and consultants?

Our experienced and familiar trainers/consultants: Martin Schlotterbeck, Frank Balbier, Ulrich Keller, Erich Kuhn, Marco Stiedl

### Required hardware/software:

Computer, laptop or tablet, online connection, microphone and headphones or speakers. FRECH will handle everything else.

**Target group:** The same target group as with standard seminars, depending on the topic.

**Certificate:** Provided to every participant

### Deadlines and contacts

Please direct inquiries and bookings to Ms. Sabine Gramm:

Telephone +49 7181 702 249 Email: [training@frech.com](mailto:training@frech.com) or [gramm.sabine@frech.com](mailto:gramm.sabine@frech.com)

We will make deadline proposals and coordinate them with you.

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	Outflow	Preparations
1	<b>Reservation</b>	Choose an online training and consulting module and contact us to coordinate date and participants
2	<b>After reserving</b>	Provide all relevant email addresses.
3	<b>30 minutes before the session</b>	<ul style="list-style-type: none"> <li>- We will send you a link to start the training.</li> <li>- Laptop / desktop PC: No preparation required</li> <li>- Tablets / smart phones: Download the "Zoom" app</li> </ul>
4	<b>Shortly before the session</b>	Connection check from both sides for video, sound and camera. Please use the intended spaces on your end.
5	<b>Web session</b>	Online module carried out incl. subsequent sending of documentation and participation certificates
6	<b>After the session</b>	Feedback - we always want to improve, so we look forward to your feedback on your reservation! With pleasure also in retrospect , mail to <a href="mailto:training@frech.com">training@frech.com</a>



Further information

<https://zoom.us/>

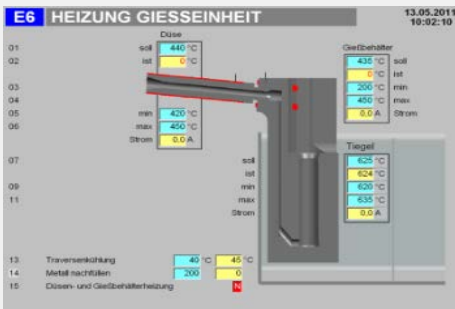
On the "ZOOM" homepage, to "Support," to "Help Center" > "Getting Started" > "Mobile"

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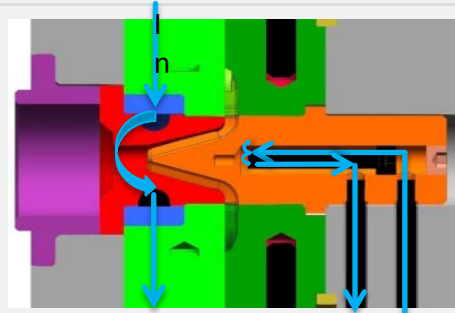
**T1 | Temperature parameters – hot chamber**

**Understanding, adjusting & troubleshooting**



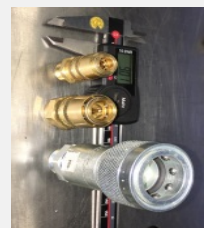
**Goals**

Diecasting is a temperature-dependent process. After this online training, your employees will be able to understand and adjust the complex temperature balance in the casting process and identify temperature-related problems.



**Contents**

- Quality-related temperature parameters in hot chamber diecasting, their effects and systematic procedures for optimization
- Cold flow and blisters due to incorrect temperatures
- Influences of temperature parameters on cycle time
- Freezing nozzle tips: effect and resolution
- Shot bushes and distributor cooling
- Pre-heating, temperature regulation, cooling of die
- Temperature control with water or oil
- Correct connections with pipes, hoses and couplings
- Connecting correctly and inspecting



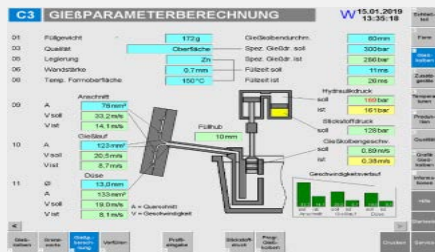
**Target group**

Operators, machine setters, foundry directors

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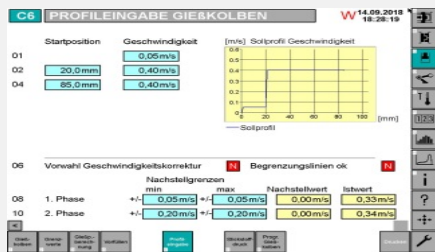
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**T2 | The 3 most important screen pages – hot chamber**  
 Casting parameter calculation, profile input, casting graphic



