

INSIDER

We welcome all our new employees

Castool - Canada

Yahya Mahomoodkhani
Process Simulation Engineer

Edward Howell
General Labour Manufacturing

Mike House
Shipping & Receiving Clerk

Ben Quibell
Cleaner

Keone Kirwan
Inside Sales

John Blodgett
Manual Lathe Operator

Siju Thadathil Varkey
Panel Builder

Curtis Potter
General Labour Manufacturing

Vijayasri Thirunavukkarasu
Boring Mill Operator

Merih Marzari
Sales Coordinator EMEA

Castool 180 - Thailand

Nawaphon Khongsin
Manual Lathe Operator

Jirasak Seehabutto
CNC Lathe Operator

Pannapong Noijoi
Manual Lathe Operator



CASTOOL will have manufacturing facilities on 3 continents by 2021:

Castool Tooling Systems, Castool 180 Co. Ltd. and Castool 90 SARL

We will manufacture containers up to 35 tons, shot sleeves and most tooling close to the major markets in the world. This will compliment our existing sales and technical support personnel, who are actively working in most countries where extrusion and die casting is being done.

OCCUPATIONAL HEALTH AND SAFETY

During the months of July and August, Castool had 4 medical accidents with zero so far in September. This was an increase from the previous months of May and June, as our target was achieved with zero medicals.

Our Joint Health and Safety committee have discussed all incidents regarding over exertion of physical lifting and ergonomics to improve workplace hazards to reduce any risks of worker injury.

During the month of September, Castool Supervisors and Lead Hands are completing Health and Safety E-Learn Training certificates to improve knowledge of Ontario OSHA regulations while benefiting all department employees. Continued awareness, improvements and striving for results from a collective effort will make a safer workplace for all Castool employees.



Jim Birnie
Health and Safety Coordinator

CAD DEPARTMENT

GREAT PRODUCTS START WITH GREAT DESIGN OUR DESIGN TEAM



STEVE JOHNSON
Senior DESIGN

Steve has been with Castool for 19 years. He joined Castool as a co-op student in high school, then returned as a summer student while finishing his Bachelor of Engineering degree at Ryerson. Steve became a Professional Engineer while working at Castool.

He has 2 children ages 2 and 5, and enjoys backcountry camping, baseball, football and golf.



ROB VAN DER GULIK

Rob joined Castool in 2012. He previously worked as a cabinet maker for 5 years and as a designer / project manager on shipyard for luxury yachts in the Netherlands and New Zealand for 16 years.

He has 2 teenage kids and 3 step kids in their 20's.

Rob enjoys a good craft beer, woodworking, sailing, travel and camping in the Caribbean.



CARLO VIVONA

Carl graduated from George Brown College with diplomas in Tool & Die Making and Mechanical Design.

Before joining Castool in 2011, he worked in several tooling shops as a designer and toolmaking apprentice.

Carlo is sharing his love of camping, baseball and bike riding with his 3 year old son.

He can be found watching Formula one racing on Sunday mornings.



YAHYA RASHWAN

Yahya has spent most of life in the motorcycle industry as a parts and apparel specialist.

In past few years, he was interested in graphic design and started to learn 3D CAD at home after work, with a goal to become an inventor and bring his ideas to reality.

He has a life long passion for motorcycles, and this is how he met Paul Robbins. He joined Castool in 2019.



CORY BREAR

Cory joined Castool as a coop student in May 2019 while finishing his fourth year in the Bachelor of Mechanical Engineering program at the University of Guelph.

He is fascinated with the manufacturing processes and is eager to develop new skills and further his understanding on them.

Cory is a part of a family of four, and enjoys spending time with them.

He likes water skiing, snowboarding and playing frisbee with friends on his free time. He plans to return to Castool next spring.

HERE WE GROW!!!



Uxbridge, Canada

The **Castool expansion** is on schedule. Machinery will start to be installed late October, with completion end of November.

The plan below outlines equipment and office/storage locations.

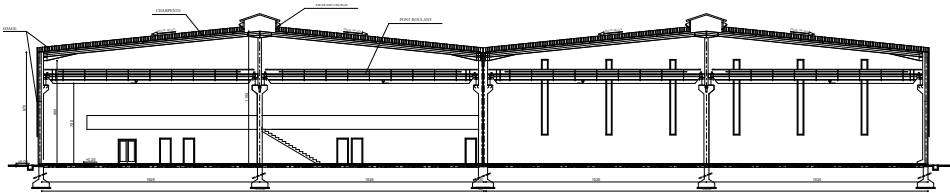
Thanks everyone for their patience.

The extra space is necessary and should provide for the next 10 years of growth.

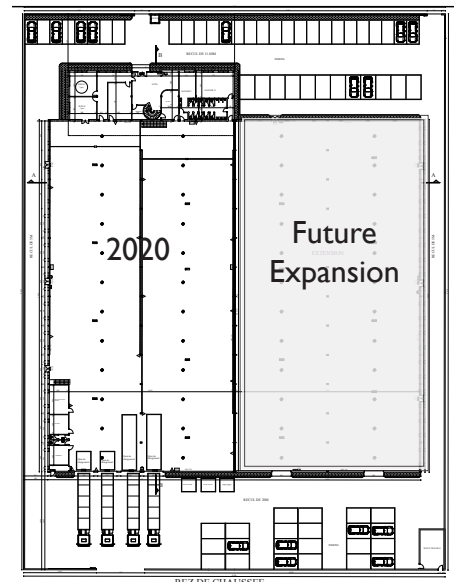


NEW EXPANSION

The incorporation of **Castool 90 SARL** is taking longer than expected, but plans are still progressing. We hope to finalize the purchase of land by early November, start construction early 2020, and open for business early 2021.



