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.

“Over the years the International Die Casting Competition has provided an opportunity for die casters to exhibit their capability to produce high quality parts that reduce cost and production time. Although the markets for this year’s winners are not as diverse as in years past they showcase the range of shapes and sizes that can be formed with die casting. Winners from the automotive market alone range from an aluminum side mirror inner base that weighs less than half a pound to a magnesium lift gate that weighs over 15 pounds. The variety of shapes and sizes that can be produced make die casting very versatile manufacturing process,” 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 2016 Die Casting Industry Awards Luncheon on Tuesday, September 27 at 12:15 – 2:00 pm during the Die Casting Congress & Tabletop in Columbus, OH. 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.
Port City Group - A Division of Pace Industries

Caster Award Nominees - Matt Brown
Customer - Magna Mirrors

FUNCTION OF PART
House mirror components and attach to vehicle.

PREVIOUS PROCESS TO PRODUCE PART
New design.

ADVANTAGES GAINED
Cast design modified to produce finished part as cast on machine. Produced with a 4 cavity die that has a slide in each cavity. Eliminated a machining operation by designing the die to pull 3 holes out of draw.
An automatic transmission torque converter is a component that acts to reverse the direction of fluid flow as it returns to the turbine, improving the torque converter’s efficiency and performance.

Previously made from aluminum or magnesium die castings that had fewer, thicker blades and larger openings between the blades.

Increased number of blades, along with the profile and spacing between the blades improves the performance. This allows the stator to run more efficiently, with less noise, improving the overall quality of the vehicle.

FIAT CHRYSLER AUTOMOBILES (FCA) CANADA
15 BROWNS LINE
TORONTO, ONTARIO, CANADA

www.diecasting.org/dce
Pace Industries - Saltillo Division
Caster Award Nominees - Alfonso Carrillo
Customer - CREE

FUNCTION OF PART
Heat disipator for LED based High Bay lighting fixture.

PREVIOUS PROCESS TO PRODUCE PART
New design.

ADVANTAGES GAINED
Eliminate welding of sheet metal components and ensure the heat conductivity with all the 126 fins.
Microcast Technologies

Caster Award Nominees - Edward Wasowski
Customer - Dialight Corp

FUNCTION OF PART

Provide heat sinking for the LED modules while sealing unit from dust and water.

PREVIOUS PROCESS TO PRODUCE PART

16 units mounted to a central hub with individual parts to make up the frame, mounts and heat sinks. Sub assemblies mounted to central structure with hardware.

ADVANTAGES GAINED

Provides 60,000 lumens with heat sinking allowing LEDs to operate at low temperatures, extending product life. Combining previous components into a single casting allowed the assembly to be certified for indoor and outdoor use. Minimized weight while maintaining structural integrity, reduced secondary machining. Tool was designed using center shot with mid die chopper and coated core pins.
Georg Fischer Druckguss Gmbh

Caster Award Nominees - Franziska Benedetter
Customer - Mercedes-Benz Technology Center, Daimler AG

FUNCTION OF PART
Rear door frame for Mercedes C-Class T-Model.

PREVIOUS PROCESS TO PRODUCE PART
Previously a 9 piece assembly of stamped steel.

ADVANTAGES GAINED
Replaced a 9 piece assembly of stamped steel with a single aluminum die casting. Solving the challenging size and compliance of accuracy allowed for a 8.8 lb reduction in weight and elimination of assembly and joining operations. Switching to die casting allowed for an optimized vehicle package (loading gauge, viewing angle) by having small radii and draft angles.

[PART] Rear Door Frame
[MATERIAL] AlSi9MnMg
[WEIGHT] 11.5 lbs
[END MARKET] Automotive

GEORG FISCHER DRUCKGUSS GMBH
WIENER STRASSE 41-43
HERZOGENBURG, AUSTRIA
Wanfeng-Meridian
Caster Award Nominees - Jon Weiler
Customer - Fiat Chrysler Automobiles

FUNCTION OF PART
Casting is the integral part of a 4-piece assembly with aluminum sheet outer panels & stamping wiper bracket.

PREVIOUS PROCESS TO PRODUCE PART
The magnesium casting replaces seven steel stampings and two plastic pieces that were welded and/or joined together including steel reinforcements in the hinge and latch areas.

ADVANTAGES GAINED
Liftgate inner casting is a 40% mass reduction from combined weight of previous steel stamping & reinforcements. The die casting has an added benefit of reducing the number of parts in the assembly (replacing 7 stampings and 2 plastic pieces with 1 casting) and joining technologies required (reduced from 84 to 10).
FUNCTION OF PART
Screen Frame protects and houses the flip top LCD screen.

PREVIOUS PROCESS TO PRODUCE PART
Converted from plastic injection molding to magnesium die casting to remain relatively lightweight while creating a more “expensive feel.”

ADVANTAGES GAINED
Low mass, excellent finish, great alternative to plastic provides a more “expensive feel”. The stenotype writer is meant to be a compact, lightweight shorthand typewriter, so having a reduced mass allows for easy portability.
**ZINC DIE CASTING OVER 6 OZ**

**Bruschi s.p.a.**
Caster Award Nominees - Erminio Fuse
Customer - ARCA Technologies

**FUNCTION OF PART**
Frame for PCB and scanner installed in a “Teller Cash Recycler.”

**PREVIOUS PROCESS TO PRODUCE PART**
Several stainless steel parts welded, assembled with screws, welded and machined.

**ADVANTAGES GAINED**
Zinc die casting has eliminated the assembly of the steel frames, now only 2 die cast parts. Parts are now cast to near finished condition, removing CNC machining operations (only need tapping after shot blasting). Increased stiffness of the part provides improved performance of the scanner. Overall cost reduction of 40%.

---

**[PART] Mobile Frame**
**[MATERIAL] ZAMAK 5**
**[WEIGHT] 10.25 oz**
**[END MARKET] Office Equipment**
PRODUCTIVITY
AWARD

Briggs & Stratton

Caster Award Nominees - Eric Hendrixson, Jerry Montgomery, Chris Black, Chad Gartzke, John Schneiker, Mike Schultz, Gary Greenlees, & Davis Tool
Customer - N/A

FUNCTION OF PART
Overhead valve head containing intake port, exhaust port, spark plug, combustion chamber, rocker bosses, valve guides & cooling fins in a small engine.

PREVIOUS PROCESS TO PRODUCE PART
OHV heads are usually single cavity dies with slide pulls required from all directions to create the casting.

ADVANTAGES GAINED
New design that only requires slides from 2 opposite sides. The “rocker box” was redesigned as a stamping to allow fewer pull directions to increase productivity in the die cast cell. Has special “as cast” requirements to provide exhaust mounting that requires no gasket or machining. Cooling fins designed to shed debris.

BRIGGS & STRATTON
110 MAIN STREET
MURRAY, KENTUCKY, USA