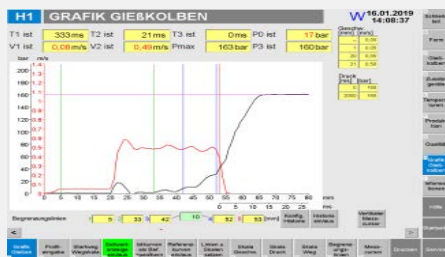
**Goals**

The goal of this online training is to enable your employees to master these three fundamentally important screen pages for process adjustment. At the end, two exercises will be carried out together, and two exercises will be provided for a self-test.



**Contents**

- Together with the casting graphic, the casting parameter calculation is required for correct profile input.
- 1st phase: Adjustment
- 2nd phase: Determining start point & velocity
- Identifying braking point (with ShotStop / RC)
- HC: Monitoring of nozzle tip for freezing zinc (P0)
- CC: Adjusting pressure
- Positioning the limit lines for quality control
- Monitoring a constant casting process
- Reading, understanding and interpreting the casting graphic



**Target group**

Operators, machine setters

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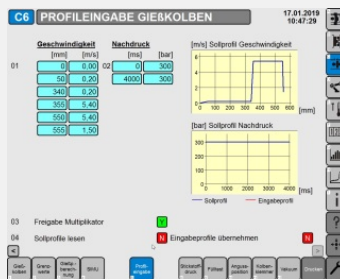
**Deadline extended**  
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**T3 | The 3 most important screen pages – cold chamber**  
**Casting parameter calculation, profile input, casting graphic**



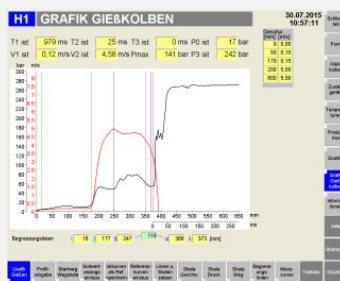
**Goals**

The goal of this online training is to enable your employees to master these three fundamentally important screen pages for process adjustment. At the end, two exercises will be carried out together, and two exercises will be provided for a self-test.



**Contents**

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- 1st phase: Adjustment
- 2nd phase: Determining start point & velocity
- Identifying braking point
- Adjusting pressure
- Positioning the limit lines for quality control
- Monitoring a constant casting process
- Reading, understanding and interpreting the casting graphic



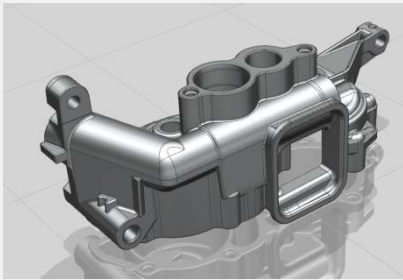
**Target group**

Operators, machine setters, foundry directors

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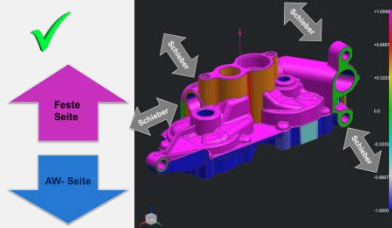
Deadline extended  
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**C1 | Component check**  
 Your "problem cases"



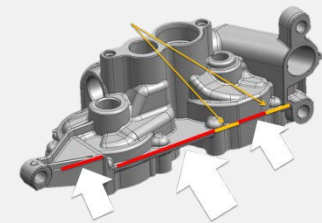
**Goals**

We offer you a focused component check. The goal of the consulting is to develop possibilities for quality improvement through modifications to the component.



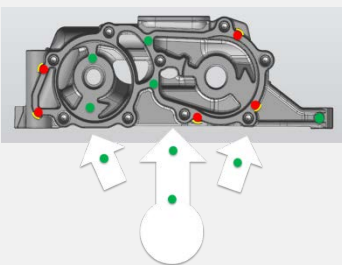
**Contents**

- Analysis of part properties and requirements
- Examination of ideal demoldability
- Shot possibilities – identification and recommendation
- Determine ventilation positioning
- Parts location in the die
- Locking force calculation
- Wall thicknesses
- Recommendations for die design
- Results documentation for further use internally or with business partners



**Note:**

- The creation of a 3D model of the unmachined part and runner is **not** included in this module.



