

NEWSLETTER

SUMMER
2020

We hope you and your family are doing well during these challenging times. In just a few short months our world has completely changed, with many people personally impacted by COVID-19. Despite this, we remain resilient, showing renewed compassion toward our friends and neighbors while continuing to take the right steps to ensure the safety of our teams and guests.

We may not know when this will all end but we do know that we remain committed to safety while supporting our customers.

Be well and stay safe

CASTOOL



WORK-SHARING PROGRAM COVID-19

FROM : EMPLOYMENT AND SOCIAL
DEVELOPMENT CANADA

"Work-Sharing (WS) is a program that helps employers and employees avoid layoffs when there is temporary decrease in business activity beyond the control of the employer. The program provides Employment Insurance (EI) benefits to eligible employees who agree to reduce their normal working hours and share the available work while their employer recovers. Work-Sharing is an agreement between employers, employees and the Government of Canada"

KEY PROGRAM FEATURES

- ✓ **WS unit** A WS unit is a group of employees with similar job duties who agree to reduce their hours of work over a specific period of time
- ✓ **Equal sharing of work:** All members of a WS unit agree to reduce their hours of work by the same percentage and to share the available work
- ✓ **Expected work reduction:** A WS unit must reduce its hours of work by at least 10% to 60%. The reduction of hours can vary from week to week, as long as the average reduction over the course of the agreement is from 10% to 60%
- ✓ **Agreement length and extension:** A WS agreement has to be at least 6 consecutive weeks long and can last up to 26 consecutive weeks. Employers may be able to extend their agreements up to total of 76 weeks.

CASTOOL : We would like to introduce

CASTOOL TOOLING SYSTEMS

CANADA

Cory initially 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.

In June 2020, he started full time in CAD Design. Many of Castool's employees have done similar.



Cory Brear
CAD Design
Castool Tooling Systems

CASTOOL 180

THAILAND

Suksawat joined in Castool 180 in May 2020. He has experience with various industrial products and working for Japanese companies. As most are aware, the Japanese have had a large influence on global manufacturing, especially the automotive industry.

Suksawat is fluent in Japanese, Thai and English and is very familiar with Japanese quality and manufacturing cultures. I am sure he will help us better work with our Japanese customers.



Suksawat Makaew
Process Manager
Castool180

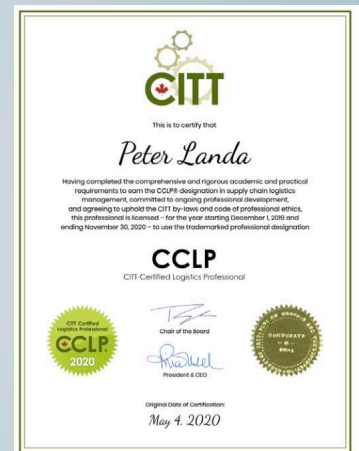
CONGRATULATION



Peter Landa
Supply Chain
Castool Tooling Systems

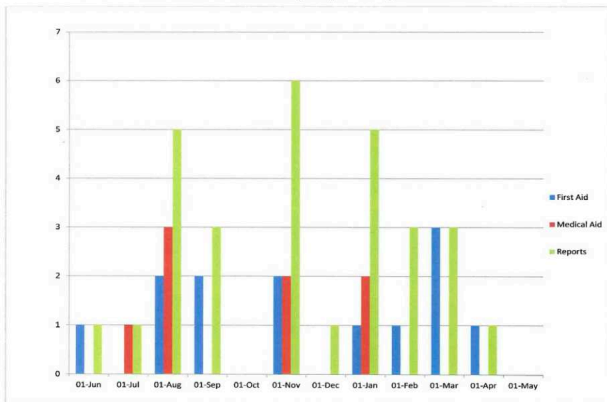
Peter joined Castool in Feb 2014. He has supervised Castool's global logistics for 6 years. Castool is a complex company, because of the diversity of products (weight and materials), customers and countries that we ship to. Castool ships products that can weigh from several grams to 20,000 kgs to 55 countries.

Congratulations of your newest certiciate and thank you for your help getting our products to our customers on-time.



OCCUPATIONAL HEALTH AND SAFETY

Health and Safety Injuries per Month



Castool achieved another medical accident free month in May. We have now gone over 4 months without a medical accident this year. A good collective effort!

Jim Birnie
Health & Safety
Coordinator



2020 MEDICAL ACCIDENT INCENTIVE PLAN

Congratulations!

Castool had their first safety draw for the incentive program for 3 consecutive months ending April 30, 2020. The prize is \$1,600 to be shared by 8 individual.

