For the last 43 years NADCA has sponsored its International Die Casting Design Competition to showcase outstanding die cast designs while acknowledging the continuous contribution die casters provide to the manufacturing industry.

“The International Die Casting Competition allows the world to see the advanced capability of die casting. Castings submitted this year exhibited excellent quality, while containing complex geometries. Several of the winning castings reduced or eliminated assemblies in the final product; which in turn reduced cost and lead time. Other winning castings show how die casting can be used in advanced technology. Looking at the castings as a whole exemplifies the versatility, ingenuity, and quality that drive the die casting industry to provide improved product for the various end markets being supplied.” said NADCA Project Manager Beau Glim.

Categories in the competition are grouped by material and include aluminum, magnesium, zinc and other alloy families, including squeeze casting and aluminum structural die casting. Both custom and captive casters are eligible. For each category, there are four equally weighted criteria: ingenuity of casting and/or product design, overall quality, cost savings as compared to other manufacturing processes and the part's contribution to expanding the market for die castings. A panel of independent judges, acknowledged experts, with no ties to eligible casters, choose the winners.

NADCA will honor this year’s award winners at its 2017 Die Casting Industry Awards Luncheon on Tuesday, September 19 at 12:15 - 2:00 pm during the Die Casting Congress & Tabletop in Atlanta, GA. The luncheon is an exceptional opportunity to meet this year's winners and learn more about their innovations. The luncheon is complimentary with your registration.
Shiloh Industries

Caster Award Nominees - Chris Genigeski, Rockey Wilson, Joe Bowen, Greg Myers, Steve McCallister; Todd Mullard, Rob Steinhaus, Shannon Daley, Chet Fillhard, Steve Salisbury
Customer - General Motors

FUNCTION OF PART
The Overdrive Gear Carrier is a multi-functional casting for the General Motors nine speed front-wheel drive transmission.

PREVIOUS PROCESS TO PRODUCE PART
Manufactured using ferrous sintered metals or a weldment of steel stampings and/or forgings requiring extensive gear hobbing.

ADVANTAGES GAINED
The aluminum squeeze casting process allows for a single complex lightweight casting with net formed shapes on highly critical as-cast features to serve a multitude of functions inside a very tight packaging envelope. Utilizing an aluminum casting offers a reduction in rotational mass to increase efficiency and improve fuel economy in the vehicle.
ALUMINUM DIE CASTING UNDER 1 LB

Pace Industries - Cambridge Division

Caster Award Nominees - Don Tremblay
Customer - L3 Technologies

FUNCTION OF PART
Ultra compact packaging system with self-contained optics, electronics, integrated weapon mount and independent power source.

PREVIOUS PROCESS TO PRODUCE PART
Originally conceived as a solid part using wrought 6061 Al.

ADVANTAGES GAINED
Reduced manufacturing costs while addressing its complex shape, critical tolerances, structural requirements and thin walls, the only viable alternative was a highly engineered die casting and tooling. This solution attained all the previous requirements and reduced the overall costs by 87%.

PACE INDUSTRIES – CAMBRIDGE DIVISION
67 FAULKNER ST.
NORTH BILLERICA, MASSACHUSETTS, USA

www.diecasting.org/dce
Briggs & Stratton

Caster Award Nominees - *Die Design/Engineering*
- Gary Greenlees, Vern Moss, Mike Schultz, Chad Gartzke, Scott Benson & Davis Tool
* Casting at Murray Plant - Danny Cossey, Nathan Jones, Mark Jones, Eric Hendrixson, Patrick Johnson
Customer - Briggs & Stratton

**FUNCTION OF PART**
Flywheel provides inertia to dampen the effect on the engine to even out acceleration forces. The flywheel together with the coil provide current to the spark plug.

