

ARRK SUPPORTS NEW MOBILITY PROJECT

Through the product development activities of our customers, ARRK finds itself at the heart of the evolution of society. We are increasingly collaborating on “new mobility” projects. Given our experience serving the automotive industry, ARRK is also able to support clients in the electric vehicle, non-motorized and other autonomous mobility sectors. One client ARRK was able to help was Vega Chargers and their electric charging station project.

VEGA CHARGERS, DESIGNER OF CHARGING SOLUTIONS FOR ELECTRIC VEHICLES

Vega Chargers sell charging stations for three-phase electric vehicles (cars, trucks, boats, helicopters). The company is involved throughout the life of the product, from the product design, manufacture, marketing and the installation/maintenance of its equipment throughout Europe.

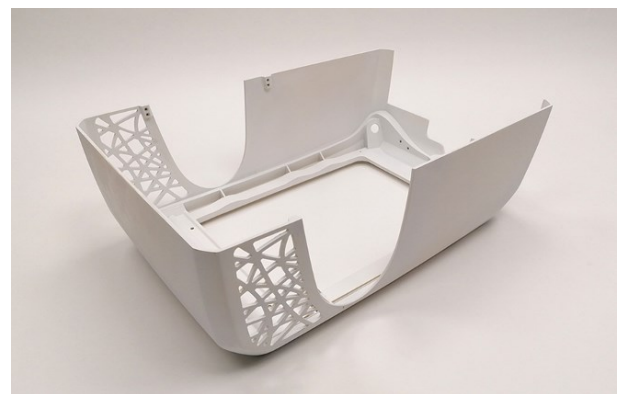
FROM RAPID PROTOTYPING TO PRODUCTION

Vega Chargers first called upon ARRK to prototype its Aloha Gravity model, a wall-mounted charging station. ARRK provided a box machined in ABS material, and the blue "ears" in rubber-like PU resin to simulate the foam material of the final product.



PRODUCING SMALL VACUUM-CAST SERIES ON DEMAND

Since 2021, ARRK has supported the development and manufacture of Vega Chargers. Thanks to ARRK's flexibility and the vacuum casting process, the customer can reorder additional parts, as and when required. ARRK initially delivered a batch of 10 wall boxes, then 20 in 2021, then a series of 50 units in 2022, followed by a further 100 units in 2023. In a few weeks, ARRK is able to cover the entire production cycle: manufacture of the master, the silicone mould, then the polyurethane parts, finishing and painting.



LARGE VACUUM CASTINGS

ARRK's production capabilities allow for the manufacture of a single polyurethane part up to 2300 mm in length and a weight of up to 12 kg. The Vega Chargers wall box, measuring 760 x 475 x 260 mm and weighing 6 kg, could be taken care of without difficulty.

ADVISING THE CLIENT THROUGHOUT THE PROJECT - OPTIMISING THE DESIGN OF THE CABINET TO ENSURE ITS WATERTIGHT

Vega Chargers wanted to optimise the design of the charging station to achieve a perfectly waterproof product that can be used outdoors. The client knew they could count on the support of ARRK's experts to improve certain technical details. After reviewing the 3D files, ARRK made some suggestions regarding wall thicknesses and draft angles.

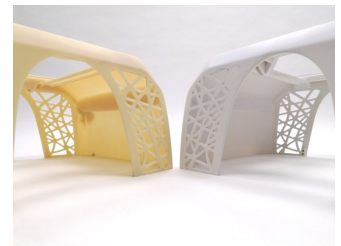
MACHINING ABS PLASTIC MASTERS

Due to its complex geometries, the master of the Vega Chargers box was manufactured through CNC machining, in ABS material. Thanks to this selection, the customer was able to test the assembly and the various components before moving into production.

THE ADVANTAGES OF ABS-TYPE POLYURETHANE RESIN

It was agreed that a low volume quantity of Vega Charger boxes would be produced using vacuum casting and that the parts would be produced in an ABS-type PU resin. The client's specifications required material properties compatible with outdoor use and in public places. It had to have the following qualities:

- Good impact resistance: to reinforce the internal metal structure of the box
- Environmental temperature stability: from -20°C to +50°C
- Resistance to moisture and fire: to preserve the high voltage electronic components inside the box
- Dimensional stability of large format and thick-walled parts
- Sufficient rigidity to securely fasten metal inserts
- Easy to paint for aesthetic surface appearance



THE CHOICE OF AN EPOXY PAINT TO IMPROVE THE ROBUSTNESS OF BOXES

While we usually paint the vacuum-cast parts with polyurethane paint, in this instance, our team recommended an epoxy paint to reinforce the robustness to the external elements of the Vega Chargers box (bad weather, scratches, etc.).

Prior to the finalization of the parts, our Paint shop provided samples to the customer so that they could test the quality rendering of this top-of-the-range paint.

THE COLLABORATION CONTINUES!

The low volume manufacturing run for Aloha Gravity bollards is now well established and up and running. Vega Chargers is expanding its offer with a self-supporting terminal model (Aloha Lander). In 2023, ARRK will continue to support the client and will supply 35 sets consisting of the top and bottom covers of this model. These parts have complex geometries but as before our vacuum casting solution serves their requirements well.



For further information on ARRK's range of services, please contact:

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