**Target group**

Developers, purchasers, die designers, technologists, quality assurance employees

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**C2 | Die check**  
 Your "problem cases"



**Goals**

We offer you a focused die check. The goal of the consulting is to develop possibilities for quality improvement through modifications to existing dies.

**Contents**

- Mathematical calculations
- Analysis of sections of the nozzle, the runner, the branches, gates and ventilations
- Finding runner & gate optimizations
- Finding and modifying ventilation options
- Inspecting temperature control channel configuration
- Developing diagrams and proposals for improvements
- Results documentation for further use internally or with business partners

**FRECH**  
**Zuhaltekraftberechnung Warmkammer**

Teilbezeichnung: \_\_\_\_\_

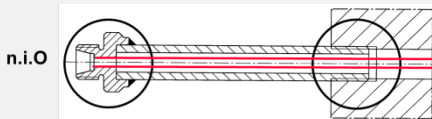
Sprengfläche der Teile \_\_\_\_\_ cm<sup>2</sup>  
 Sprengfläche der Schieber x tan α (25-35%) \_\_\_\_\_ cm<sup>2</sup>  
 Sprengfläche der Überläufe \_\_\_\_\_ cm<sup>2</sup>  
 Sprengfläche des Gießlaufs \_\_\_\_\_ cm<sup>2</sup>  
 Sprengfläche des Verteilerkegels \_\_\_\_\_ cm<sup>2</sup>  
**Gesamtsprengfläche A<sub>sp</sub>** \_\_\_\_\_ cm<sup>2</sup>

Sprengkraft = Sprengfläche x spez. Gießdruck  
 $F_{sp} = A_{sp} \times \rho (1bar = 10 \text{ N/cm}^2)$

$F_{sp} = \frac{\text{cm}^2 \times 10 \text{ N/Bar}}{1000 \text{ cm}^2} = \text{ kN}$

Zuhaltekraft = Sprengkraft x Sicherheitsfaktor  
 $F_{zu} = F_{sp} \times \sqrt{1,3-1,6}$   
 $F_{zu} = \text{ kN} \times \text{ kN} = \text{ kN}$

Ausgewählte Maschinengröße: \_\_\_\_\_



**Alternative:**

- This online consulting module can also be used for support in designing new dies.

**Note:**

- The revising of design data (2D/3D) is **not** included in this module.

**Target group**

Die designers, technologists, quality assurance employees



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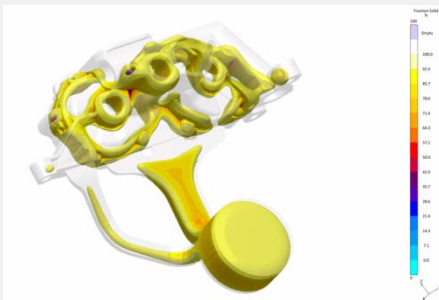
**C3 | Simulation-based casting system check**

Your "problem cases"



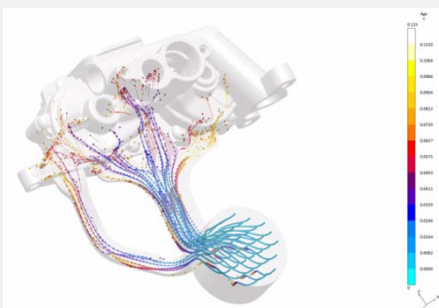
**Goals**

We offer you simulation-supported analysis and subsequently derived optimization recommendations for your component/casting system combination.



**Contents**

- Data preparation of the 3D model for runner and gate
- Performance of flow and solidification simulation
- Videos in avi (temperature, solidification, velocity, melting pressure, air inclusions)
- Documentation of analysis results incl. comments on simulation and recommendations for further procedures.



**Note:**

- The creation of the 3D model of the unmachined part and runner is **not** included in this offer.

**Target group**

Developers, purchasers, die designers, technologists, quality assurance employees

An orange rubber stamp with a cylindrical top and a rectangular base. The top of the stamp has the word "FRECH" and "service" written on it. A red stamp is overlaid on the bottom left of the orange stamp, containing the text "Deadline extended Up to 30.09.2020".

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## **Copyright**

Unfortunately, this copyright must be emphasized time and again.

These online trainings contain a volume of information which is personally entrusted to you.

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Third parties -- that is, persons who have not purchased a FRECH machine and/or have not attended a FRECH seminar -- may not be issued these training documents.

Illegal use by the recipient can lead to criminal prosecution.

We ask for your compliance!

Thank you very much.