**PREVIOUS PROCESS TO PRODUCE PART**
The previous method was a two cavity die.

**ADVANTAGES GAINED**
3-cavity die versus a 2-cavity die improved capacity per machine by 28%. Yearly demand of 3,100,000 flywheels can now be met with two 900 ton die cast machines rather than 3–4 used with 2-cavity tools. The reduction of machines to meet demand reduced labor, maintenance, and overhead costs. Also reduced the aluminum consumption and optimized sheet metal stamping operation (cast-in inserts).
ALUMINUM DIE CASTING
OVER 10 LBS

Pace Industries –
Grafton Division

Caster Award Nominees - Bob Eichenseer
Customer - Cree, Inc

FUNCTION OF PART
Luminaire Housing.

PREVIOUS PROCESS TO PRODUCE PART
Provides up to 65,000 Lumens. With high Lumen output, one luminaire can replace multiple metal halide (MH) 1000W fixtures. Result is more than 80% energy savings.

ADVANTAGES GAINED
Provides the best combination for casting and electronics, a lighter, easier to install, higher performance with the environment and reduced energy requirements, reduced maintenance, and rapid return on investment

PACE INDUSTRIES – GRAFTON DIVISION
1600 7TH AVE
GRAFTON, WISCONSIN, USA

www.diecasting.org/dce
OTHER ALLOY FAMILIES

Rheocast Company
Caster Award Nominees – Charlie Wright
Customer - Undisclosed

FUNCTION OF PART
Heat sink.

PREVIOUS PROCESS TO PRODUCE PART
Assembled the heat sink and a stainless steel spinning together in separate process.

ADVANTAGES GAINED
Now we are casting the heat sink around a copper spinning, eliminating the assembly step.

[PART] Brass Heat Sink
[MATERIAL] C85800 YELLOW BRASS
[WEIGHT] 7.3 lbs
[END MARKET] Light Fixturing

RHEOCAST COMPANY
N114 W19250 CLINTON DRIVE
GERMANTOWN, WISCONSIN, USA

www.diecasting.org/dce
Wanfeng–Meridian

Caster Award Nominees - Jon Weiler and Gerry Wang – Wanfeng Meridian; Jon Carter, Anil Sachdev, Steve Resch and Jim O’Kane – General Motors; Alan Luo – The Ohio State University (formerly at GM); Brad Christler and Pete Cristino – EDAG Engineering

Customer - General Motors / U.S. Department of Energy

**FUNCTION OF PART**

Structure of the side door and door components.

**PREVIOUS PROCESS TO PRODUCE PART**

Multiple steel stampings and reinforcements welded together.

**ADVANTAGES GAINED**

Magnesium casting result in a 48% weight savings and 5 part reduction over steel design.

Acknowledgement: “This material is based upon work supported by the Department of Energy under Award Number DEEE005753.”

Disclaimer: “This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.”
Chicago White Metal Casting, Inc.
Caster Award Nominees - CWM Engineering Team
Customer - Klever Innovations

FUNCTION OF PART
This part is a magnesium handle for the Klever X-change PLUS. Interchangeable blade inserts snap into the handle.

PREVIOUS PROCESS TO PRODUCE PART
This part was a multi-part assembly which utilized Plastic Injection Molding with a steel tab insert molded into the bottom of the handle.

ADVANTAGES GAINED
Higher durability and overall strength due to conversion from plastic to magnesium alloy, yet still lightweight. Multi-part assembly consolidated into a single casting.
FUNCTION OF PART
Heat Sink to pull heat from display projector.

PREVIOUS PROCESS TO PRODUCE PART
CNC Machined aluminum extrusion assembly.

ADVANTAGES GAINED
Single piece component with mounting features and trace-ability.
Dynacast Elgin

Caster Award Nominees - Elgin Engineering Team
Customer - Undisclosed

**FUNCTION OF PART**
Supports PCB and mounts board to projector.

**PREVIOUS PROCESS TO PRODUCE PART**
Stamping.

**ADVANTAGES GAINED**
Higher strength than previous method and lot traceability.