

NEWSLETTER

MARCH
2021

This year proved to be a test for the world like no other in modern times. Within a few weeks, the COVID-19 global health pandemic changed the way we live, work, and socialize. Certain industries - like aviation - have been dramatically reshaped, perhaps indefinitely. Many industries however have seen underlying trends cemented, and even amplified. The automotive industry - Exco's primary end market is no exception. After initial steep declines as the impact of COVID hit, demand for passenger vehicles rebounded sharply, and has quickly approached pre-pandemic levels. Meanwhile, the trend towards making traditional vehicles lighter and more fuel efficient as well as the movement towards ...

electric vehicles has only gained momentum as OEMs pursue a path to lower emissions. More broadly, sustainability initiatives have intensified across all industries. I am pleased to say Exco is very well positioned to grow profitably - and contribute positively to - these realities in the years ahead.

Darren M.Kirk
President and CEO
EXCO TECHNOLOGIES



"We are happy to say that all-in-all 2020 and the start of 2021 have been very good years for Castool. We had one related case of Covid-19, and no infections to date. I would like to thank our staff and make special mention of Jim Bernie for helping us through this difficult time.

Castool is above all our projections for both sales and income so far in 2021, both in the Americas and Asia. I hope you enjoy the newsletter. We will publish future newsletters in March and September. There is a lot going on with new plants on the horizon in Kenitra **Morocco**, Queretaro **Mexico** and Newmarket **Canada**."

ENJOY YOUR READ, AND I HOPE TO BE ABLE TO SEE YOU SOON.

Paul Robbins
VP/General Manager
CASTOOL



CASTOOL MAKES DIE CAST AND EXTRUSION
BETTER

✉ EMAIL : SALES@CASTOO.COM

📍 2 PARRAT ROAD, UXBRIDGE , ONTARIO
CANADA L9P 1R1

☎ +1.905.852.0121

🌐 WWW.CASTOOL.COM

WE WOULD LIKE TO CONGRATULATIONS



**PRODUCTION MANAGER
(CASTOOL TOOLING SYSTEMS)
STEVE BOYCE**



Steve joined Castool December 1989. He started as lathe operator, moved to the vertical Bullard, then to CNC lathes. He was promoted to Lathe lead hand in 1998, and to Production Supervisor for turning and drilling in 2007.

Steve has been **PRODUCTION MANAGER** since 2018, in charge of all production in Uxbridge. Steve was **AWARDED THE PRESIDENT'S AWARD FOR 2020** for outstanding performance for all of Exco Technologies Ltd by Darren Kirk.

"Steve enjoys snow skiing, mainly in Quebec with his family and grandchildren."



**SALES MANAGER - (CASTOOL90)
ADAM BOONSTRA**



Adam graduated as an engineering technologist from Durham College in 1999.

He started at Alu Die in 1999 in design, and later in CAM and also sales. He moved to Exco when Alu Die was closed. He left Exco in 2012 to start Automated CAD Solutions offering design, programming and 3 axis milling services. He joined Castool working in CAM in 2018, and has been very involved with start up operation for **CASTOOL90**. Adam has accepted the position as **SALES MANAGER FOR EUROPE, MIDDLE EAST AND AFRICA**. He will be moving to Morocco prior to September 2021. We wish him success in his new job.

"Adam enjoys recreational vehicles, and is looking forward to playing in the desert."



**SALES MANAGER - (CASTOOL180)
KEATTIKHUN CHAICHANA (PALM)**
MBA International Business Management
B.Eng. Chemical Engineering.



Palm joined Castool 180 in 2015 as Product Specialist after spending 10 years in the automotive industry with Toyota and GM. He worked in quality control with both companies focusing on the castings. He was promoted to **SALES MANAGER ASIA** at **CASTOOL180** in 2021.

Palm has been very involved with tooling and equipment installations and successful optimization efforts in Asia. He has very good knowledge and experience in casting and extrusion, and is a very passionate engineer. He has completed all the course work and graduated with a **MBA, International Business Management** in 2020 at Stamford International University with the accomplishment of **"DISTINCTION"**.

"Palm enjoys travel and photography."



UPDATE WEBSITE AND GOOGLE ADS

We started running updated ad campaigns through Google on January 27. We are targeting prospective customers searching for products and industry-related keywords, such as extrusion, die casting, die ovens, dummy block and the like. In the first four weeks of our campaign, here's what we've seen.

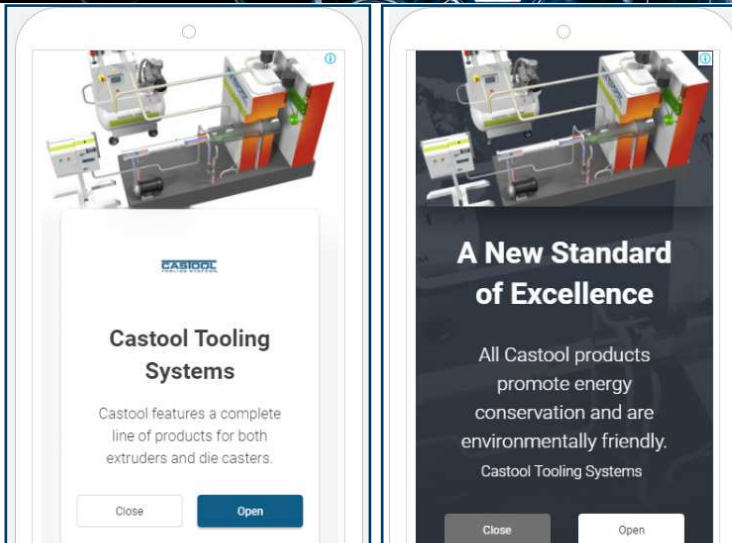
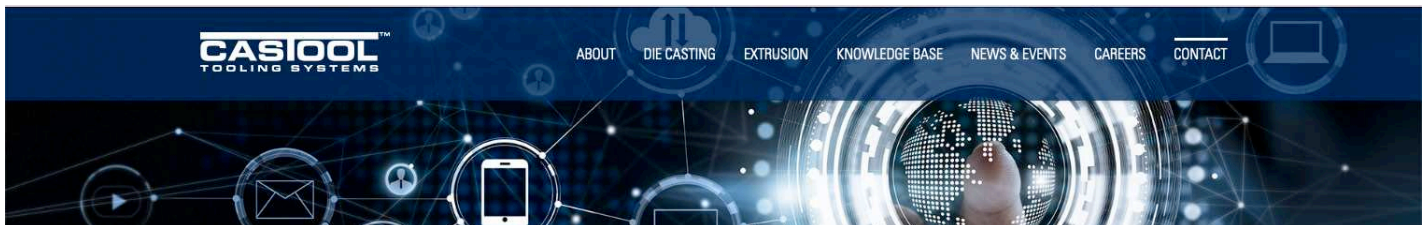
Ad Campaign Performance

WWW.CASTOOL.COM

Overview of your advertising campaign's performance.