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

The 8 winners are:

1. Wang Nian Xing (Richard)
2. Regan Brock
3. Jaipersaud Deodat
4. Mavec Andrew
5. Gill Harjiv
6. Mac Artur Jamie
7. Conn Peter
8. Molloy John



CASTOOL180 - THAILAND



CASTOOL TOOLING SYSTEMS - CANADA



Many people have been asking us about the status of Castool 90. We have been delayed by Covid-19 by about 3 months, but we are still continuing. We have final drawings, and are in process of receiving building quotations. We expect to break ground by September and to be ready for production in Spring 2021. Several pieces of equipment, such as boring mills, multi axis lathes and milling machines, and gun drills have been ordered.

WE WILL HAVE MANUFACTURING FACILITIES ON 3 CONTINENTS BY 2021:



TRAINING AND SUPPORT

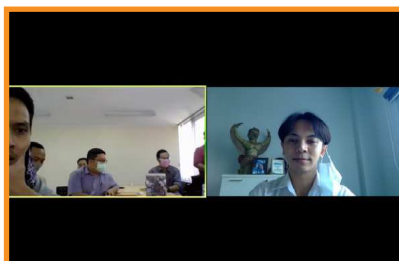
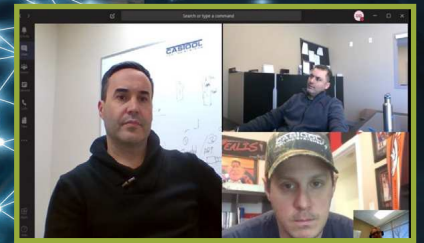


Castool is currently using Microsoft Teams for online meetings and training seminars. New interactive technology will continue to play a significant role during and after the COVID-19 pandemic.

WE ARE HERE FOR YOU :

Although some things remain uncertain, this is for sure:

“We are ready and willing to help with your tooling systems when the time is right.”



CASTOOL HAS ADOPTED MICROSOFT TEAMS AS THE PLATFORM FOR VIDEO CONFERENCING.

Microsoft Teams, also referred to as simply Teams, is a unified communication and collaboration platform that combines persistent workplace chat, video meetings, file storage (including collaboration on files), and application integration. Teams allows communities, groups, or members to join through a specific URL or invitation sent by a team administrator or owner. Teams for Education allows administrators and teachers to set up specific meetings for classes, professional learning communities (PLCs), staff members, and everyone



MEETING

Meetings in Teams include audio, video, and screen sharing. They're one of the key ways to collaborate in Teams. And you don't need to be a member of an organization (or even have a Teams account!) to join a Teams meeting—just look in the invitation for instructions about calling in.

RESEARCH CORNER

BY YAHYA



DIE HEATING SYSTEMS FOR EXTRUSION OF HARD ALLOYS

- Effect of alloy on extrusion process
- Simulation study
- Effect of die heating
- Heated Die Slide?
- Castool offers
- Thermal simulation



Effect of alloy on extrusion process

Alloy	Chemical Composition					Extrusion rate		Temperature control window	Exit speed (ft/min)	Cycle time (minutes)	Press pressure (ksi)	Heat generation (kW)	Heat Dissipation required (kW)
	Si	Mg	Mn	Cl	Zn	°C	°F						
Soft	1300	0.1	0.1	0.1	0.1	400	750	200-280	3.5	90	45	25	
	3000	1.7	0.1	0.1	0.05	410	770	280-330	1.2	70	33	37	
	6000	0.1	0.2	0.1	0.05	420	785	330-380	1.2	80	35	39	
Medium	9000A	0.1	0.1	0.1	0.1	430	805	380-430	0.9	60	29	33	
	6061	0.1	0.1	0.1	0.1	440	820	430-480	0.8	50	25	29	
	7050	0.1	0.1	0.1	0.1	450	840	480-530	0.7	40	20	24	
Hard	2024	0.1	0.1	0.1	0.1	460	860	530-580	0.6	30	15	19	
	7075	0.1	0.1	0.1	0.1	470	880	580-630	0.5	20	10	14	
	7050	0.1	0.1	0.1	0.1	480	900	630-680	0.4	10	5	7	

Due to super-slow ram speeds during the extrusion of hard alloys such as AA7075, the amount of heat dissipated through the container is bigger than deformation heat generated in the container so that there needs to be heat added to the container to compensate extra heat dissipated.

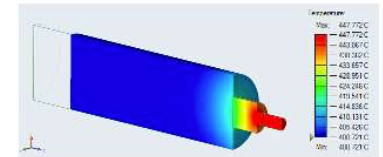
The same scenario is valid for die so that dies also continuously cool down during the process due to heat dissipation through the die ring and bolster.

2020 05 05

CASTOOL Tooling Systems

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Simulation study



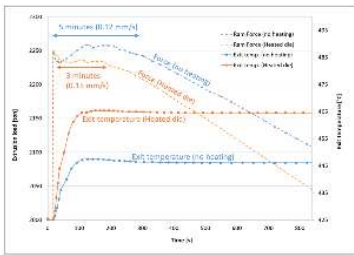
Effect of die heating on temperatures and loads are studied by simulating the extrusion of AA7075. Process parameters: Billet preheat: 425°C, Container set point: 400°C, Press: 7", 2250 ton, Extrusion ratio: 35, Die temperature: 450°C for heated die and 425°C for die with no heating system.