COUPE A----A



Kenitra, Morocco



SOFTWARE AND CURRENT SIMULATION PROJECT

Altair® HyperWorks® is the most comprehensive, open architecture CAE simulation platform in the industry.

Multiphysics Analysis & Optimization

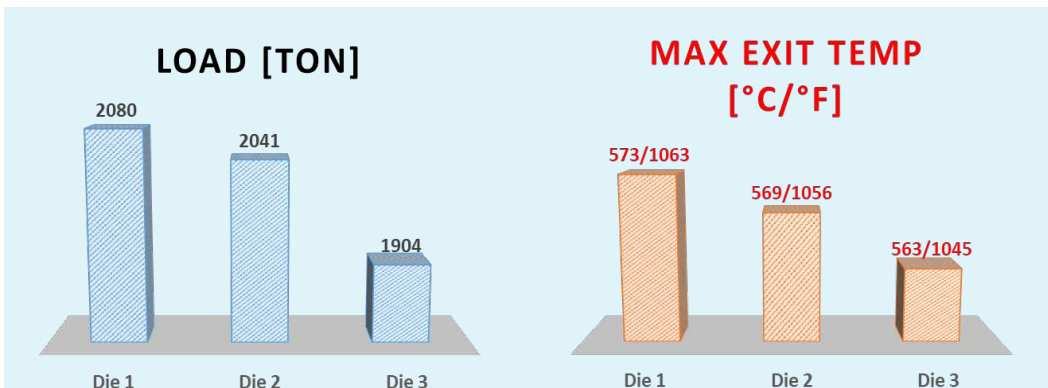
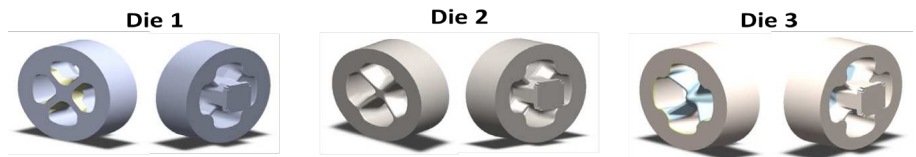
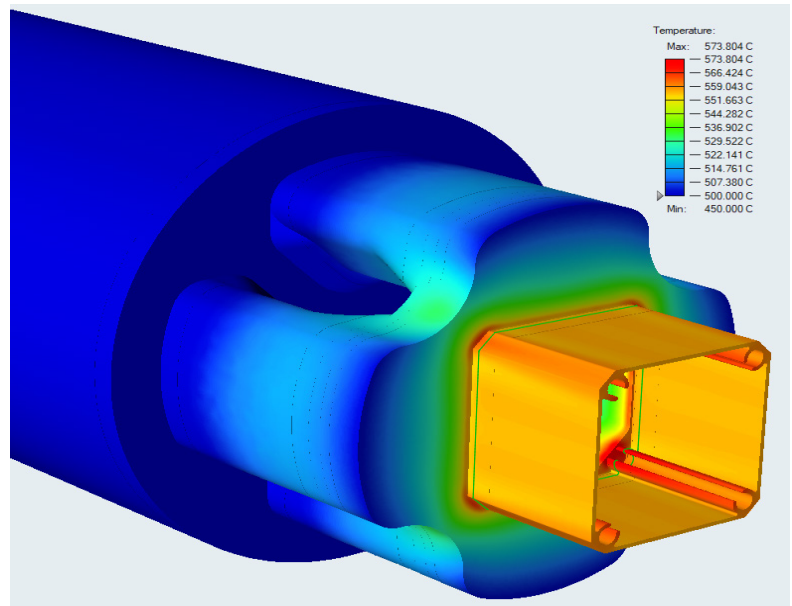
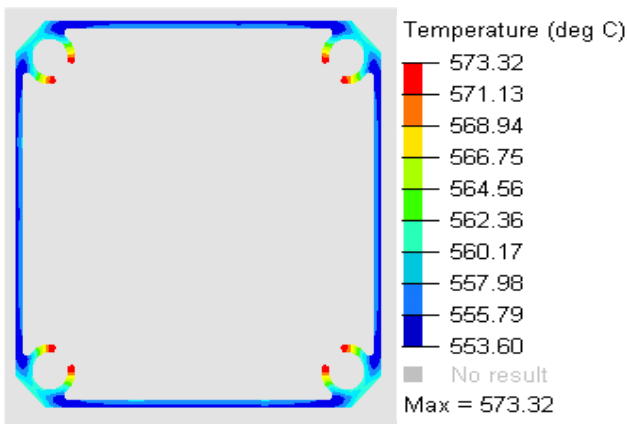
Altair	Stamping HyperForm	Extrusion HyperXtrude	Casting Click2Cast	Injection Molding Design Profit	Forging Design Profit	Welding Design Profit	3D-Printing Inspire	Mapping HCRM
Partner	Design Profit	Design Profit	NovaFlow & Solid Design Profit	Moldex3D Design Profit	AFDEX Design Profit	Virfac Design Profit	3-maticSTL Design Profit	CONVERSE

OptiStruct, HyperStudy

We have HyperWorks software package from Altair, including HyperExtruder and InspireCast making us capable to do complex simulations of manufacturing processes such as Extrusion and Die Cast processes. It is equipped with different solvers that are capable of multiphysics analysis of engineering problems such as: structural, crash, thermal, fluid dynamics and electro-magnetics.