SUMMARY

Impressions	Clicks	Spend	Avg. CPC	Ad Phone Calls	Leads
584,573	13,623	\$1,307	\$0.25	12	12
↑ 1,176.7%	↑ 1,565.4%	↑ 535.9%		↑ 1,100.0%	↑ 200.0%
<i>Percentages are a comparison to previous time period</i>	<i>How many times your ads appeared</i>	<i>How many times your ads were clicked on</i>	<i>Cost per click</i>	<i>Phone calls directly from your Google Ads</i>	<i>Contact Attempts (Email & Phone)</i>



Monthly Summary - Feb, 2021

Google Ads:

- Compared to the 70 leads we saw in January, our lead activity was down significantly (66%).
- There were 12 call attempts directly from the Google Ads, and a further 12 tracked on the website.
- All but 1 of our leads were generated from our Search ads.
- Our costs per click are very low, which is excellent: \$0.52 for search ads, and \$0.04 for display ads.
- 66% of all people who clicked on the ads were between 18 and 34.
- Men clicked on the ads 202% more often than women.

Website Traffic from the Ad Campaign:

- The ads generated over 7,506 visits to the website, which is 54% of all website visits.
- We tracked 265 conversion events, which is 34% of all events.
- We are seeing an average session duration of 27 seconds, which is respectable.
- The most popular pages were: Home, Die Casting, Extrusion, Shear Blades, and Contact.
- 82% of the ad traffic is coming from India, as are 63% of the conversions.

Overall Website Traffic:

- 46% of the ad traffic is coming from India, as are 26% of the conversions.
- The most popular pages were: Home, a non-English blog post, Die Casting, Extrusion, and Contact.
- We see a more even distribution of website traffic by gender, as compared to the visitors from the ad campaign.

Recommendations:

- As India is using up most of our budget, we may want to consider breaking out the campaign into multiple campaigns by geographic region (e.g. Asia, Europe, North America). This would allow us to distribute the spend more evenly.
- Continue optimizing the campaign as data on the new campaigns comes through.
- Implement new landing pages and additional content on the website to support the ad campaign.

"We've already seen substantial savings in our average costs per click (33%) so we're off to a great start. As we bring on additional website pages we will start running ads for the following topics/products:

- Software VOS
- Tooling
- Optical Pyrometers
- Heat Felts
- Pressure Testing
- Additive Manufacturing

Ad • www.castool.com/plunger-rods

Castool Plunger Rods | Reduce Cost Per Shot | Increase Plunger Life

Extend operation life of shot sleeve and plunger tip, while eliminating contaminates. Castool sets a new standard of excellence in the die cast industry. Lubrication Controller, Plunger Rod, Plunger Tips, Lube Drop & Combi-Lube...

In 2020, the impact Covid-19 had was felt internationally. At Castool, we acknowledged the virus and government legislation to protect workers and business to create a policy in March with procedures to stop the spread of the virus. Throughout the year, changes were made and revised according to legislative requirements.



2021 MEDICAL ACCIDENT INCENTIVE PLAN

Congratulations!


Castool has achieved the target of medical accident free from October through December 2020. The safety draw for the incentive program for 3 consecutive months ending December 31, 2020.

The prize is \$200 each for 8 winners.

The collective effort workers have made is much appreciated and is rewarding to all Castool employees.

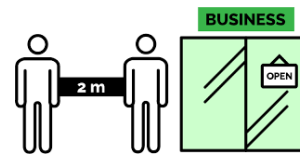
SAFE WORK DURING THE COVID-19 PANDEMIC

Castool created a Covid-19 policy since March 2020 and is edited or updated as per changes in provincial legislation. Daily temperatures and screening for all employees including visitors/contractors are followed as per requirements. Postings and signage both physically and electronically have been placed at entrances and bulletin boards throughout the facility. We have added a 24-page power point presentation which runs on our safety monitor beside the employee entrance.

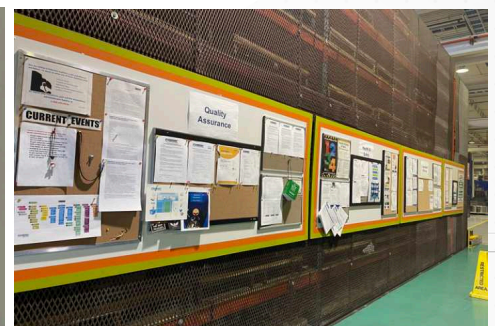
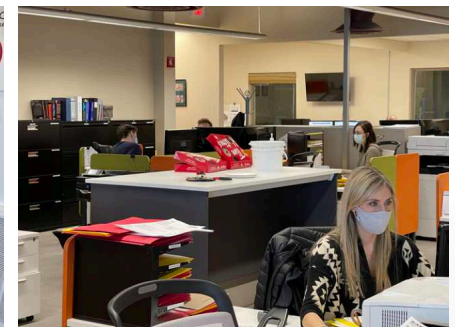


THE 8 WINNERS ARE:

1. Oleg Zemriga
2. Scott Kelly
3. Deodat Jaipersaud
4. Andrew Mavec
5. Rob Morrison
6. Eduard Kostelac
7. Paul Shiwram
8. Tommy Stampolidis



Jim Birnie
Health & Safety
Coordinator



CASTOOL GROUP UPDATE



Castool never stops developing products and services to increase extrusion and die cast production efficiencies, and provide greener products whenever possible. We also promote safety within Castool and our customers' facilities.



5 AXIS MILLING MACHINE



GUN DRILL



4 AXIS LATHE

Castool has continued to increase sales during the pandemic. We have added capacity and capabilities in areas of turning, drilling, multi axis turning and also multi axis milling.

The plant expansion completed in December 2019 is now completely utilized.

UXBRIDGE, CANADA



Castool 180 has maintained sales and is servicing customers without any interruption during the pandemic.

They have recently added a powerful 2 axis lathe to assist with boring and turning.

CHONBURI, THAILAND



2 AXIS MANUAL LATHE



KENITRA, MOROCCO



We have been busy building Castool 90's plant in Kenitra during the pandemic. We plan to be in production in September, latest October 2021. Most of the equipment has been purchased and will be installed during the summer.

We have also hired the key personnel for accounting, plant and sales.

We will be making and servicing our European, Middle East and African customers from Morocco in the next 6 months. Be assured that Castool will maintain 100% control over quality. Our material sources and other key supplies will remain 100% same as Castool Canada. Most consumable products will continue to be made in Canada, such as dummy blocks and plunger tips.



HEAT TREAT



- Construction begins Sept 2021
- Equipment arrives December 2021
- Operation starting January 2022

Castool's in-house heat treatment will enable us to reduce delivery times and enhance our products to further increase performance and longevity.

NEWMARKET, CANADA



QUERETARO, MEXICO

Castool has purchased land in Queretaro, Mexico and will start construction of a 5th facility in 2022.

Castool-25 will make containers, relines, stems and shot sleeve for Latin America. We plan to be in operation early 2023.