2020 05 05

CASTOOL Tooling Systems

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Effect of die heating



Using die heating system to keep the die at proper temperature have two main effects:

1. It helps with the easier material flow so that the press spend less time at peak load and starts to accelerate faster and it significantly reduces the cycle time. On the other hand, increasing the die temperature by 25°C will decrease the extrusion load and let the extrusion ram at least 25% faster at the break through (0.15 mm/s for heated die vs 0.12 mm/s for no heating).
2. The exit temperature can be controlled much easier because due to slow process, the length of the time that material spends inside the die while passing through it is long enough for highly conductive aluminum alloy to get the temperature of the die. So that the material parts the die with a temperature close to die temperature. Increasing the die temperature from 425° to 450°C could increase the exit temperature from 440°C to 465°C. 465°C is the solvus temperature for AA7075 and having exit temperature at or above solvus is desirable as long as it is not above melting point.

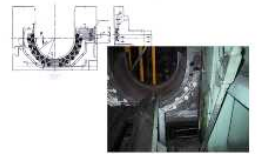
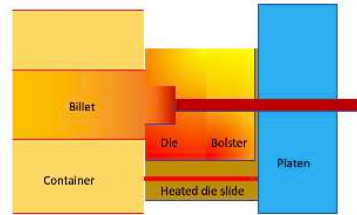
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Heated Die Slide?

Heated Slide solves only a part of the problems



Heated die slide can only heat the bottom half of the die. Due to heat dissipation through the bolster to cold platen, the top portion of the die will cool down during the process.

2020 05 05

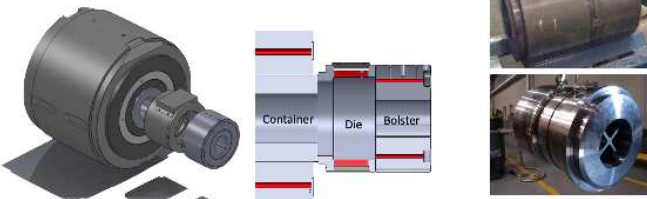
CASTOOL Tooling Systems

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Castool offers

Band heaters in the die ring: capable to heat top and bottom of the die.

Cartridge heaters in bolster: heat up the bolster to provide uniform die temperature.



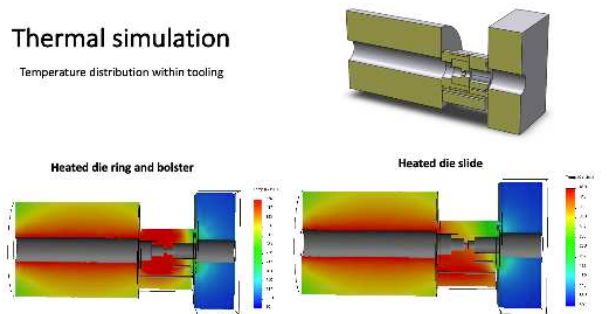
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Thermal simulation

Temperature distribution within tooling



2020 05 05

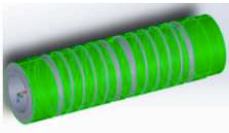
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CONTAINER AIR COOLING

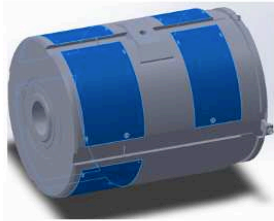
Theory and Experiment

Air cooling at liner OD



Air contact area:
~2300 in²

QR container with 3 air-cooled zones



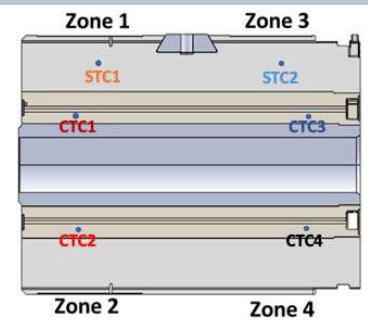
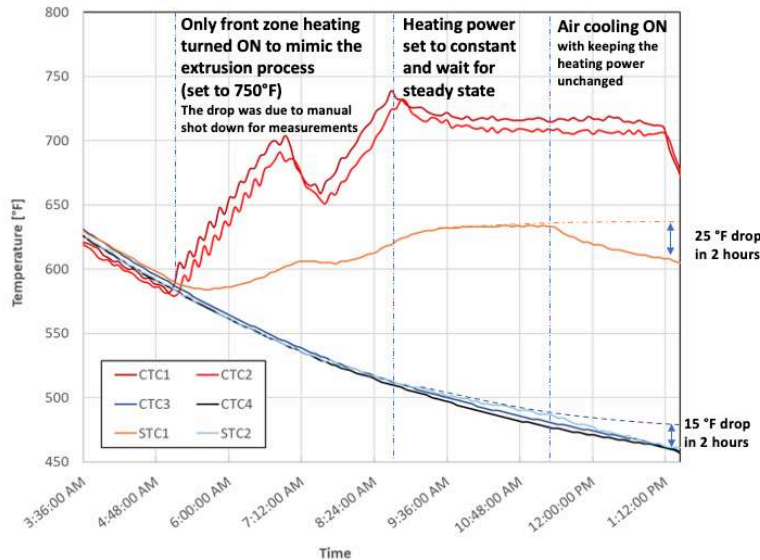
Air contact area:
>7000 in²