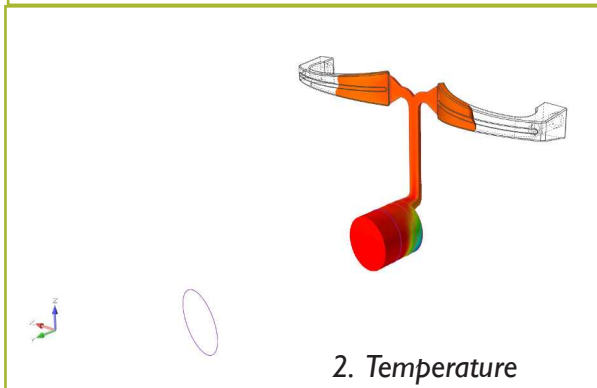
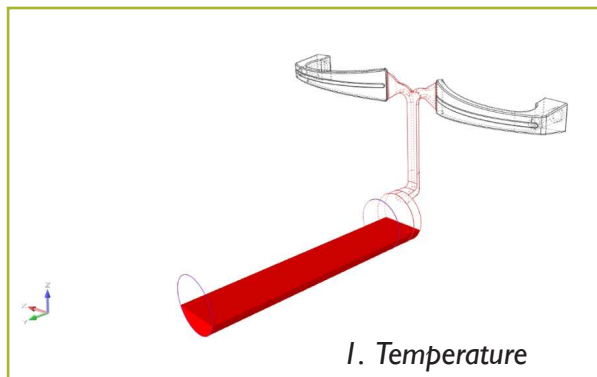
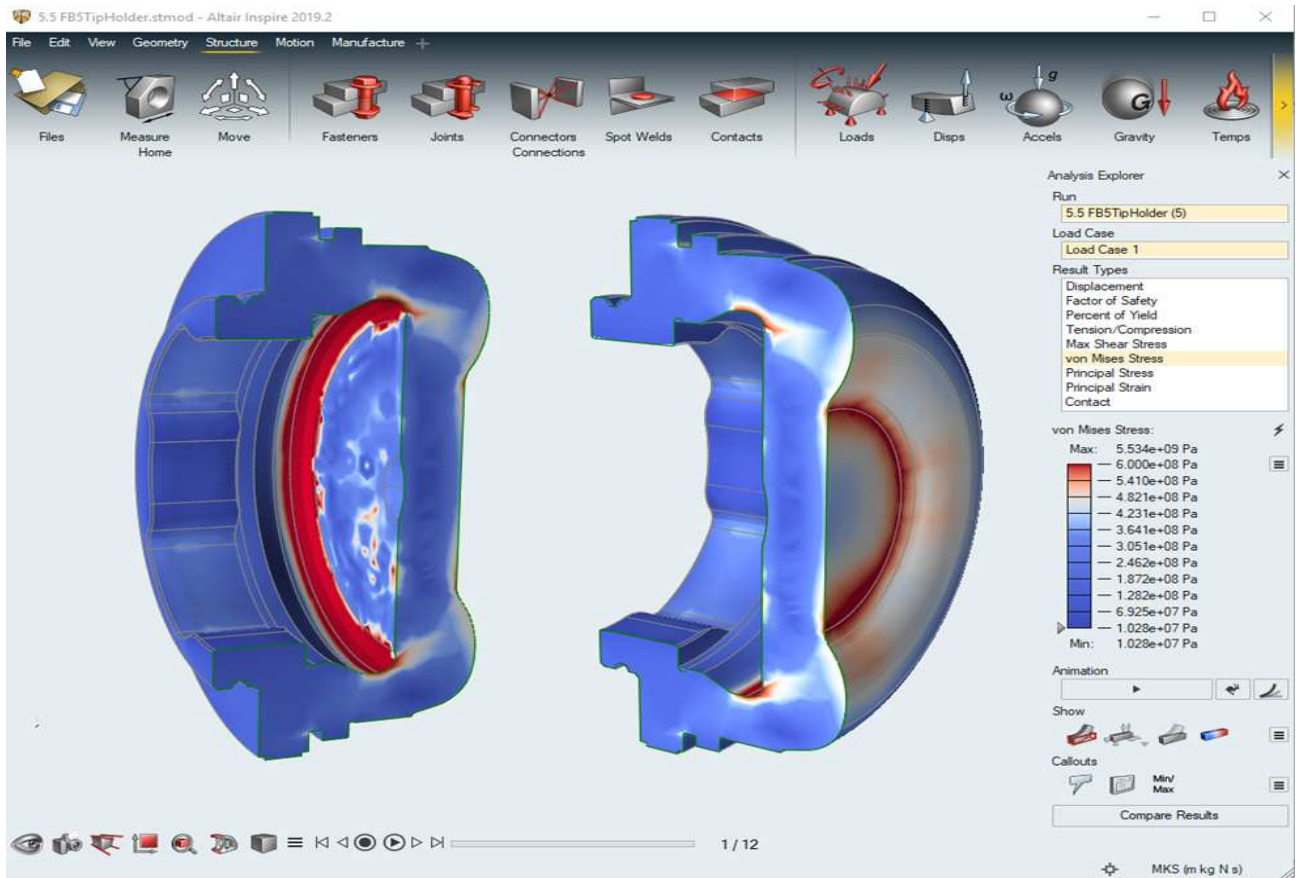
Here are some of current projects that are being done at **Castool**