TRAINING AND SUPPORT



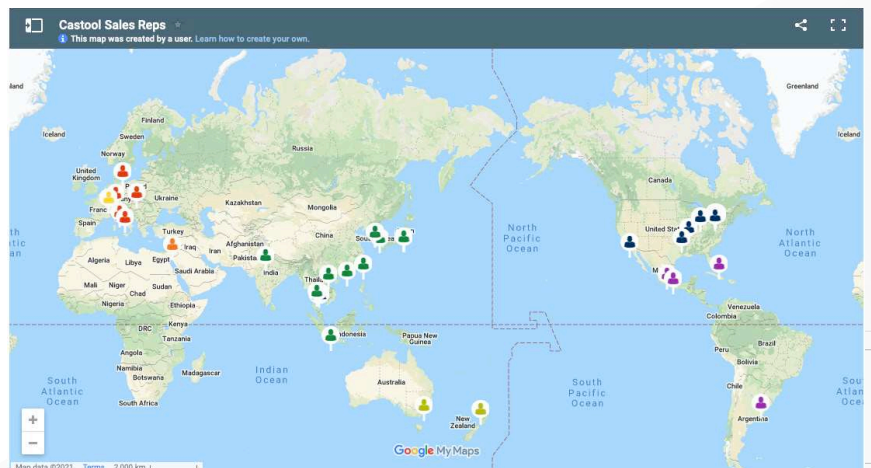
Castool is currently using Microsoft Teams for online meetings and training seminars. This new interactive technology will continue to play a significant role during and after the COVID-19 pandemic.



We have had 4 virtual sales meetings with our international team (North America, South America, Europe, Asia and Australia) each attended by 40 to 50 persons for 2 to 3 hours.

Information was shared by many people from Castool, InterGuss, Exco and Exco Engineering. We hope to also include our steel and other material partners as well as lubricant, heating element, heat treat and others in the future.

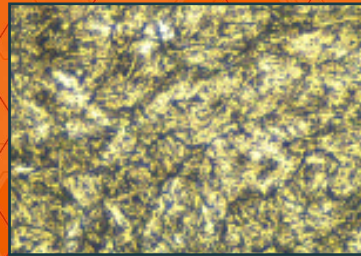
We are taking a break for March and will start again with 1 to 1.5 hours sessions in the spring.



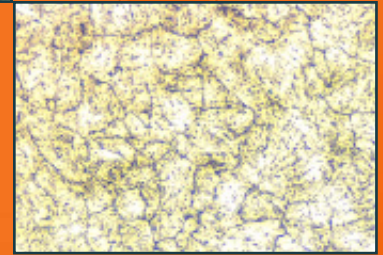
RESEARCH CORNER
LABORATORY



BY YAHYA



MARTENSITE
TEMPERED 500X



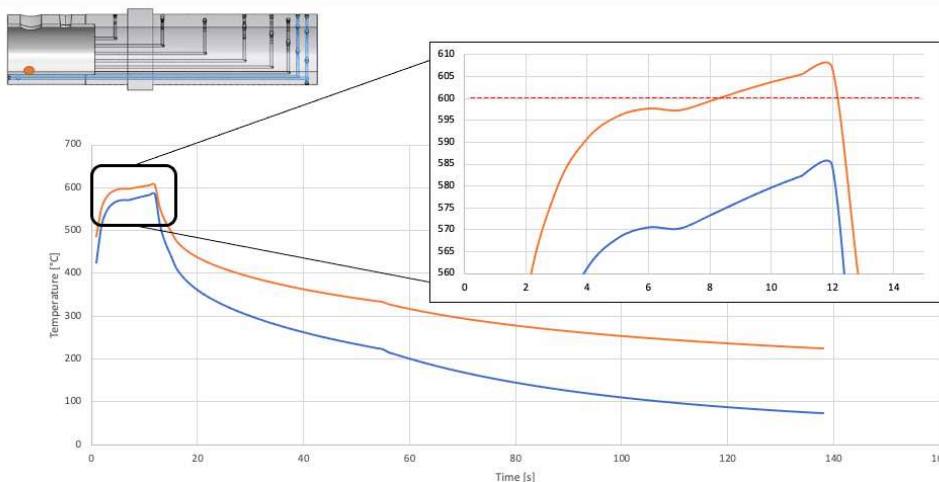
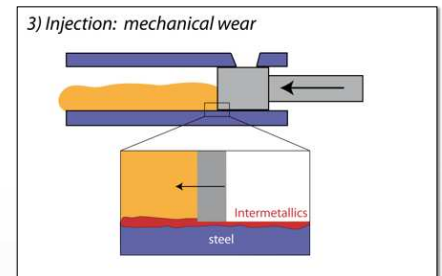
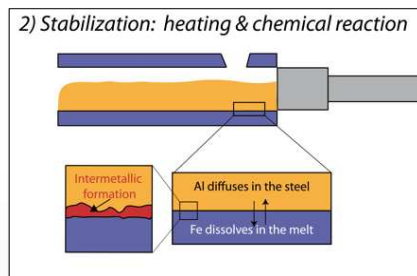
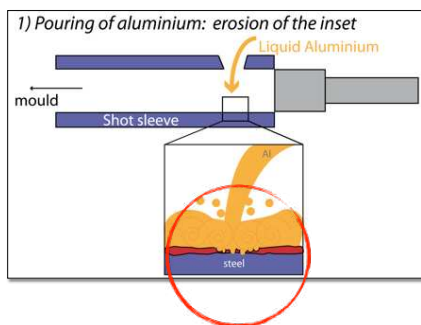
GRAIN
STRUCTURE 500X

SHOT SLEEVE WEAR MECHANISMS

We are constantly studying the modes of failure of each of our products. Every die caster wants long life and uninterrupted production with less scrap. The shot sleeve and insert can be a major cause of unscheduled downtime and scrap.

SHOT SLEEVES FAIL:

- Thermal: Pour temperatures are up to 700°C and can last up to 20 seconds
- Mechanical: Friction between the plunger and the sleeve or insert
- Chemical: Molten aluminum attacks the steel, especially structural alloys
- Erosion: Velocity and angle of attack of the pour



INSERT
TEMPERATURE
HISTORY

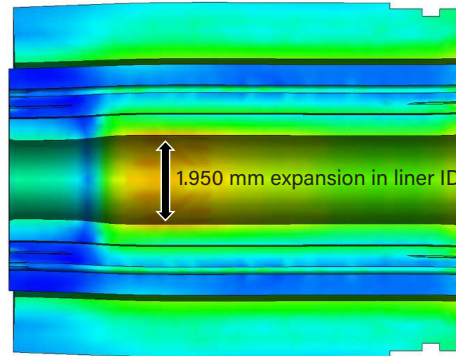
Confidential

EXTRUSION SIMULATION

SEVERAL SERVICES ARE AVAILABLE THROUGH CASTOOL LAB INCLUDING BUT NOT LIMITED TO:

- ▶ Extrusion process simulation : simulation of temperatures, stresses and deflections in workpiece and tooling (container, dummy block and die) during the extrusion process.
- ▶ Die cast process simulation: thermal and mechanical simulation as well as fluid flow and solidification during casting.
- ▶ Extrusion die simulation: with capabilities for flow simulation through the die, nose tip formation, charge weld and seam weld tracking, billet skin tracking and die deflection.
- ▶ Microstructure analysis: metallography techniques are used to look at the microstructure of received raw material, heat treated material or used material.
- ▶ Chemical composition: Optical Emission Spectroscopy is used to determine the chemical composition of different alloys.
- ▶ Numerical and Analytical Process Simulation: to help with design optimization, product development, problem solving, research, publication, and educating the industry about the process.
- ▶ Material Characterization: verify/certify received materials, study the failures, research and development on material selection/processing.