Subliner ID surface area	3316 in ²
Contact area (Liner OD / Sub-Liner ID)	2200 in ²
Contact area lost	850 in ²
Liner OD Avg temperature	688 °F
Sub-Liner ID Avg temperature	682 °F
Average heat transfer at Liner-SubLiner contact surface	27 kW/m ²
Contact heat transfer lost do to spirals	11 KW
Heat extraction by forced air through spirals	22 KW
Assumptions: Convection coefficient: 80 W/m ² °C Avg. temperature difference: 200°C	
Net heat extraction capacity	11 KW

Heat extraction through Liner OD vs Body OD

Heat extraction through fins on the body OD can remove more than 30 KW.

Temperature drop after turning the air cooling ON While keeping the heating power unchanged



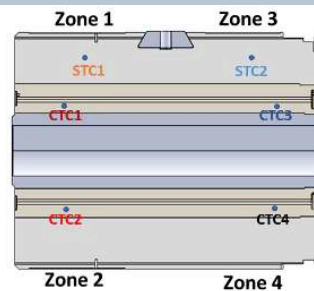
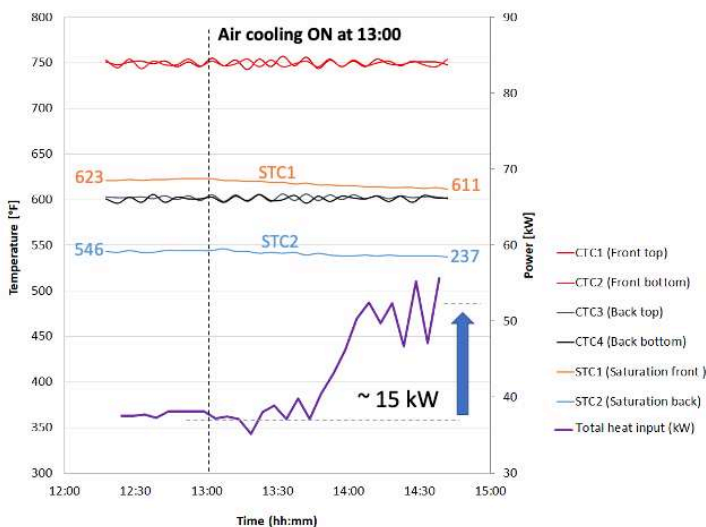
Zone	Air flow [l/min]	Air exit temperature [°F]	Estimated air cooling heat extraction power [kW]
Zone 1	400	500	9.33
Zone 2	400	500	9.33
Zone 3	500	420	9.44
Total	1300		28.11

Main air supply:

- 90 psi pressure
- 0.5 inch diameter

AIR COOLING TEST
(Method #1 - Constant Heating Power)

Consumed power increase after turning the air cooling ON To compensate for heat removed by air cooling



Zone	Air flow [l/min]	Air exit temperature [°F]	Estimated air cooling heat extraction power [kW]
Zone 1	360	450	7.33
Zone 2	430	450	8.8
Zone 3	420	350	6.35
Total	1210		22.48

Main air supply:

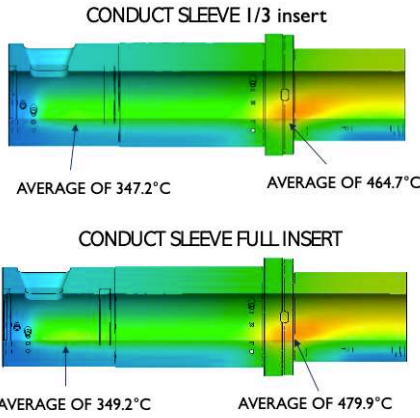
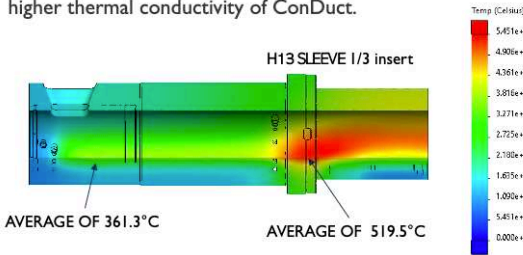
- 90 psi pressure
- 0.5 inch diameter

AIR COOLING TEST
(Method #2 - Power measurement)

SHOT SLEEVE PROJECT

When comparing a full insert sleeve with the two 1/3 insert models, the ConDuct sleeve with 1/3 insert and full insert demonstrate the lowest bore temperatures under the pour hole.