1. The effect of extrusion die design on loads and exit temperature :



SOFTWARE AND CURRENT SIMULATION PROJECT

2. Die Cast : Stress distribution in ConDuct plunger tip



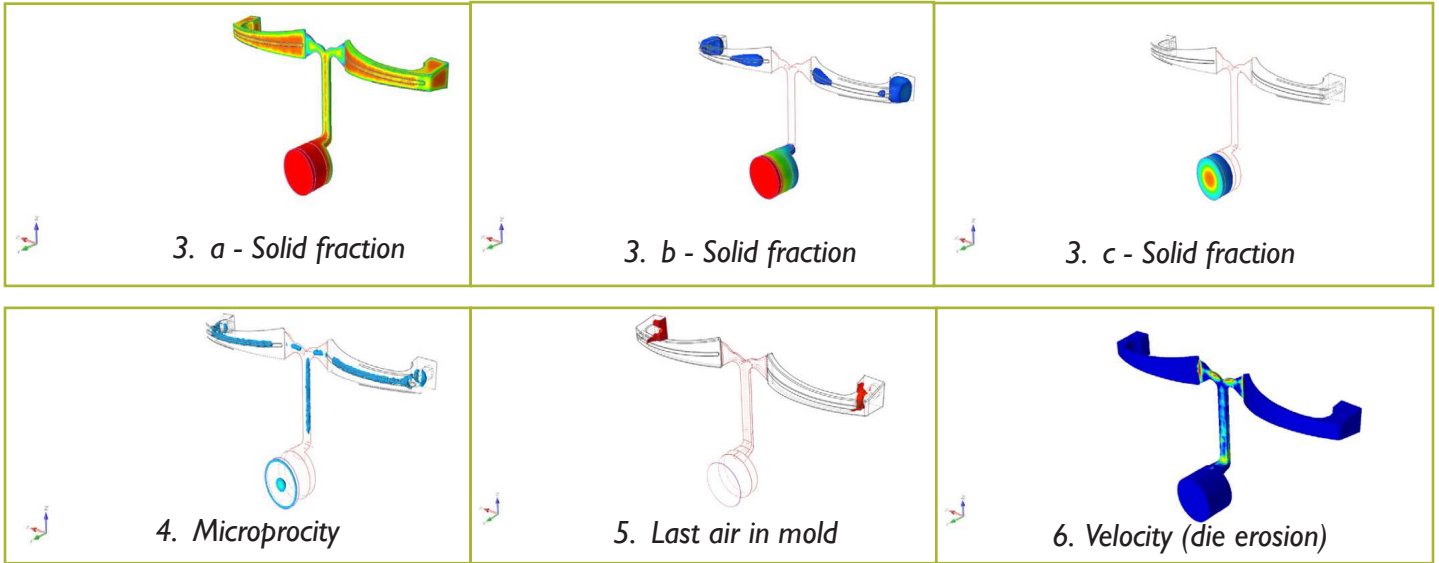
THERE IS MUCH MORE THAT CAN BE DONE FOR OUR CUSTOMERS

Die Cast filling and solidification analysis:

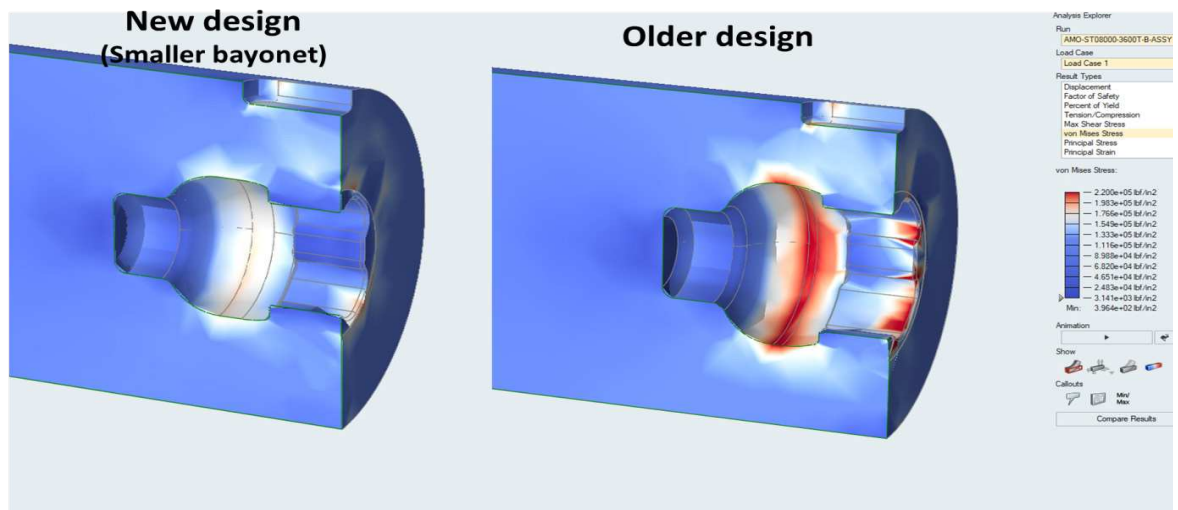
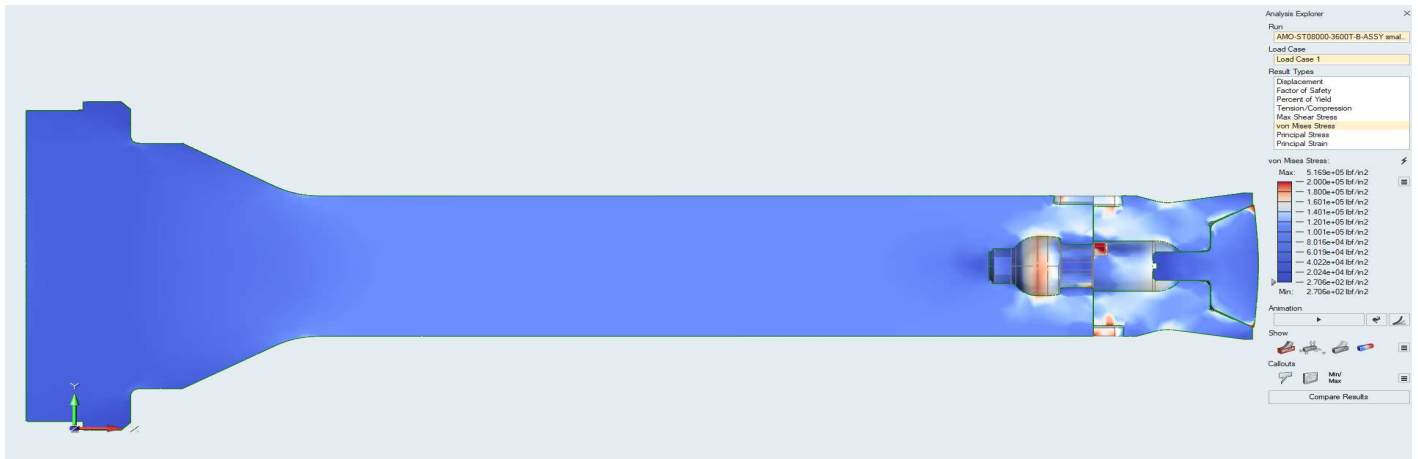
1. Initial state
2. Temperature during filling
3. Solidification step (temperature)
4. Mucroporosity prediction
5. Last air (for ventilation)
6. Velocity at die surface (die erosion)

