



Any die caster knows how to produce large, thin, convoluted aluminum castings for the automotive industry. It is already being done quite satisfactorily and profitably in large quantities. There are no secrets. Knowing how to do it and actually doing it, however, are two very different things. When theory is finally replaced by reality, the most fundamental precept of die casting can be found in the old adage: a chain is only as strong as its weakest link.

All Castool products promote energy conservation and are environmentally friendly.

SAFE • RELIABLE • LONG-LIFE • EFFICIENT • ECONOMICAL



MEXICO

MOROCCO

THAILAND

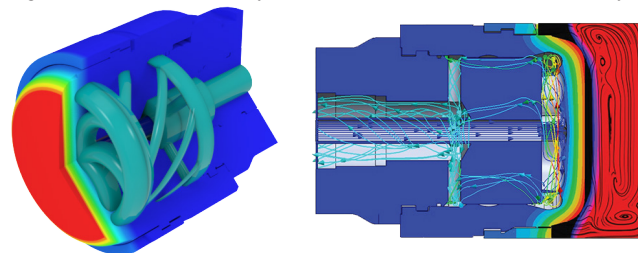
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08/2023

BETTER CASTINGS FASTER

CYCLE-TIME MATTERS

Conformal cooling is a technique that improves thermal management in die casting by using cooling channels that follow the tool shape. This can lower the die and plunger tip temperature, speed up the cooling phase and reduce cycle time, and enhance part quality.



Additive manufacturing, and 5/9 axis machines can create complex cooling channels for conformal cooling. Some materials, such as Con-Duct, may also help because they have higher thermal conductivity and toughness than tool steel.

CERTIFICATE OF REGISTRATION
Castool Tooling Systems
ISO 14001:2015

CERTIFICATE OF REGISTRATION
Castool Tooling Systems
ISO 9001:2015

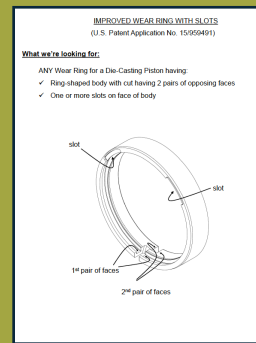
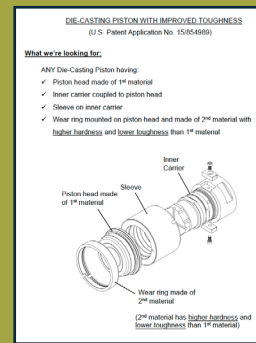
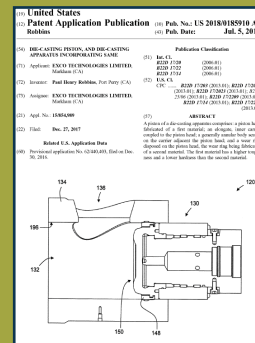
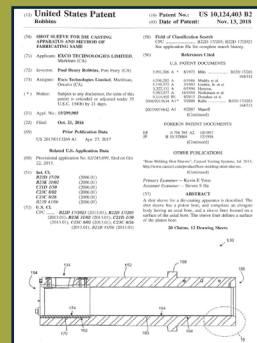
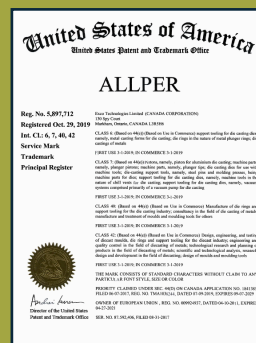
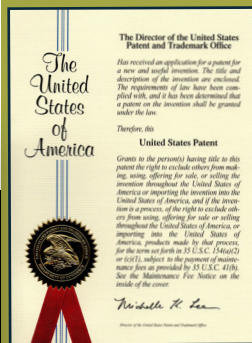
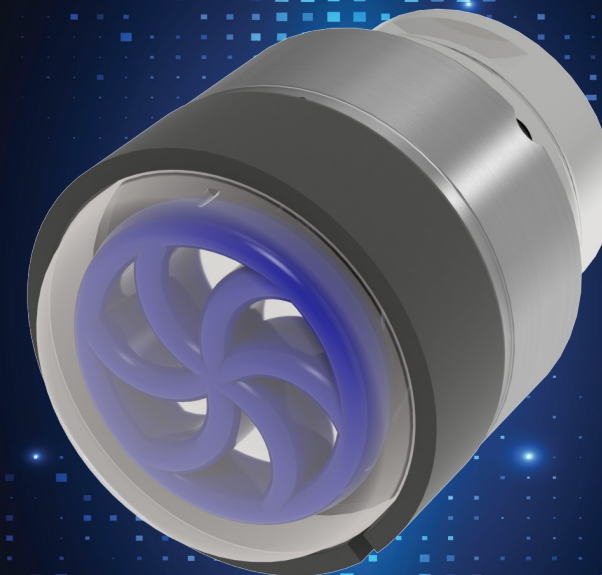
CERTIFICATE OF REGISTRATION
Castool Tooling Systems
ISO 45001:2018