However, the ConDuct sleeve with 1/3 insert maintains the lowest temperature near the die end. This is a result of the higher thermal conductivity of ConDuct.

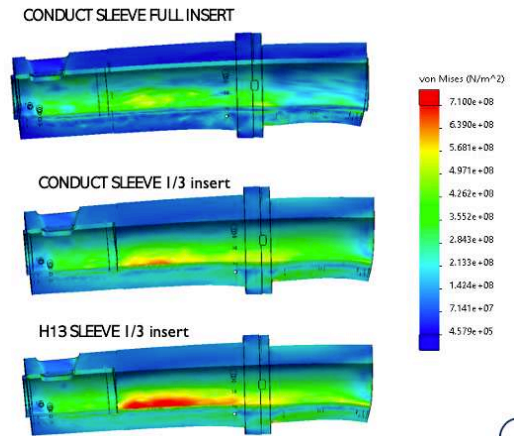


FULL INSERT VS 1/3 INSERT TEMPERATURE

FULL INSERT VS 1/3 INSERT VON MISES STRESSES

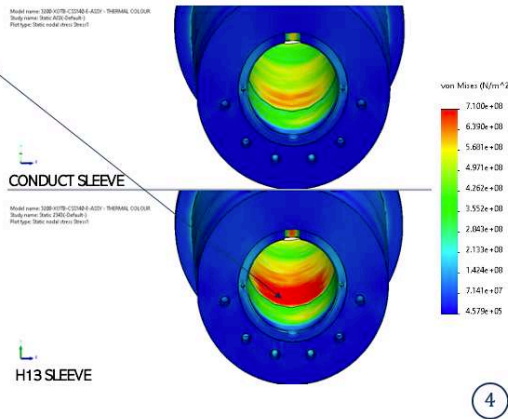
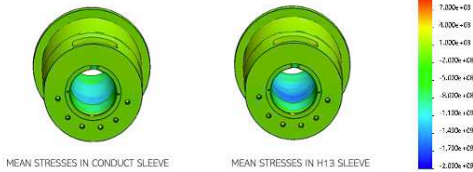
When comparing a full insert sleeve with the two 1/3 insert models, the full insert sleeve demonstrates the lowest stress in all bore surfaces. This is a result of the low temperature gradient maintained, as well as the full coverage of the insert.

All models experience relatively the same amounts of deformation. However, the full insert model undergoes the least amount.



The stresses at the surface at the end of the sleeve insert for the H13 sleeve are much higher than the stresses in the ConDuct sleeve.

The stresses in both sleeves reach really high levels, around the yield strength of ConDuct (710 MPa). This does not serve to be a problem as when looking at the mean stresses in these areas, the values of the stresses are negative, meaning the stresses are compressive. Therefore, even if cracks form, the cracks will not propagate – which is not a concern.



VON MISES STRESSES

THERMAL GRADIENT

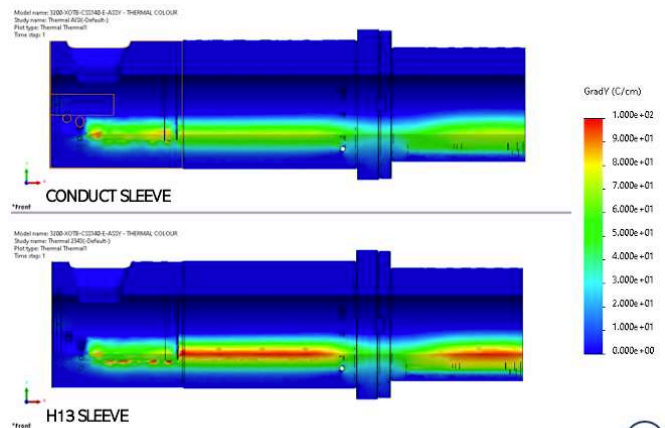
The higher amount of stress at the surface at the end of the sleeve insert in the H13 sleeve model is a result of its higher thermal gradient.

Thermal stress is directly proportional to the thermal gradient as shown in the equation:

$$\sigma = E\alpha \frac{dT}{dy}$$

Thermal stress ← Young's Modulus → Thermal expansion coefficient → Thermal gradient

This justifies the stress behaviour in the model.



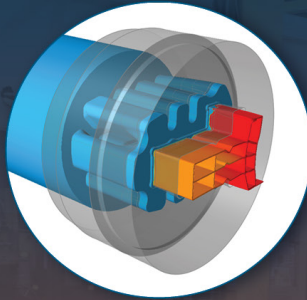
BETTER PROFILES FASTER

TRC/TCX DIE HEATERS

HEAT DIES ACCURATELY,
SAFELY AND QUICKLY



SP CE
APPROVED

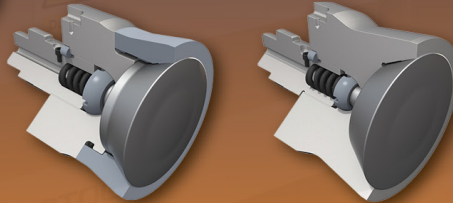


PERFECT DIE

Requires the die and liner temperature to be stable from the first to the last billet.