continue>>>

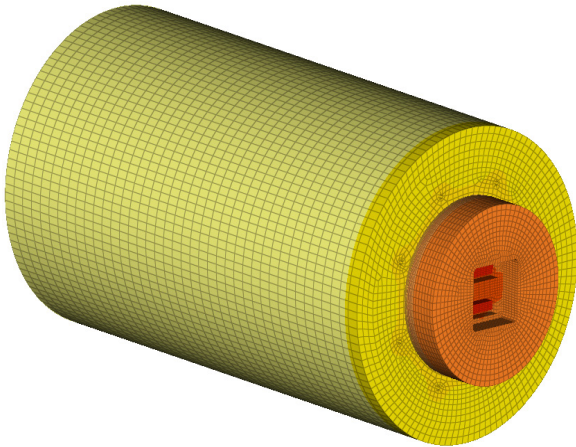
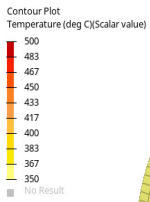
SOFTWARE AND CURRENT SIMULATION PROJECT



Stress in dummy block and stem



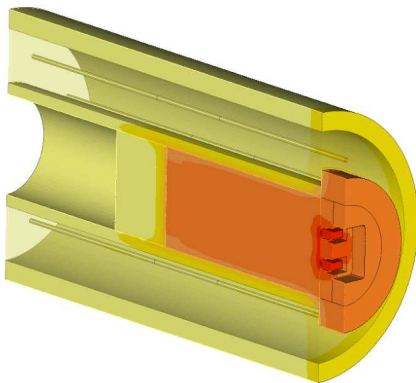
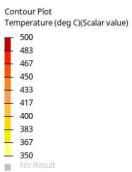
SOFTWARE AND CURRENT SIMULATION PROJECT



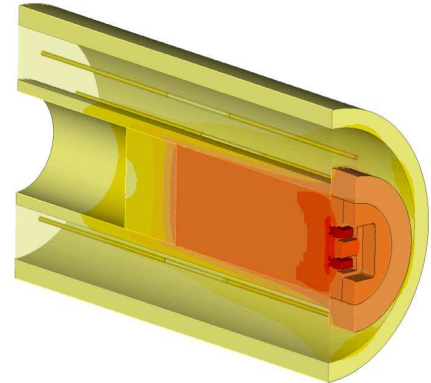
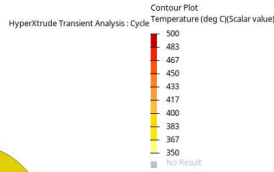
HyperXtrude Transient Analysis: **Here are some snap shots**
from extrusion container
simulation with
heating elements in sub-liner.

1: Heating Elements
HyperXtrude Transient Analysis: Cycle1:
Time=56 sec, Step 26 of 42 : Frame 27

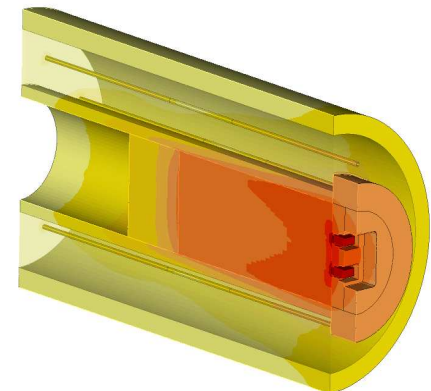
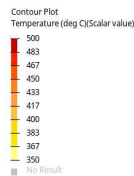
Full 3D image of the last step of 5th billet.