QR CONTAINER STRESS AND DEFORMATION

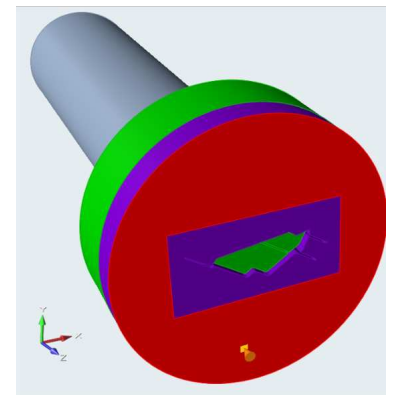


- Deflections are magnified by 30 times more than true values.
- QR results in less stress on the liner ID and then less liner deformation.
- In QR container liner ID expands about 0.1 mm less than the container with elements further away from liner. This value can be even higher in reality because the material model is assumed to be fully elastic.

TOOL DEFLECTION AND LONGITUDINAL WELDS

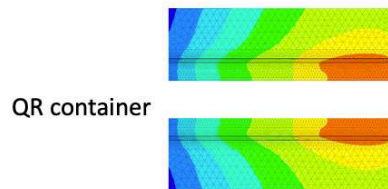
Boundary and Simulation conditions

- The red area is assumed as rigid support.
- Die material (H13) is considered fully elastic.

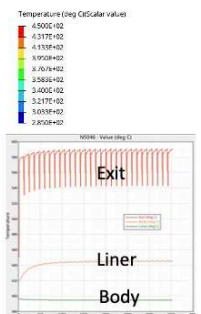
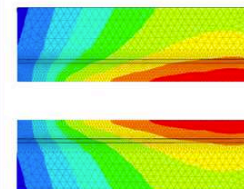


TEMPERATURE DISTRIBUTION

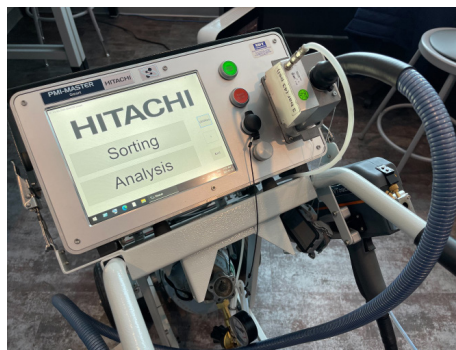
Preheated and idle
(Before first billet)



After 30 billets

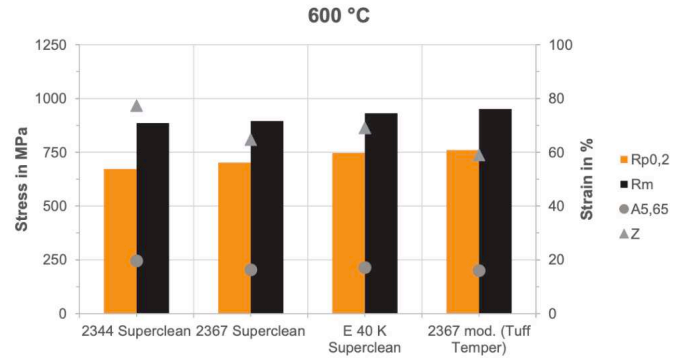
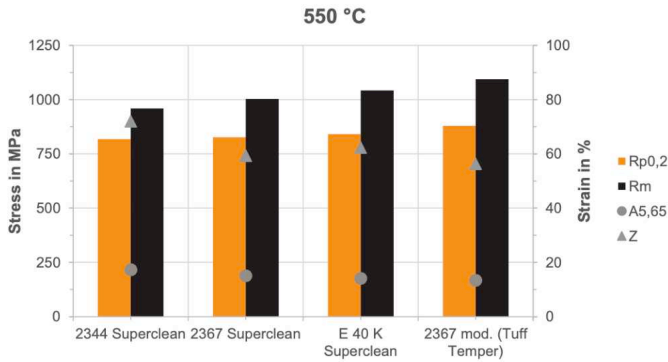


MATERIAL CHARACTERIZATION



Optical Emission Spectrometer (OES)

Metallography Microscope

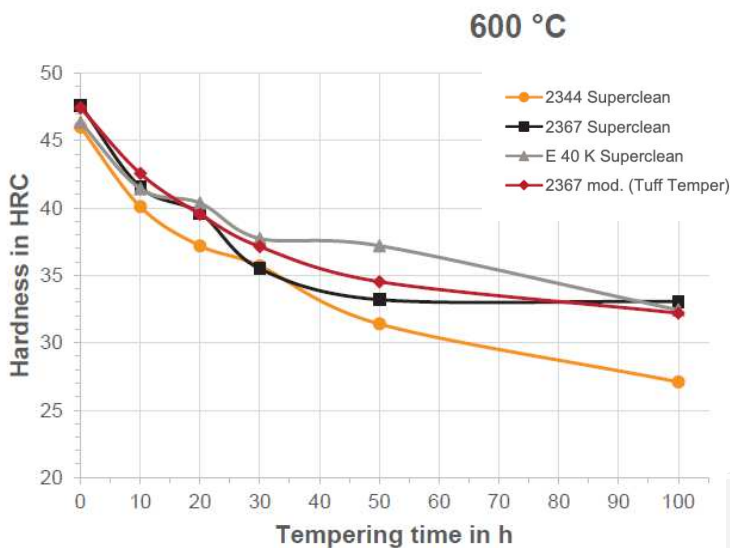
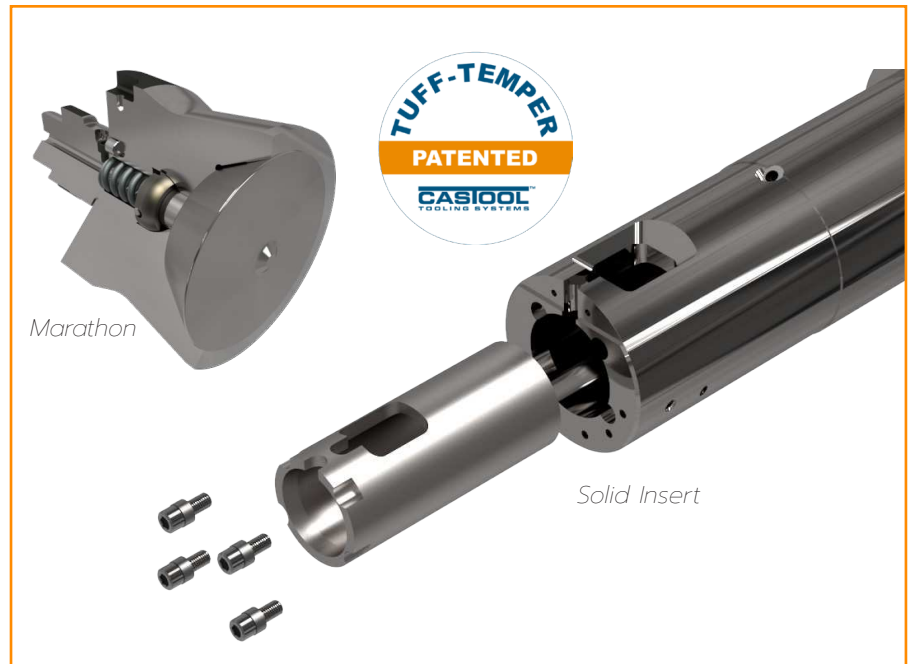


EXTRUSION DUMMY BLOCK:

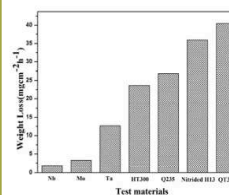
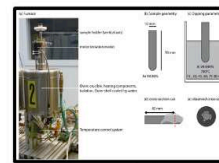
Tuff Temper is recommended for dummy blocks in high pressure extrusion (>95 ksi face pressure) because it has higher yield strength than H-13 and it allows this material to undergo larger elastic deformation before it plastically deform, which extends time to failure.