DUMMY BLOCKS

H-13 (1.2344) AND TUFF-TEMPER



RRB

MARATHON

QR CONTAINERS

MAINTAIN STABLE LINER TEMPERATURE
BY DISSIPATING HEAT AS GENERATED
BY THE PROCESS



TOOLING SPECIALISTS

Relines
Stems
Clean-Out Blocks
Shear Blades

Billet Shears
Die Rings (Reclaimed)
Piercing Mandrels
Indirect Tooling

CASTOOL
TOOLING SYSTEMS®



sales@castool.com
www.castool.com



SCHMOLZ + BICKENBACH
International



REPRINT : LIGHT METAL AGE, JUNE 2020

EXTRUSION	SOFT	MEDIUM	HARD	EXTRA HARD
Aluminum Alloy	1100/1060/ 1350 3003/3004	6063 6005A 6061	6082 HS6S 7003	7075/7B04 7178 2011/2014/2024 5083/5086
Container	3 pc	2 pc	3 pc	3 pc (H13 Sub Liner)
Dummy Block	H13 Marathon	H13 RRB	H13 Marathon	TT Marathon
Extrusion exit speed	High (>100 ft/min)	Medium to High (30- 250 ft/min)	Medium (15-70ft/min)	Slow (3-7ft/min)
Ram speed	8-20 in/min	15-40 in/min	8-20 in/min	2-8 in/min
Exit temperature window	Large	Medium (6061:Small)	Small (7003:Medium)	Small
Load	Low	Medium	High	Extra High
Extrusion Ratio	High	Medium	Medium	Low
Profile complexity	Thin walled (micro-tube,...)	Medium to High	Medium	Low
Container taper(F/cm)	0.5	1	0.5	No taper

Compact, On-Line High Accurate IR Pyrometer for Body Temperature Measurement

CE 0°C to 50°C

FeverSPOT EL

FeverSPOT EL is a rugged and compact IR Pyrometer especially designed for human body temperature measurement with high accuracy of 0.3°C. Its mustering range from 0°C...50°C.

FeverSPOT EL gives digital output for communication and data logging. The pyrometer is equipped with a Inbuilt LCD display with red & green back lights which shows real time temperature and counting the number of peoples. User can change the unit of temperature °C/°F. Temperature hold time, Set point, Reset the storage data, Response time.

Technical Specifications

Model	FeverSPOT EL
Temperature Range (Analog sub-range adjustable)	0°C to 50°C
Spectral Range	8 - 14 μm
Photodetector Type	Thermopile
Distance to Spot Size Ratio	15:1
Emissivity (ε)	0.1 to 1.2 adjustable
Response Time	100 msec adjustable upto 10 sec
Accuracy	0.3°C
Repeatability	0.2°C
Resolution	0.1°C
Digital Output	USB 2.0, RS-232/RS-485 interface card (Optional) *At a time only one digital output possible
Relay Output	Relay Output with hysteresis 60V DC/42V AC RMS,0.4A
Operating Temp. Range	0°C.....50°C
Storage Temp. Range	-20°C...70°C
Adjustable Parameters and Features via Software	Emissivity, Response Time, Unit Of Temperature(°C/°F), Relay Set point, Temperature hold time etc.
Power Supply	Two options are available: (User can select any one option) (1) 5V USB Adaptor (2) 12 - 24V DC supply
Power Consumption	Max 1.2 watt
Protection Class	IP65
Housing	Stainless Steel
Operating Humidity	10-95%, Non-Condensing Conditions
Weight & Dimensions	200g Dia= Ø25mm; L=103mm



Features

- Temperature range from 0°C to 50°C
- Inbuilt data storage of counts with temperature
- 15:1 optics
- Two back lights (green & red) status indications and a buzzer for alarm indication
- Spectral range 8...14 μm
- 100 ms response time adjustable upto 10 sec
- USB 2.0 Digital output
- RS-232/RS-485 Serial interface card
- Relay output\
- User friendly PC software for communication

Standard Scope of Supply

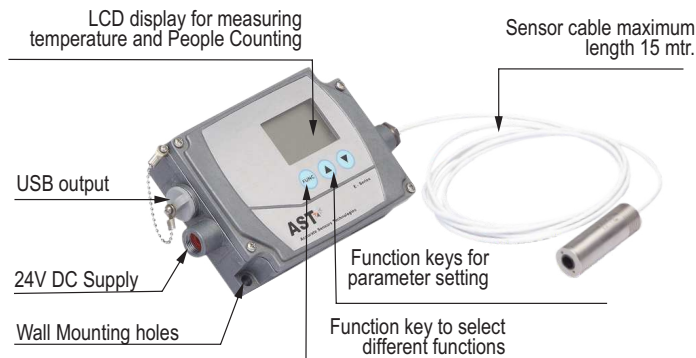
- Pyrometer with 3 mtr. long connection cable
- Relay output
- USB cable
- Calibration Certificate, Software & Operation Manual.