1: Heating Elements
HyperXtrude Transient Analysis: **Cycle1**:
Time=56 sec, Step 25 of 42 : Frame 26



1: Heating Elements
HyperXtrude Transient Analysis: **Cycle3**:
Time=302 sec, Step 25 of 42 : Frame 112

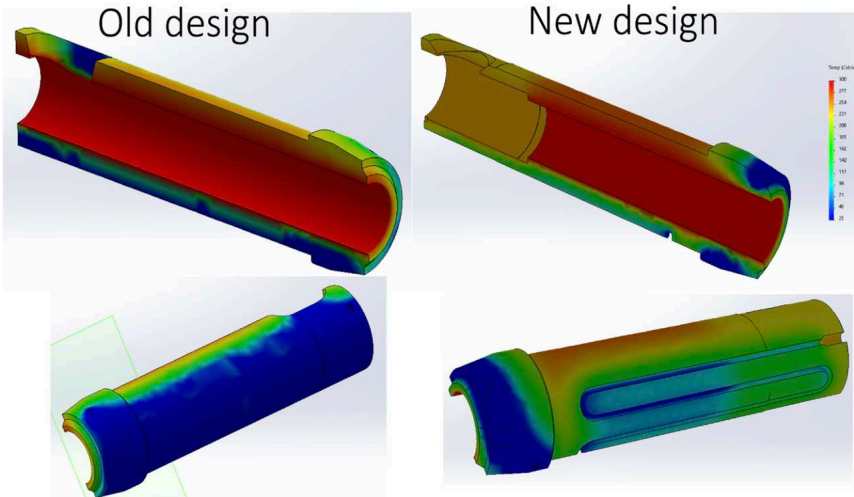


1: Heating Elements
HyperXtrude Transient Analysis: **Cycle5**:
Time=552 sec, Step 25 of 42 : Frame 198

Second, third and 4th are in the middle
of billets 1, 3 and 5.
(sub-liner is made transparent so that the
heaters can be seen).

SOFTWARE AND CURRENT SIMULATION PROJECT

SHOT SLEEVE THERMAL-MECHANICAL SIMULATION

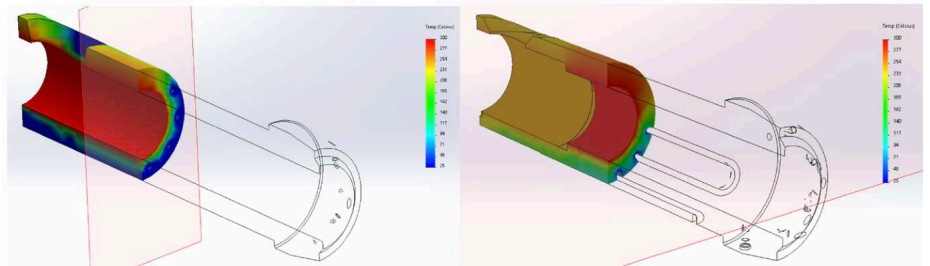


SUMMARY

- * Although the new design removes less heat from shot sleeve, the resulting temperature gradient will reduce throughout the sleeve.
- * Less temperature gradient will cause less thermal stress during the process.
- * Simulation results show significant decrease of thermal stresses with the new shot sleeve design.

Old design

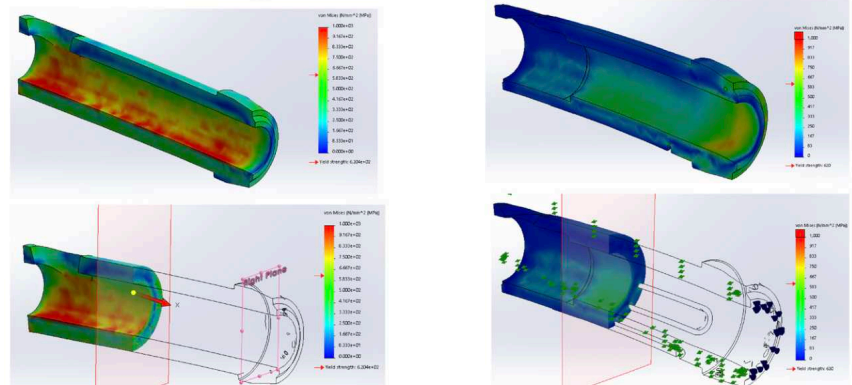
New design



Thermal stress

Old design

New design





25-29 JUNE
DÜSSELDORF
GERMANY **2019**
GIFA
14TH INTERNATIONAL FOUNDRY TRADE FAIR
WITH TECHNICAL FORUM



Castool exhibited with Schelzmetall and Exco Engineering in Dusseldorf.

We were visited by most major die casters from Europe, Asia and North America.

When asked by one of the major die casters what value Castool and our partners could deliver, we said, "Better Castings Faster".

Yes that is what we want, "Perfect castings quickly! Why didn't your competition say that?"



YES EXACTLY!
"Perfect Castings Faster"

Coming up



EUROGUSS 2020

January 14-16, 2020
Nuremberg, Germany
visit us @ **Booth # 7A-412**



The international die casting industry meets at Europe's biggest trade fair for die casting for the 13th time.

Whereas GIFA is a general trade show, Euroguss is die cast specific. Europe tends to be the place where the world goes to learn what is best in class. Of course Castool will be there, with our partners.

SCHMELZMETALL



CASTOOL
TOOLING SYSTEMS®



Aluminum USA

September 5-6, 2019 Nashville, TN, USA

Aluminum USA is in its infancy, but provides a good venue to speak with customers and OEM manufacturers. We had 46 extruders visit the booth over the 2 days of the show.



AEC Management Conference



“Take Five” Presentation “Decrease Load and Reduce Temperature to Increase Speed”

By Dan Dunn

At the 2019 AEC Management Conference September 18 at the Hyatt Regency O’Hare Chicago hotel.

The management conference is the most productive AEC meeting each year. It was very well attended by decision makers. Dan presented a 5 minute presentation focusing on Castool’s performance enhancing products and activities.





