**PRESS RELEASE**

**Sustainable die-casting technology transforming the automotive industry: Italian and German engineers selected as finalists for the European Inventor Award 2024**

* **Technical director Fiorenzo Dioni and Richard Oberle from the Idra Italia engineering team created the largest die-casting machine in the world**
* **The Giga Press, which reduces waste and energy consumption by producing much larger parts with fewer components**
* **The duo will compete for the ‘Industry’ category award against an Icelandic team and a Swedish one until 9 July**
* **Voting for the** [**Popular Prize**](https://a.cstmapp.com/login/973466/?vote=144556_707037559&lc=eng)**, awarded by the public, is open as of today**

**Munich, 16 May 2024** – Many countries are taking steps to reduce their carbon emissions, and one of the mandates set in this direction is to make all new cars electric by 2035, as set out by the [European Green Deal](https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal_en). However, the higher cost of electric vehicles remains a concern for many people. The Giga Press **with the 5s injection system,** developed by the engineers Fiorenzo Dioni and Richard Oberle, is geared towards producing electric car parts on a large scale to make electric cars widely available and more affordable. The IDRA Group’sduo are nominated as finalists in the ‘Industry’ category of the European Inventor Award 2024 for their contributions to the automotive industry. They were chosen from 550 candidates for this year’s edition.

**Engineered to make more with less**

The Giga Press is a machine specifically designed to create large, simple pieces of vehicle underbodies in a more straightforward process. **Compared to traditional methods that can require assembling 70 separate castings, the Giga Press produces** **just two to three large castings that make up the underside of a car** with fewer components, ultimately reducing waste and energy consumption.

The manufacturing process involves melting aluminium alloy using natural gas. The molten aluminium is injected into the oil-coated mould, using the 5S (Strong, Simple, Stable, Smooth and Sustainable) injection unit. Then, the casting is removed, cooled and checked for defects using X-rays. The next step involves trimming the casting with a laser and drilling it using a computer-controlled machine.

The Giga Press has a metal recycler that collects aluminium cutoffs and scraps to be reused in the next casting cycle, reducing waste. According to the [European Aluminium industry association](https://european-aluminium.eu/wp-content/uploads/2022/10/european-aluminium-industry_sustainability-roadmap-towards-2025.pdf), recycling aluminium uses approximately 95% less energy and produces fewer greenhouse gas emissions. The latest ranges of the **Giga Press** **reduce energy consumption by 54%**, according to the company’s estimates.

The IDRA Group indicates that the Giga Press has **reduced the automaker’s product costs by 40%.** This is due to the simplified production processes, reduced parts required, and the minimisation of transportation costs. *“Big brands in the market welcomed our idea, as we created a new industry just in time and without which they would have been in trouble”,* Dioni said. “*The internal combustion engine is in decline, and the requirements for die-casting are decreasing, and this is, therefore, a replacement and an innovative way to have a continued existence”*,he explained.

**Contributing to die-casting since the 1970s**

Dioni, the Engineering Manager at IDRA Group, has been working on the Giga Press project since 2016, resulting in various energy-efficient modifications that have proven incredibly useful to the industry. Oberle, who gained extensive knowledge of die-casting from IDRA Group in the 1970s, returned to the company as a consultant in 2016. Dioni and Oberle collaborated on designing a 5S injection unit. Their continued expertise and dedication are evident as **Dioni and Oberle work to improve the dimensions of the Giga Press to accommodate electric cars**. *“Electric vehicles remain too expensive for most people,”* Oberle explained, *“especially given the upcoming regulations that mandate all new cars must be electric starting in 2035. The goal is to make electric cars more affordable and accessible to all by then,*” he added.

Dioni and Oberle have been named as one of the three finalists in the ‘Industry’ category for this year’s European Inventor Award. The other finalists recognised for outstanding work are Icelandic Fertram Sigurjonsson for developing a biotech-derived wound healing product using fish skin and Ulf Landegren and Simon Fredriksson from Sweden for their work in molecular diagnostics enhancing disease detection. The EPO will announce the winners during a ceremony livestreamed [here](https://www.epo.org/en/news-events/european-inventor-award/streaming?mtm_campaign=EIA2024&mtm_keyword=pressrelease&mtm_medium=press) from Malta on 9 July 2024. In addition to each category, the EPO will reveal the Popular Prize winner, chosen by online public vote. Voting will remain open until the day of the ceremony.

Find more information about the invention’s impact, the technology and the inventors’ stories [here](https://www.epo.org/en/news-events/european-inventor-award/meet-the-finalists/fiorenzo-dioni-and-richard-oberle?mtm_campaign=EIA2024&mtm_keyword=pressrelease&mtm_medium=press).

**Media contacts European Patent Office**

**Luis Berenguer Giménez**

Principal Director Communication / EPO spokesperson

**EPO press desk**

press@epo.org

Tel.: +49 89 2399-1833

**About the European Inventor Award**

The European Inventor Award is one of Europe's most prestigious innovation prizes. Launched by the EPO in 2006, the award honours individuals and teams,who have come up with solutions to some of the biggest challenges of our time. The European Inventor Award jury consists of inventors who are all former finalists. To judge proposals, the independent panel draws on their wealth of technical, business, and intellectual property expertise. In 2024, the jury is chaired by Wolfgang M. Heckl. All inventors must have been granted a European patent for their invention. Read more [here](https://www.epo.org/en/news-events/european-inventor-award?mtm_campaign=EIA2024&mtm_keyword=pressrelease&mtm_medium=press) on the various categories, prizes, selection criteria and livestream ceremony to be held on 9 July in Malta.

**About the EPO**

With 6,300 staff members, the [European Patent Office (EPO)](https://www.epo.org/?mtm_campaign=EIA2023&mtm_keyword=EIA-pressrelease&mtm_medium=press&mtm_group=press) is one of the largest public service institutions in Europe. Headquartered in Munich with offices in Berlin, Brussels, The Hague and Vienna, the EPO was founded with the aim of strengthening co-operation on patents in Europe. Through the EPO's centralised patent granting procedure, inventors are able to obtain high-quality patent protection in up to 45 countries, covering a market of some 700 million people. The EPO is also the world's leading authority in patent information and patent searching.