Optional

- Extra cable lengths
- Mechanical and Electrical Accessories
- RS-232/RS-485 communication card

Applications

- Human Body Temperature Measurement



Normal Temperature

Fever Condition

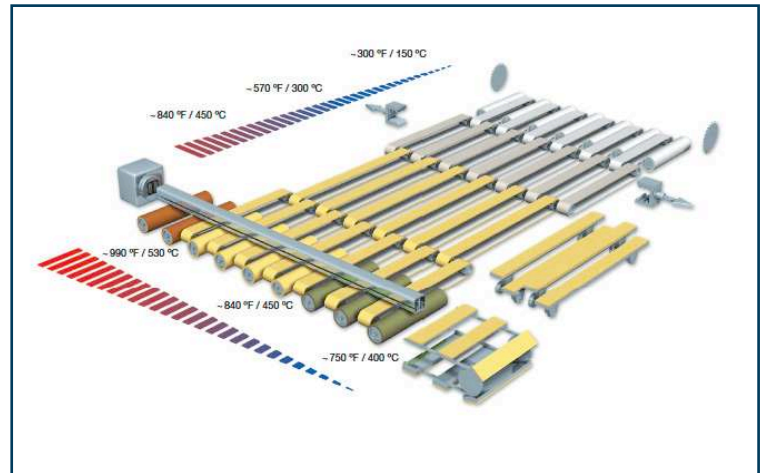
We measure accurate temperature in extreme conditions

Technical Needle Felts for Innovative Solutions.

At BWF Protec, sound technical expertise is combined with innovative spirit and high-tech tradition. The result: ground-breaking product developments and highest quality needle felts. Partnership and cooperation with the customer is the basis for mutual success.

BWF Protec collaborates closely with its customers in developing and producing tailored products for special fields of application. Ranging from initial consultancy to the finished product, you can rely on precise expertise, utmost reliability and optimum quality.

This overall approach and our unique products inspire our customers, makes us long-standing partners in addition to a market leader that decisively influences the sector.



BWF EXTRU-LINE® Belts

Seamless or Laminated - Exactly to Your Needs

Endless needled belts are characterized by high durability and abrasion resistance whilst maintaining a soft surface. These characteristics provide maximum protection for aluminum profiles throughout the cooling process.



IN ADDITION TO ENDLESS BELTS WE OFFER DIFFERENT VARIATIONS/FINISHES:

- belts with metal clipper joints for easier assembling
- belts with tracking guides
- belts with backside coatings
- timing belts with heat-resistant needle felt top layer for the transport of heavy weight extrusion
- special conveyor belts with anti-static properties



Endless belts in various dimensions and qualities.

MATERIAL	COLOR	COMPOSITION	TEMPERATURE	RESISTANCE**	APPLICATION	
			Continuous	Peaks		
			F / °C	F / °C		
PBO-KR: - top layer - bottom layer	orange	PBO para-aramid	~ 660 / 350	~ 1020 / 550	initial zone	
	yellow		~ 390 / 200	~ 930 / 500		
KR	yellow	para-aramid	~ 390 / 200	~ 930 / 500	run-out, pickup, cooling zones	
KR-SFO	green	para-aramid/ preoxidised PAN (blend)	~ 390 / 200	~ 840 / 450	run-out, cooling zones	
NO	cream	meta-aramid	~ 360 / 180	~ 460 / 240	transfer, stretching, spacers	
PE	white	polyester	~ 300 / 150	~ 360 / 180	cold zones, packing station	

* Special qualities on demand

** Data based on the determination and measurements of virgin fabrics and are subject to usual tolerances. This information does not express or imply any guarantee and the right is reserved to make any modification without notice

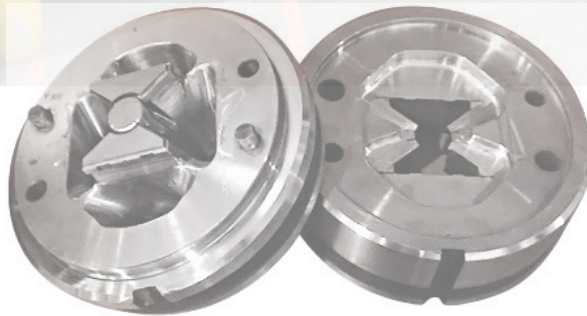
NO GRAPHITE OR PETROLUM BASED PRODUCT



TOOL RELEASE

THIS RELEASE AGENT IS RECOMENDED FOR DIE, BILLET AND DUMMY BLOCK APPLICATIONS

POWDER AEROSOL LIQUID



CONTAIN

Acetone
Liquefied Petroleum gas
Ethyl Alcohol
Boron Nitride



HAZARD STATEMENTS

Extremely flammable aerosol.
Contains gas under pressure; may explode if heated.
Causes eye irritation.
Harmful if inhaled.
May cause respiratory irritation.
May cause drowsiness or dizziness.