Twelfth International Aluminum Extrusion Technology Seminar & Exposition

A Clear Vision for the Future

May 19-21, 2020

Hyatt Regency Orlando • Florida USA

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In-Conjunction Workshops and more



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Technical Sessions

3 Abstracts

accepted for ET'2020

TH8, EP7, MI163

TH8

Extrusion Productivity - Ram Speed/ Container/Die

Paul H.Robbins and **Yahya Mahmoodkhani**, Castool Tooling Systems ;

Chris Jowett, **Rio Tinto** Aluminum, Canada; and **Richard Dickson**, Hydro Aluminum, USA

EP7

Extrusion Productivity - Billet Geometry/Container/Dummy Block

Paul H.Robbins and **Yahya Mahmoodkhani**, Castool Tooling Systems ; and

Chris Jowett, **Rio Tinto** Aluminum, Canada;

MI163

A Fine Balance, the Difference between Excellence and Mediocrity

Richard Dickson, Hydro Aluminum, Metals,USA

And **Paul H.Robbins**, Castool Tooling Systems , Canada

Visit us @ Castool Tooling Systems Booth# 509

ET Expo Hours*

Tuesday, May 19	12.30 PM - 6.30 PM
Wednesday, May 20	10.00 AM- 7.00 PM
Thursday, May 21	10.00 AM- 3.30 PM



DIE CASTING UPDATES

SUCCESS STORIES



Thailand

Castool Shot Sleeve 50 mm, Tooling set up is ABP-CD-R.
 The maximum lifetime of the ring is 120,000 shots as follow;
 Ring 1 = 65,000 Shots
 Ring 2 = 120,000 Shots
 Ring 3 = 96,000 Shots
 Sleeve = 294,000 Shots and still running production



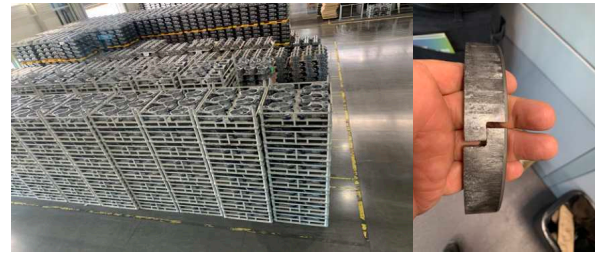
Moresco



CLS-200

Thailand

Mukini agreed that the existing lubrication system is not suitable for their production, carburators.
 The existing lubricant by Moresco contaminated their products. They plan to restart trial for a whole day(2 shifts) around 1,000 shots and need to adjust pressure regulator or increase a bit for the **CLS-200** volumetric flow rate to be 0.3 CC/shot.
 The ROI calculation shows the price per liter of the **CLS-200** is also less expensive.
 Mukini are also considering to order 10 more units for operating with all of their press after the final trial is concluded.



Mexico

Hyundai WIA increased tooling life by 15% by reducing their dwell time by almost half (18 sec reduction from 40 seconds to 22). Increasing AMP-R 160mm Tip face to 25,000 Castings, Body 36,000 Castings and Ring 23,000 castings



USA

Ljunghall has taken over 3 programs for Volvo. They currently has two IDRA 2700 using Castool Tooling System AMP-R 150 mm, 160mm and 170mm including shot sleeve. More business for Castool.



USA

GF Linimar officially choose Castool after multiple trials with 2 other competitors over the past months.

Shot Sleeves, Plunger rods and AMP-R 150 and 120 with conduct face are performing as advertised Castool Sales people tooling specialist were at GF to train all the employees on Castool tooling.

EXTRUSION UPDATES

SUCCESS STORIES



Australia

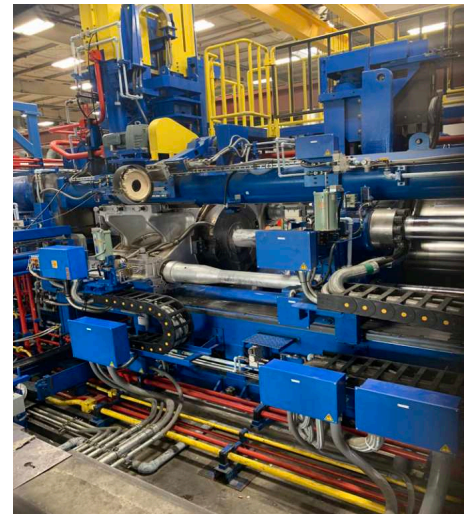
1. Dummy block ring 208.9 mm OD can reach to 6-7 weeks, Mandrel 12 weeks and Holder almost 6 months.
2. The process optimization
The QR container optimization trials at Inex. Following a meeting with production and maintenance we recorded data running alloys 6060 and 6106. Many small billet runs so we established what their current baseline running conditions are: Billet temp and speed for some alloys as follows: 6060 billet temp 480C speed 10mm/s (ext temp 550-560C alloy 6106 B Temp 480C speed 7mm/s exit temp 540 - 550C). The adjusted container temperature can increase the ram speed 10 to 20% against baseline.
Results on hard alloy productivity at Inex Brisbane. Their standard was 1400kg net/ hr. We increased this to over 1700kg net/hr. This was achieved optimising QR container settings, billet and exit temp to increase ram speed 20%. We also identified to increase butt size from 25mm to 50mm which stopped backend waver previously resulting in a scrapped length from most billets. Their normal recovery was 83%. We increased to 87% on orders we ran trials on for 6351 alloy.
Customer happy and press crew keen to implement learnings.