SHOT SLEEVE INSERT:

TuffTemper has better hot wear resistance and hot strength than H-13. Tempering temperature for TuffTemper is about 20°C higher than H-13 for the same hardness level. This makes it retain hardness in severe applications, which extends time to failure.



H13 versus Mo Corrosion in Al



- Corrosion test at 750°C for 24hr
 - Nitrided H13 37 mg/hr
 - Molybdenum 2mg/hr
- Higher Moly content
 - better resistance against molten Al

Applied Mechanics and Materials Vol. 155-156, (2012) p.969-973

TOOLING SELECTION

We are constantly working to understand time to failure, and cause of failure in all of our tooling and equipment. The goal is to reduce cost and eliminate unscheduled downtime. A recipe chart for aluminum extrusion and many of the materials used at Castool are listed below. These resources are constantly evolving.

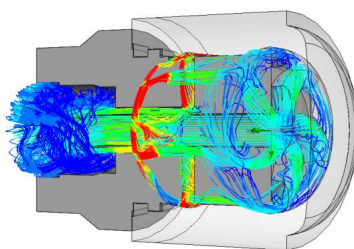
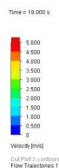
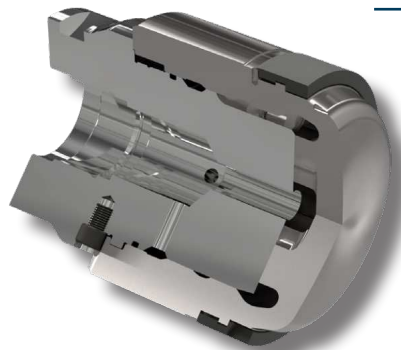
EXTRUSION RECIPES

EXTRUSION	ALUMINUM ALLOYS				COPPER
	SOFT	MEDIUM	HARD	EXTRA HARD	
Aluminum Alloy		6063/6005A/6061/...	6082/HS65/7003/...	7075/7B04/7178/2011/2014/2024/5083/5086/...	
Container	3 pc	2 pc	3 pc	3 pc (H13 Sub-Liner)	3 Piece (4340 body-H13 Subliner Inconel Liner)
Dummy Block	H13 Marathon	H13 RRB	H13 Marathon	Tuff Temper Marathon	Inconel
Extrusion exit speed	high (>100 ft/min)	medium to high (30-250 ft/min)	medium (15-70 ft/min)	slow (3-7 ft/min)	
Ram speed	8-20 in/min	15-40 in/min	8-20 in/min	2-8 in/min	>20 ipm
Exit temperature window	Large	medium (6061:small)	small (7003:medium)	small	
Load	Low	Medium	High	Extra High	High
Extrusion Ratio	High	Medium	Medium	Low	Low
Profile complexity	Thin walled (micro-tube,...)	Medium to High	Medium	Low	Low
Container taper (°F/cm)	0.5	1	0.5	No Taper	No Taper
Container Air Cooling	Free air with fins	Forced air through fins	Free air with fins	No cooling	Forced air through fins

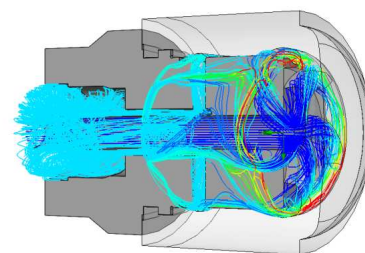
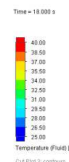
MATERIAL SELECTION

Alloy		Chemical composition										Strength	Toughness	Tempering/Ageing temperature [°C]		Thermal conductivity [W/mK]	Cost factor	Application
		Fe	C	Si	Mn	Cr	Ni	Mo	V	Nb	Ti							
Low Alloy Steel	4340	Bal.	0.4	0.25	0.7	0.8	1.9	0.3				**	*****	Tempered	540 (38 HRC) 600 (34 HRC) 630 (32 HRC)	42	75	Container body/subliner (34-38 HRC) Plunger tip (32-36 HRC)
	L6 (1.2714)	Bal.	0.55	0.3	0.9	1.1	1.7	0.5	0.1			***	***	Tempered	530 (42 HRC) 570 (38 HRC)	35	75	Container body (38-42 HRC)
Hot Work Tool Steel	H11 (1.2343)	Bal.	0.4	1	0.4	5		1.3	0.4			***	***	Tempered	630 (42 HRC) 650 (38 HRC)	26	100	Container subliner (38-42 HRC)
	H13 (1.2344)	Bal.	0.4	1	0.4	5		1.5	1			****	***	Tempered	620 (48 HRC) 630 (46 HRC) 650 (42 HRC) 660 (38 HRC)	24	100	Container liner (46-48 HRC) Container subliner (38-42 HRC) Shot sleeve / insert (46-48 HRC) Plunger rod
	DieVar	Bal.	0.35	0.2	0.5	5		2.3	0.6			****	***	Tempered	595 (48 HRC) 605 (46 HRC) 620 (42 HRC) 640 (38 HRC)	30	200	Shot sleeve (46-48 HRC) Plunger tip (38-42 HRC)
	E40K	Bal.	0.35	0.3	0.3	5		1.8	0.8			****	****	Tempered	600 (48 HRC) 620 (46 HRC)	30	200	Container liner (46-48 HRC)
	1.2367	Bal.	0.37	0.3	0.4	5		3.0	0.6			****	***	Tempered	630 (48 HRC) 640 (46 HRC)	30	200	Shot sleeve insert (46-48 HRC) Bore welding
	Tuff Temper	Bal.	0.36	0.3	0.4	5		3.8	0.8			*****	**	Tempered	640 (48 HRC) 650 (46 HRC)	30	200	Shot sleeve insert (46-48 HRC)
	Q10	Bal.	0.36	0.25	0.6	5		1.9	0.55			****	***	Tempered	610 (48 HRC) 620 (46 HRC)	30	200	Container liner (46-48 HRC)
	DAC3	Bal.	0.4	0.3	0.3	5		1.6	0.7			****	***	Tempered	600 (48 HRC) 620 (46 HRC)	30	200	Container liner (46-48 HRC)
Super Alloys	IN718	~20				19	52	3			5	***	****	Aged	720 (44 HRC)	13	1500	Copper extrusion liner (40-44 HRC)
	A286	~50				15	25	1.3			2.3	**	*****	Aged	720 (34 HRC)	15	750	Copper extrusion liner
Stainless Steel	M303	Bal.	0.27	0.3	0.65	14.5	0.9	1				**	*****	Tempered	540 (40 HRC) 570 (35 HRC)	23	300	Plunger holder
Copper Alloys	A25	1.5 Be, 0.15 Co, 0.15 Ni										**	***	Aged	320 (280 HB)	120	2400	Plunger tip
	A45	2.5 Ni, 0.65 Si										*	****	Aged	480 (190 HB)	220	1300	Plunger tip body
	A52	0.55 Be, 1 Co, 1 Ni										*	****	Aged	480 (260 HB)	240	1800	Plunger tip