ALLOY	Working hardness (HRC)	Hot strength	Toughness	Hot wear resistance	Thermal Conductivity (W/mk)	Cost
Con-Duct	34-38	●	●●●●●●	●	●●	○
H13 (1.2344)	38-52	●●●	●●●	●●	●	●
Tuff Temper	42-52	●●●●	●●	●●●●	●	●●
1.2367	42-52	●●●	●●●	●●●	●	●●
DieVar	37-50	●●●	●●●	●●●	●	●●
A25 Copper	29 (280 HB)	○	●●●●	○	●●●●●	●●●●●●●●
A45 Copper	--- (190 HB)	○	●●●●●	○	●●●●●●●●	●●●●●●
A52 Copper	27 (260 HB)	○	●●●●	○	●●●●●●●	●●●●●●●

Die Cast processes can vary widely. Alloy types, pressures, cycle times, size and lubrication can all play a role. Choosing the best material for each component of the tooling system can be challenging, at the same time as being cost competitive.

The chart lists the thermal conductivity, wear properties, temperature range and cost factor for several of the materials Castool uses.

DIE CAST



CASIOOL
TOOLING SYSTEMS™

CONFORMAL COOLING

PLUNGERS/LUBRICATION

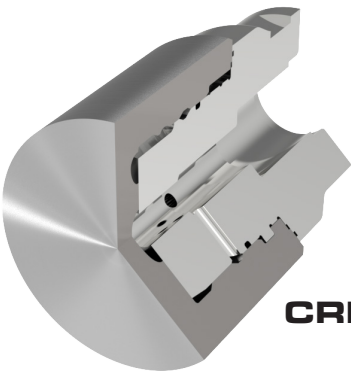
SHOT SLEEVES

VENTING

CDP-R

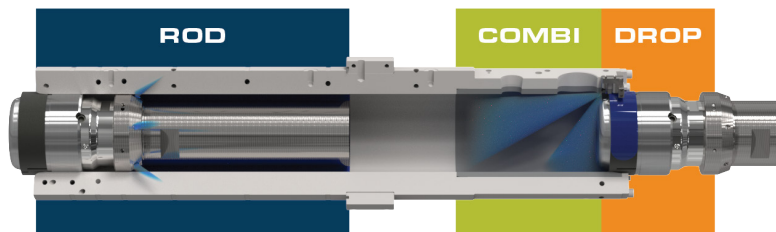


CRP-A



The plunger face of the CDP & CRP has cooling channels that follow its shape, allowing water flow to be closer to the heat source. This results in more than twice the contact area compared to Allper plungers, which improves heat dissipation. Moreover, Con-Duct has 80% better thermal conductivity than tool steel, and 4 times the toughness, making it a superior material for HPDC

CRP-R

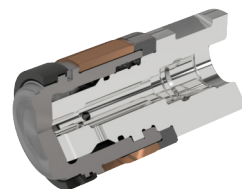


LUBRICATION SYSTEMS

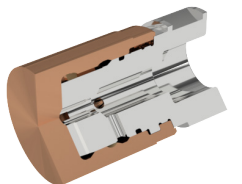
Controllers, Applicators and Lubricants



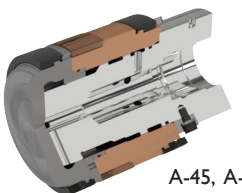
HIGH FLASH POINT
LOW VISCOSITY
BIODEGRADABLE



ABP-R



ARP-A



AMP-RVR

A-45, A-52, A-25, DIEVAR
H-13(1.2344) AND CON-DUCT

H-13 (1.2344), **TUFF-TEMPER**,
Vacuum Heat Treated, Nitrided
and PNO COATED

WATER-SADDLE
with LUBE-DROP



M-LOOP with CONFORMAL
DRILLED NOSE
with INSERT

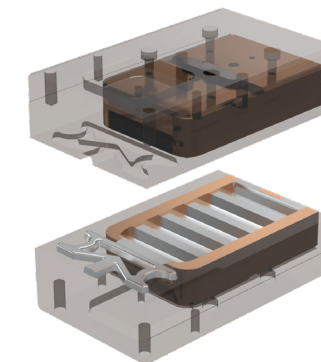
GUN-DRILLED
with INSERT,
and VACUUM PORT

GIGA PRESS TOOLING

Replaceable Coated Inserts,
Distributors, Sprue Bushings, Shot Blocks,
Spreaders and Welding Services Available

CHILL VENTS

INCREASED RECOVERY
REDUCED DOWNTIME
LONG LIFE



VACUUM CONTROL SYSTEMS



Reduces machine downtime,
scrap, production costs
and energy

CON-DUCT

SCHMELZMETALL
HIGH VACUUM COPPER SOLUTIONS

ALLPER
PLUNGER SYSTEMS

Swiss Steel Group
HOT WORK TOOL STEELS

Ipsen

NITREX

InterGuss
Gießereiprodukte GmbH