Sri Lanka

Good session with top management of Alumex and doing technical training to all operators, engineers and supervisors in the subject of QR containers, Dummy Block, CCB. Initially, they want to order the QR container 2nd unit and reline 1st unit for 7". After discussion, they plan to order QR container for 6" container as well.

They have 2 presses (6" & 7"). Castool QR container is running well for almost 2 years on 1800T (7"). Even though the QR container has no issues, we recommended to send it back to Castool for reline and inspection of the electrical and mechanical components to avoid downtime when running for an extended periods of time. Dummy block from Castool is also running well.



USA

Old Castle TX – 2 press operation – one older UBE 8" and one new UBE 9" both we optimized with Castool New QR. Castool worked with Old Castle on their new 9" press to improve productivity by 63% on their most difficult, high volume extrusions on the new line. Back up containers are ordered and we are focusing on the Tennessee location.



Mexico

Customer is very satisfied with Alu-Ject after 2 years in use.



Spain

Ovens were installed in March 2019. The customer is very satisfied with die performance and start-up billet reduction.

TRADE SHOWS



BOOTH # 116

October 1-3, 2019
Cleveland, Ohio, USA



MEITECH 2019

CUMBRE INTERNACIONAL EN MANUFACTURA DE
METALES, AUTOMATIZACIÓN Y ENERGÍA SUSTENTABLE
EL MUNDO DE LOS METALES INDUSTRIALES

BOOTH # D-609

October 8-9, 2019
Queretaro Congress Center
Queretaro, Mexico



BOOTH #

BA-40, HALL 100

November 20-23, 2019
BITEC, Bangkok, Thailand



BOOTH # 7A-412

January 14-16, 2020
Nuremberg, Germany



BOOTH # 509

May 19-21, 2020
Hyatt Regency
Orlando, Florida, USA



October 6-8, 2020
Messe, Dusseldorf
Germany



October 20-23, 2020
DeVos Place in Grand
Rapids, MI, USA



Japan Die Cast Congress
& Exposition 2020
November 12-14, 2020
Pacifico Yokohama, Japan



BOOTH #

BA-40, HALL 100

November 18-21, 2020
BITEC, Bangkok, Thailand

THE INTERNATIONAL TEAM

Dan Dunn
Krystean Rose

Sales Director
Sales Manager North America

Glenn Titmuss
Merih Marzari
Keattikhun Chaichana
Andre Iulianetti
Jean Dembowski
Tanmanun Tiantip
Christine Kaschuba
Sue Lotton
Sue Su
Keona Kirwan
Phudis Phollawan
Ploy Robbins

Sales Coordinator APAC
Sales Coordinator EMEA
Product Specialist Asia
Product Specialist North America
Commercial Manager
Commercial Supervisor
Customer Service
Customer Service
Customer Service
Customer Service
Customer Service
Marketing Director

CANADA/USA

Michael Lue
Jon Veenstra
Sebastien Deroy
Ron Steinger
Sam Durbin
Tom Boyd

Castool
JW Industries LLC
Sea Bass Outdoors
R-Bet Sales Inc
R-Bet Sales Inc
Boyd Screenprinting Technologies, Inc

LATIN AMERICA

Valentin Meneses
Carlos Lima
Osvaldo Lomas
Alberto Forcato

Kautec America
KTC do Brasil
Casmet
Forcato Technologia

EUROPE

Emmanuel Bach
Olivier Druhen
Bertrand Schnell
Emmanuel Mandrelli
Lars-Goran Nilsson
Luciano Pedrini
Jakub Jasiewicz
Edgar Seufert
Jurgen Barz

Comexale
Comexale
Comexale
Comexale
TEL Nordic APS
Techno Moulds
KDO Komponenty Dla Odlewnictwa
Schemlmetall
Schemlmetall

UNITED ARAB EMIRATES

Emmanuel Mandrelli *Comexale*

ISRAEL

Tuvia Kornfield *NTK Plant Management*

TURKEY

Tuvia Kornfield *NTK Plant Management*

SOUTH AFRICA

Olivier Druhen *Comexale*

JAPAN

Shigeyoshi Takagi
Tetsuya Ishida
Yasunori Ito
Nami Ito

Techno Consul Benharks
Tandem Technologies
KBS Kubo Manufacturing Co
KBS Kubo Manufacturing Co

KOREA

JH Song
SW Song
Tae Jean Hwang

ANK Ltd
ANK Ltd
GS Tech SOolutions

TAIWAN

Jack Lee

Shiny Lee

CHINA

Daniel Cheng
Long Shun Cheng
Tony Chein

OEA Bridge Link
OEA Bridge Link
OEA Bridge Link

THAILAND

Manu Mekdhanasarn
Patcharee Parkong

Siam Anglo Alloy Co.Ltd
Siam Anglo Alloy Co.Ltd

VIETNAM

Manu Mekdhanasarn
Patcharee Parkong
Tran Thi Thanh Thuy

Siam Anglo Alloy Co.Ltd
Siam Anglo Alloy Co.Ltd
Thang Long Mechanics Equipment Co

INDONESIA

Yovinus Krisananto

PT Willisindomas Indahmakmur

MALAYSIA

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Patcharee Parkong

Siam Anglo Alloy Co.Ltd
Siam Anglo Alloy Co.Ltd

SINGAPORE

Manu Mekdhanasarn
Patcharee Parkong

Siam Anglo Alloy Co.Ltd
Siam Anglo Alloy Co.Ltd

INDIA

Sachin Kumar

AUSTRALIA/NEW ZELAND

Doug Loader
Glenn Titmuss

Extrusion Machine Co New Zeland
GT Ex-Press Pty.Ltd