DIE CASTING UPDATES



WATER FLOW



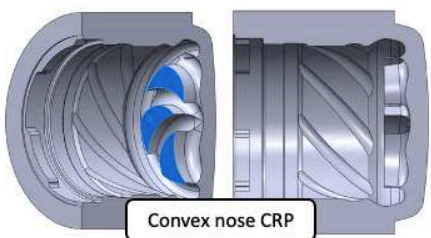
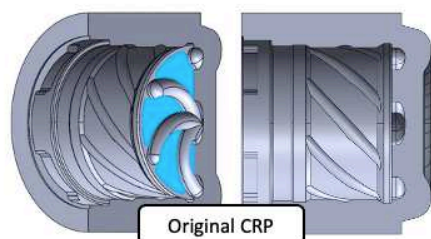
TEMPERATURE

CRP-R CON-DUCT PLUNGER

THE CRP PLUNGER TIP HAS BEEN EVOLVING QUICKLY INTO A COMMERCIAL SUCCESS STORY.

Die Casters have wanted a less expensive plunger, without beryllium copper that is easy to use with long life. The present design is delivering very good results in many die casting applications.

The CRP plunger is One Piece, body is Con-Duct material and ring is 40% wider.

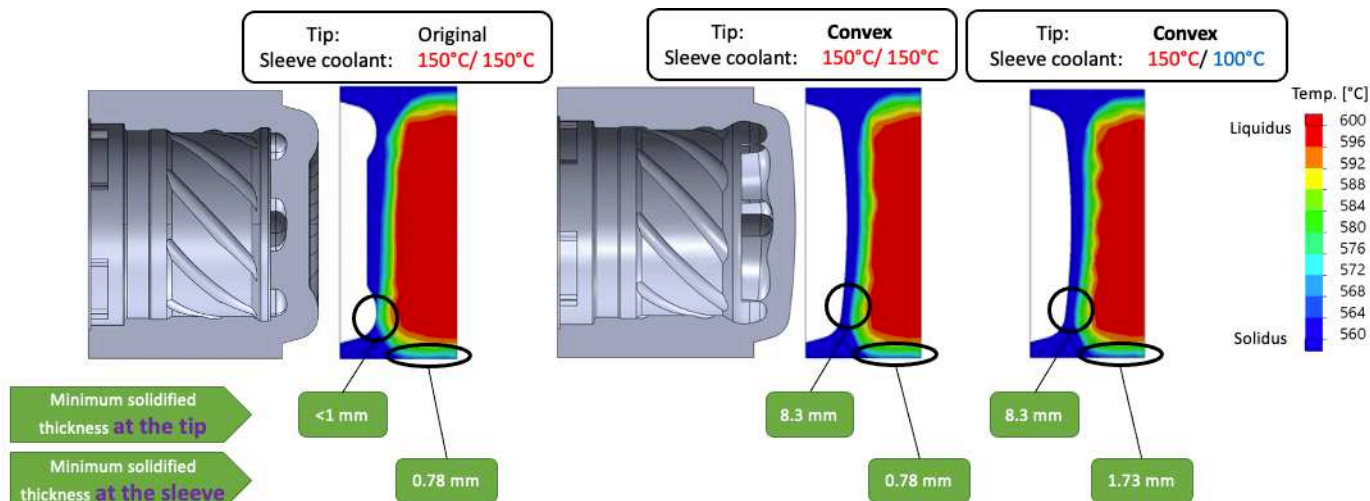


- Same sleeve is used for all the simulation.
- The temperature of the Thermal regulator is set to 150°C
- The temperature of the last two channels (highlighted) is set to 100°C for the last simulation #3

SIMULATION	TIP	COOLANT TEMP IN GREY CHANNELS	COOLANT TEMP IN BLUE CHANNELS
1	Original	150°C	150°C
2	Convex	150°C	150°C
3	Convex	150°C	100°C

BISCUIT TEMPERATURE PROFILE

- Temp distribution at the end of dwell time.
- Red colour represents molten aluminium and blue is solidified.
- Material under 570°C is considered solidified.
- The new design with convex nose results in a better and more uniform solidified profile.
- 50°C lower temperature at the final two regulator channels in the sleeve - More than double the solidified wall
- Note: the heat transfer to the die is ignored in these simulations.



CASTOOL TOOLING SYSTEMS

PLUNGER TIPS

ABP

Allper Bush Plunger

PURPOSE

- Prevent fly from penetrating between the end sleeve and plunger, preventing leakage.
- Allow assembly and disassembly with a minimum of force.
- Minimize pressure and heat on the end sleeve and plunger.

FUNCTION

- Prevent fly from penetrating between the end sleeve and plunger, preventing leakage.
- Allow assembly and disassembly with a minimum of force.
- Minimize pressure and heat on the end sleeve and plunger.

CASTOOL TOOLING SYSTEMS

PLUNGER TIPS

CRP

Castool Ring Plunger

PURPOSE

- Prevent fly from penetrating between the end sleeve and plunger, preventing leakage.
- Allow assembly and disassembly with a minimum of force.
- Minimize pressure and heat on the end sleeve and plunger.

FUNCTION

- Prevent fly from penetrating between the end sleeve and plunger, preventing leakage.
- Allow assembly and disassembly with a minimum of force.
- Minimize pressure and heat on the end sleeve and plunger.

CASTOOL TOOLING SYSTEMS

PLUNGER TIPS

AMP

Allper Modular Plunger

PURPOSE

- Prevent fly from penetrating between the end sleeve and plunger, preventing leakage.
- Allow assembly and disassembly with a minimum of force.
- Minimize pressure and heat on the end sleeve and plunger.

FUNCTION

- Prevent fly from penetrating between the end sleeve and plunger, preventing leakage.
- Allow assembly and disassembly with a minimum of force.
- Minimize pressure and heat on the end sleeve and plunger.

CASTOOL TOOLING SYSTEMS

PLUNGER TIPS

ARP/CRP

Allper Ring Plunger

PURPOSE

- Prevent fly from penetrating between the end sleeve and plunger, preventing leakage.
- Allow assembly and disassembly with a minimum of force.
- Minimize pressure and heat on the end sleeve and plunger.

FUNCTION

- Prevent fly from penetrating between the end sleeve and plunger, preventing leakage.
- Allow assembly and disassembly with a minimum of force.
- Minimize pressure and heat on the end sleeve and plunger.

CASTOOL TOOLING SYSTEMS

LUBRICATION

CLS 200

Variable oil based lubricant

PURPOSE

- Reduce friction between the sleeve and the plunger.
- Prevent corrosion of the sleeve and plunger.
- Extend the life of the sleeve and plunger.