BENEFITS

Reduces Friction
Protects Bearings
Resistant to high Temperature
Reduces Scrap
Clean

DIE CASTING & EXTRUSION

14-17
SEPTEMBER

AEC MANAGEMENT CONFERENCE

Sheraton Nashville Downtown
Tennessee, USA



ALUMINUM
EXTRUDERS
COUNCIL

AEC MANAGEMENT CONFERENCE
BUILDING GROWTH
FUELING OUR FUTURE
TN, USA



MACHINERY, INDUSTRIAL
TECHNOLOGY/METALS,
METAL PRODUCTS, HARDWARE, TOOL

BOOTH

12-14
NOVEMBER

JAPAN DIE CAST CONGRESS & EXPOSITION 2020

Pacifico Yokohama, Japan

TENTATIVE

DIE CASTING CONGRESS & TABLETOP

DeVos Center in Grand Rapids
Michigan, USA

2020 DIE CASTING CONGRESS & TABLETOP

OCTOBER 20-22
DEVOS CENTER IN GRAND RAPIDS
MI, USA



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

BOOTH
BA-40

18-21
NOVEMBER

METALEX THAILAND 2020

Bangkok International Trade & Exhibition Centre
(BITEC), Bangkok, Thailand

BOOTH
509

10-13
MAY
2021

TWELFTH INTERNATIONAL ALUMINUM EXTRUSION TECHNOLOGY SEMINAR & EXPOSITION

Hyatt Regency, Orlando, Florida, USA



BOOTH
12L01

18-21
MAY
2021

ALUMINIUM 2020

13th World Trade Fair & Conference
Messe Dusseldorf, Germany

INTERNATIONAL TEAM



CASTOOL

Dan Dunn Sales Director
Krystean Rose Sales Manager North America

Glenn Titmuss Sales Coordinator APAC
Keattikhun Chaichana Product Specialist APAC
Andre Iulianetti Product Specialist North America
Jean Dembowski Commercial Manager
Tanmanun Tiantip Commercial Supervisor
Christine Kaschuba Customer Service
Sue Lotton Customer Service
Sue Su Customer Service
Keona Kirwan Customer Service
Phudis Phollawan Customer Service
Ploy Robbins Marketing Director

NORTH AMERICA

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

LATIN AMERICA

Valentin Meneses Kautec America
Oswaldo Lomas Casmet
Alberto Forcato Forcato Tecnologia
Carlos Maciel Carlos Alberto Maciel Garciduenas

EUROPE

Emmanuel Bach Comexale
Olivier Druhen Comexale
Bertrand Schnell Comexale
Emmanuel Mandrelli Comexale
Pascal Schorung Comexale
Lars-Goran Nilsson TEL Nordic APS
Luciano Pedrini Techno Moulds
Jakub Jasiewicz KDO Komponenty Dla Odlewnictwa
Edgar Seufert Schemlzm Metall
Jurgen Barz Schemlzm Metall

UNITED ARAB EMIRATES

Emmanuel Mandrelli Comexale

ISRAEL

Tuvia Kornfield NTK Plant Management

TURKEY

Tuvia Kornfield NTK Plant Management

SOUTH AFRICA

Olivier Druhen Comexale

ASIA

JAPAN

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

KOREA

JH Song ANK Ltd
SW Song ANK Ltd
Tae Jean Hwang GS Tech SOolutions

TAIWAN

Jack Lee Shiny Lee

CHINA

Daniel Cheng OEA Bridge Link
Long Shun Cheng OEA Bridge Link
Tony Chein OEA Bridge Link

THAILAND

Manu Mekdhanasarn Siam Anglo Alloy Co.Ltd
Patcharee Parkong Siam Anglo Alloy Co.Ltd

VIETNAM

Manu Mekdhanasarn Siam Anglo Alloy Co.Ltd
Patcharee Parkong Siam Anglo Alloy Co.Ltd
Tran Thi Thanh Thuy Thang Long Mechanics Equipment Co

INDONESIA

Yovinus Krisananto PT Willisindomas Indahmakmur

MALAYSIA

Manu Mekdhanasarn Siam Anglo Alloy Co.Ltd
Patcharee Parkong Siam Anglo Alloy Co.Ltd

SINGAPORE

Manu Mekdhanasarn Siam Anglo Alloy Co.Ltd
Patcharee Parkong Siam Anglo Alloy Co.Ltd

INDIA

Sachin Kumar

AUSTRALIA/NEW ZEALAND

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