QUALITY SAFETY ENVIRONMENT

CAPACITIES / CAPABILITIES

Vertical Turning	74" dia x 72" (1880 mm dia x 1830 mm) 40 Ton
Horizontal Milling	80" x 80" x 100" (2032 x 2032 x 2540 mm) 40 Ton
CNC Turning	30" dia x 15' (762 mm dia x 4572 mm)
Drilling	20" dia x 70" (508 mm dia x 1778 mm)
Gun Drilling	2" dia x 70" (50.8 mm dia x 1778 mm)
Honing	20" dia x 100" (508 mm dia x 2540 mm)
Wire EDM	24" x 30" x 14" (609 mm x 762 mm x 355 mm)
Saw Cutting	32" x 32" (812 mm x 812 mm)
Heat Treatment	60" dia x 90" 20,000 lbs (1524 mm dia x 2285 mm)
Nitration	61" dia x 98.5" 13,200 lbs (1550 mm dia x 2500 mm)
Lifting	40 Ton
Design	Solidworks
Simulation	Thermal, Mechanical, Flow

Laboratory Services including Microstructure, Chemical Compostion & Material Characterization

QEC ALUMINUM EXTRUDERS COUNCIL MEMBER

EXCO®

NADCA CORPORATE MEMBER

CASTOOL™ TOOLING SYSTEMS 25

CASTOOL™ TOOLING SYSTEMS 90

CASTOOL™ TOOLING SYSTEMS 180

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THAILAND +66.38.345.188

WWW.CASTOOL.COM

08/2022

BETTER PREFERRED TOOLING FASTER

Alloy		Chemical Composition										Strength	Toughness	Tempering /Ageing Temperature (°C)	Critical Operational 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				●●	●●●●●●	540 (38 HRC) 600 (34 HRC) 630 (32 HRC)	490 550 580	42	75	Container body/Subliner (34-38 HRC) Plunger Tip (32-36 HRC)
Hot Work Tool Steel	L6 (1.2714)	Bal.	0.55	0.3	0.9	1.1	1.7	0.5	0.1			●●◖	●●●	530 (42 HRC) 570 (38 HRC)	480 520	35	75	Container body (38-42 HRC)
	H11 (1.2343)	Bal.	0.4	1	0.4	5		1.3	0.4			●●●	●●◖	630 (42 HRC) 650 (38 HRC)	580 600	26	100	Container subliner (38-42 HRC)
	H13 (1.2344)	Bal.	0.4	1	0.4	5		1.5	1			●●●◖	●●◖	620 (48 HRC) 630 (46 HRC) 650 (42 HRC) 660 (38 HRC)	570 580 600 610	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			●●●◖	●●●	595 (48 HRC) 605 (46 HRC) 620 (42 HRC) 640 (48 HRC)	545 555 570 590	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			●●●●	●●●◖	600 (48 HRC) 620 (46 HRC)	550 570	30	200	Container liner (46-48 HRC)
	1.2367	Bal.	0.37	0.3	0.4	5		3	0.6			●●●●	●●●	630 (48 HRC) 640 (46 HRC)	580 590	30	200	Shot sleeve Insert (46-48 HRC) Bore welding
	Tuff Temper	Bal.	0.36	0.3	0.4	5		3.8	0.8			●●●●●	●●	640 (48 HRC) 650 (46 HRC)	590 600	30	200	Shot sleeve Insert (46-48 HRC)
	Q10	Bal.	0.36	0.25	0.6	5		1.9	0.55			●●●●	●●●	610 (48 HRC) 620 (46 HRC)	560 570	30	200	Container liner (46-48 HRC)
	DAC3	Bal.	0.4	0.3	0.3	5		1.6	0.7			●●●●	●●●	600 (48 HRC) 620 (46 HRC)	550 570	30	200	Container liner (46-48 HRC)
Super Alloys	IN718	~20				19	52	3		5		●●●	●●●●	720 (44 HRC)	700	13	1500	Copper extrusion liner (40-44 HRC)
	A286	~50				15	25	1.3			2.3	●●	●●●●●	720 (34 HRC)	700	15	750	Copper extrusion liner
Stainless Steel	M303	Bal.	0.27	0.3	0.65	14.5	0.9	1				●●	●●●●●●●●●	540 (40 HRC) 570 (35 HRC)	490 520	23	300	Plunger holder
Copper Alloys	A25	1.5 Be, 0.15 Co, 0.15 Ni										●◖	●●●	320 (280 HB)	320	120	2400	Plunger Tip
	A45	2.5 Ni, 0.65 Si										◖	●●●●	480 (190 HB)	460	220	1300	Plunger Tip body
	A52	0.55 Be, 1 Co, 1 Ni										●	●●●●	480 (260 HB)	460	240	1800	Plunger Tip

ISO 9001:2015 CERTIFICATION™ QUALITY

ISO 45001:2018 CERTIFICATION™ SAFETY

ISO 14001:2015 CERTIFICATION™ ENVIRONMENT

CASTOOL™ TOOLING SYSTEMS

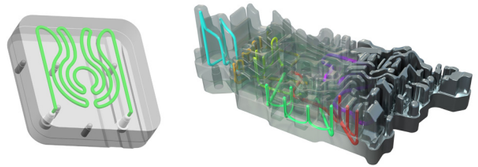
BETTER CASTINGS AND PROFILES FASTER

ADDITIVE MANUFACTURING

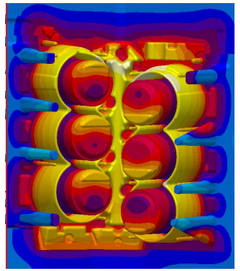
Additive manufacturing can thermally improve the die casting condition, resulting in reduced cycle times and extended tooling life. This is accomplished by conformal cooling channels which were imposssible with conventional manufacturing processes.