FUNCTION

- Reduce friction between the sleeve and the plunger.
- Prevent corrosion of the sleeve and plunger.
- Extend the life of the sleeve and plunger.

CASTOOL TOOLING SYSTEMS

LUBRICATION

CLS 192

High temperature resistant lubricant

PURPOSE

- Reduce friction between the sleeve and the plunger.
- Prevent corrosion of the sleeve and plunger.
- Extend the life of the sleeve and plunger.

FUNCTION

- Reduce friction between the sleeve and the plunger.
- Prevent corrosion of the sleeve and plunger.
- Extend the life of the sleeve and plunger.

CASTOOL TOOLING SYSTEMS

VACUUM SYSTEM

CHILL BLOCK

PURPOSE

- Reduce the temperature of the casting.
- Prevent the casting from warping.
- Extend the life of the casting.

FUNCTION

- Reduce the temperature of the casting.
- Prevent the casting from warping.
- Extend the life of the casting.

CASTOOL TOOLING SYSTEMS

SHOT SLEEVES

SS 100

High temperature resistant sleeve

PURPOSE

- Reduce the temperature of the casting.
- Prevent the casting from warping.
- Extend the life of the casting.

FUNCTION

- Reduce the temperature of the casting.
- Prevent the casting from warping.
- Extend the life of the casting.

CASTOOL TOOLING SYSTEMS

NEW SHOTS SLEEVE INSERT

PURPOSE

- Reduce the temperature of the casting.
- Prevent the casting from warping.
- Extend the life of the casting.

FUNCTION

- Reduce the temperature of the casting.
- Prevent the casting from warping.
- Extend the life of the casting.

CASTOOL TOOLING SYSTEMS

NEW SHOTS SLEEVE INSERT

PURPOSE

- Reduce the temperature of the casting.
- Prevent the casting from warping.
- Extend the life of the casting.

FUNCTION

- Reduce the temperature of the casting.
- Prevent the casting from warping.
- Extend the life of the casting.

CASTOOL TOOLING SYSTEMS

NEW SHOTS SLEEVE INSERT

PURPOSE

- Reduce the temperature of the casting.
- Prevent the casting from warping.
- Extend the life of the casting.

FUNCTION

- Reduce the temperature of the casting.
- Prevent the casting from warping.
- Extend the life of the casting.

CASTOOL TOOLING SYSTEMS

NEW SHOTS SLEEVE INSERT

PURPOSE

- Reduce the temperature of the casting.
- Prevent the casting from warping.
- Extend the life of the casting.

FUNCTION

- Reduce the temperature of the casting.
- Prevent the casting from warping.
- Extend the life of the casting.



BETTER CASTINGS FASTER
BROCHURES AND DATA SHEETS OF OUR PRODUCT
AVAILABLE

www.castool.com

Scan me through your smart phone camera!

ALU-JECT



DESCRIPTION

- ALU-JECT is a reworked, water based lubricant designed for extrusion of aluminum alloys. It is formulated with advanced technology to provide superior lubrication and reduce die wear.

ALU-JECT LIQUID

ALU-JECT is added to water in the lubricant solution.

APPLICATIONS

ALU-JECT is used for extrusion of aluminum alloys. It is formulated with advanced technology to provide superior lubrication and reduce die wear.

PHYSICAL PROPERTIES

Appearance	White, milky liquid
Odor	Neutral
Viscosity	~100 cP
Density	~1.05 g/cm³
Flash Point	> 100°C
Freezing Point	< -10°C
Boiling Point	> 150°C
Water Solubility	Highly soluble
Biodegradability	Highly biodegradable
Corrosiveness	Non-corrosive
Compatibility	Compatible with most aluminum alloys

PRECAUTIONS

- ALU-JECT should be used in a well-ventilated area.
- ALU-JECT should be stored in a cool, dry place.
- ALU-JECT should be kept away from children.

COLD CLEAN OUT BLOCK



PURPOSE

- The Cold Clean Out Block is designed to remove aluminum from the die during the extrusion process. It is formulated with advanced technology to provide superior cleaning and reduce die wear.

FUNCTION

- The Cold Clean Out Block is used to clean the die during the extrusion process. It is formulated with advanced technology to provide superior cleaning and reduce die wear.

ALLOY SOON

The Alloy Soon is a reworked, water based lubricant designed for extrusion of aluminum alloys. It is formulated with advanced technology to provide superior lubrication and reduce die wear.

QUICK RESPONSE (QR) CONTAINER




PURPOSE

- The Quick Response (QR) Container is designed to hold lubricant and other materials used in the extrusion process. It is formulated with advanced technology to provide superior storage and reduce die wear.

FUNCTION

- The Quick Response (QR) Container is used to hold lubricant and other materials used in the extrusion process. It is formulated with advanced technology to provide superior storage and reduce die wear.

SINGLE CELL DIE OVENS



PURPOSE

- The Single Cell Die Ovens are designed to heat die sets during the extrusion process. They are formulated with advanced technology to provide superior heating and reduce die wear.

FUNCTION

- The Single Cell Die Ovens are used to heat die sets during the extrusion process. They are formulated with advanced technology to provide superior heating and reduce die wear.

FIXED DUMMY BLOCK



PURPOSE

- The Fixed Dummy Block is designed to hold the die set during the extrusion process. It is formulated with advanced technology to provide superior support and reduce die wear.

FUNCTION

- The Fixed Dummy Block is used to hold the die set during the extrusion process. It is formulated with advanced technology to provide superior support and reduce die wear.

REPLACEMENT RING

The Replacement Ring is a reworked, water based lubricant designed for extrusion of aluminum alloys. It is formulated with advanced technology to provide superior lubrication and reduce die wear.

BILLET LUBRICATION



PURPOSE

- The Billet Lubrication is designed to lubricate the billet during the extrusion process. It is formulated with advanced technology to provide superior lubrication and reduce die wear.

FUNCTION

- The Billet Lubrication is used to lubricate the billet during the extrusion process. It is formulated with advanced technology to provide superior lubrication and reduce die wear.

LIQUID BILLET LUBRICANT SYSTEM

The Liquid Billet Lubricant System is a reworked, water based lubricant designed for extrusion of aluminum alloys. It is formulated with advanced technology to provide superior lubrication and reduce die wear.

SHEAR BLADES



SHEAR BLADE CONDITION

The Shear Blade Condition is designed to maintain the condition of the shear blades during the extrusion process. It is formulated with advanced technology to provide superior maintenance and reduce die wear.

FUNCTION

- The Shear Blade Condition is used to maintain the condition of the shear blades during the extrusion process. It is formulated with advanced technology to provide superior maintenance and reduce die wear.