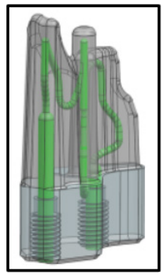
We can accommodate up to 100kg or 400mm x 400mm x 400mm parts. A proprietary heat treatment systems is also in-house to guarantee consistency and short lead times.

Each additive manufactured part undergoes Thermal Simulation.

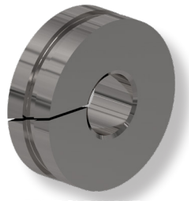


CONFORMAL COOLING SOLUTIONS

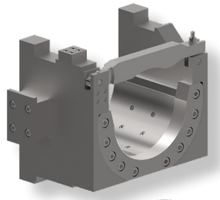




TOOLING

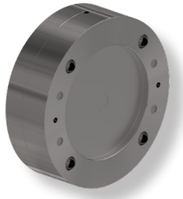


SPLIT CLEANOUT

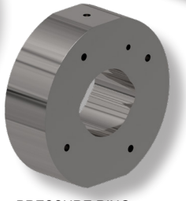


DIE SHUTTLE / DIE SLIDE

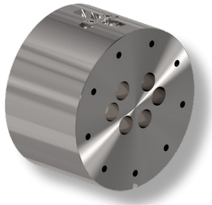
INDIRECT TOOL CONTAINER



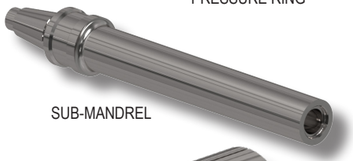
PRESSURE PLATE



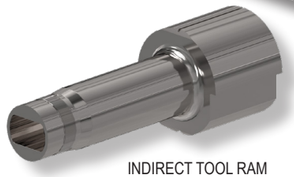
PRESSURE RING



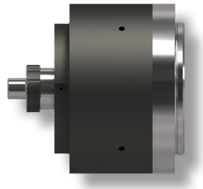
HEATED BOLSTER



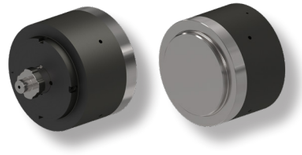
SUB-MANDREL



INDIRECT TOOL RAM

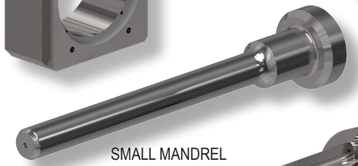


INDIRECT CLOSURE BLOCK / RAM NOSE

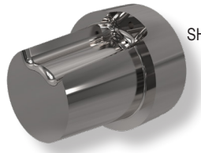


PLATEN PLATE

BUSHING SLEEVE



SMALL MANDREL



SHOT BLOCK

TIE ROD & SPLIT NUTS

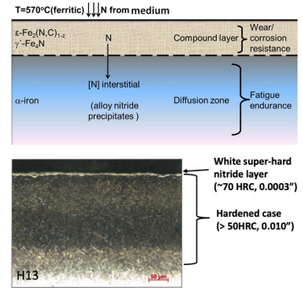
PIERCING MANDREL

HEAT TREATMENT & NITRATION

Heat treatment, nitration and other post processes are also very important. Castool has evolved the recipes over the last 50 years to provide long life, balancing wear and ductility. These recipies are the same in Canada, Thailand, Morocco and Mexico.

We vacuum harden and quench all hot work tool steel to give the best possible microstruture. The chemistry and microstructure are examined and filed by our in-house metallurgist.

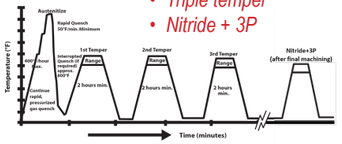
Many of our products also receive post heat treatment process, such as nitration and 3P, which add to wear resistance and extend time to failure.



Nitriding and 3P layers

Nitriding System

- *Vacuum austenizing*
- *High pressure quench*
- *Triple temper*
- *Nitride + 3P*



Vacuum Furnace

Deutsche Edelstahlwerke
HOT WORK TOOL STEELS

AST Accurate Sensors Technologies
OPTICAL PYROMETERS

SCHMELZMETALL

Design, Simulation, Material Analysis & Characterization, Thermal Control, Control Systems, Multi-Axis Milling and Turning, Large Turning and Milling, Deep Hole Drilling, Honing and Grinding, Wlre EDM

Castool's expertise in material, manufacturing and temperature management enables us to design and manufacture specialty tooling for many applications.

CASTOOL MAKES DIE CAST & EXTRUSION BETTER