STEMS

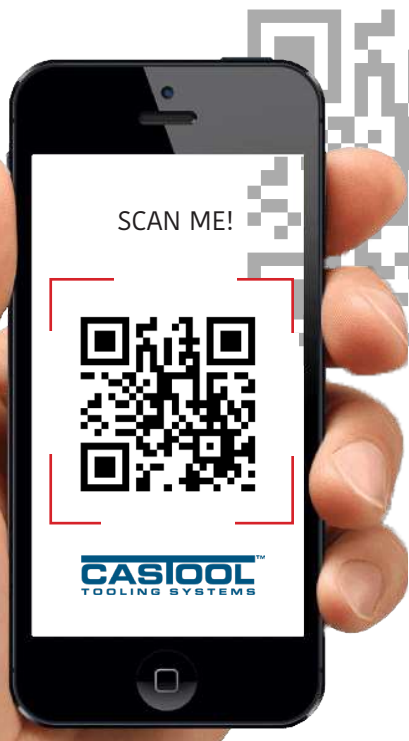


PURPOSE

- The Stems are designed to hold the die set during the extrusion process. They are formulated with advanced technology to provide superior support and reduce die wear.

FUNCTION

- The Stems are used to hold the die set during the extrusion process. They are formulated with advanced technology to provide superior support and reduce die wear.



BETTER PROFILES FASTER

OPERATION

The operation of the extrusion process is optimized for better profiles and faster production. This is achieved through the use of advanced technology and optimized parameters.

PRODUCTION

The production of the extrusion process is optimized for better profiles and faster production. This is achieved through the use of advanced technology and optimized parameters.

THE PERFECT DIE

The Perfect Die is a reworked, water based lubricant designed for extrusion of aluminum alloys. It is formulated with advanced technology to provide superior lubrication and reduce die wear.

BETTER PROFILES FASTER
BROCHURES AND DATA SHEETS OF OUR PRODUCT
AVAILABLE

www.castool.com

Scan me through your smart phone camera!

DIE CASTING & EXTRUSION

17-18
MARCH
2021

**VIRTUAL ANNUAL MEETING & LEADERSHIP
CONFERENCE**
LIVE VIRTUAL EVENT



**BOOTH
629**

1-2
SEPTEMBER
2021

ALUMINUM USA 2021
Kentucky International Convention Center
Louisville, USA

**BOOTH
724**

4-6
OCTOBER
2021

DIE CASTING CONGRESS & EXPOSITION
Indiana Convention Center
Indianapolis, USA



METALEX

METAL WORKING INDUSTRIES
MACHINES-TOOLS, INDUSTRIAL
ENGINEERING,
TRADE SHOW BY INDUSTRY

**BOOTH
BA-40**

18-21
NOVEMBER
2021

METALEX THAILAND 2021
Bangkok International Trade & Exhibition Centre
(BITEC), Bangkok, Thailand

**BOOTH
509**

10-13
MAY
2022

**TWELFTH INTERNATIONAL ALUMINUM EXTRUSION
TECHNOLOGY SEMINAR & EXPOSITION**
Hyatt Regency, Orlando, Florida, USA



INTERNATIONAL TEAM

CASTOOL

Dan Dunn	<i>Sales Director</i>
Krystean Rose	<i>Sales Manager Americas</i>
Keattikhun Chaichana	<i>Sales Manager Asia</i>
Adam Boontra	<i>Sales Manager Europe</i>
Glenn Titmuss	<i>Sales Coordinator APAC</i>
Andre Iulianetti	<i>Product Specialist North America</i>
Jean Dembowski	<i>Commercial Manager</i>
Tanmanun Tiantip	<i>Commercial Supervisor</i>
Christine Kaschuba	<i>Customer Service</i>
Sue Lotton	<i>Customer Service</i>
Sue Su	<i>Customer Service</i>
Keona Kirwan	<i>Customer Service</i>
Phudis Phollawan	<i>Customer Service</i>
Ploy Robbins	<i>Marketing Director</i>

NORTH AMERICA

Jon Veenstra	<i>JW Industries LLC</i>
Sebastien Deroy	<i>Sea Bass Outdoors</i>
Ron Steininger	<i>R-Bet Sales Inc</i>
Sam Durbin	<i>R-Bet Sales Inc</i>
Tom Boyd	<i>Boyd Screenprinting Technologies, Inc</i>
David Holder	<i>DEH Consulting LLC</i>

LATIN AMERICA

Valentin Meneses	<i>Kautec America</i>
Oswaldo Lomas	<i>Casmet</i>
Alberto Forcato	<i>Forcato Tecnologia</i>
Carlos Maciel	<i>Carlos Alberto Maciel Garciduenas</i>

EUROPE

Emmanuel Bach	<i>Comexale</i>
Olivier Druhen	<i>Comexale</i>
Bertrand Schnell	<i>Comexale</i>
Emmanuel Mandrelli	<i>Comexale</i>
Pascal Schorung	<i>Comexale</i>
Sascha Padovan	<i>HPDC Technology GmbH</i>
Jakub Jasiewicz	<i>KDO Komponenty Dla Odlewnictwa</i>
Edgar Seufert	<i>Schemlzm Metall</i>
Jurgen Barz	<i>Schemlzm Metall</i>

UNITED ARAB EMIRATES

Emmanuel Mandrelli	<i>Comexale</i>
---------------------------	-----------------

ISRAEL

Tuvia Kornfield	<i>NTK Plant Management</i>
------------------------	-----------------------------

TURKEY

Tuvia Kornfield	<i>NTK Plant Management</i>
------------------------	-----------------------------

SOUTH AFRICA

Olivier Druhen	<i>Comexale</i>
-----------------------	-----------------

ASIA

JAPAN

Shigeyoshi Takagi	<i>Techno Consul Benchmarks</i>
Tetsuya Ishida	<i>Tandem Technologies</i>
Yasunori Ito	<i>KBS Kubo Manufacturing Co</i>
Nami Ito	<i>KBS Kubo Manufacturing Co</i>

KOREA

JH Song	<i>ANK Ltd</i>
SW Song	<i>ANK Ltd</i>

TAIWAN

Jack Lee	<i>Shiny Lee</i>
-----------------	------------------

CHINA

Daniel Cheng	<i>OEA Bridge Link</i>
Long Shun Cheng	<i>OEA Bridge Link</i>
Tony Chein	<i>OEA Bridge Link</i>

THAILAND

Manu Mekdhanasarn	<i>Siam Anglo Alloy Co.Ltd</i>
Patcharee Parkong	<i>Siam Anglo Alloy Co.Ltd</i>

VIETNAM

Manu Mekdhanasarn	<i>Siam Anglo Alloy Co.Ltd</i>
Patcharee Parkong	<i>Siam Anglo Alloy Co.Ltd</i>
Tran Thi Thanh Thuy	<i>Thang Long Mechanics Equipment Co</i>
Mike Luu	<i>Carbon Group</i>

INDONESIA

Yovinus Krisananto	<i>PT Willisindomas Indahmakmur</i>
---------------------------	-------------------------------------

MALAYSIA

Manu Mekdhanasarn	<i>Siam Anglo Alloy Co.Ltd</i>
Patcharee Parkong	<i>Siam Anglo Alloy Co.Ltd</i>

SINGAPORE

Manu Mekdhanasarn	<i>Siam Anglo Alloy Co.Ltd</i>
Patcharee Parkong	<i>Siam Anglo Alloy Co.Ltd</i>

INDIA

Sachin Kumar	
---------------------	--

AUSTRALIA/NEW ZEALAND

Doug Loader	<i>Extrusion Machine Co New Zealand</i>
Glenn Titmuss	<i>GT Ex-Press Pty.Ltd</i>