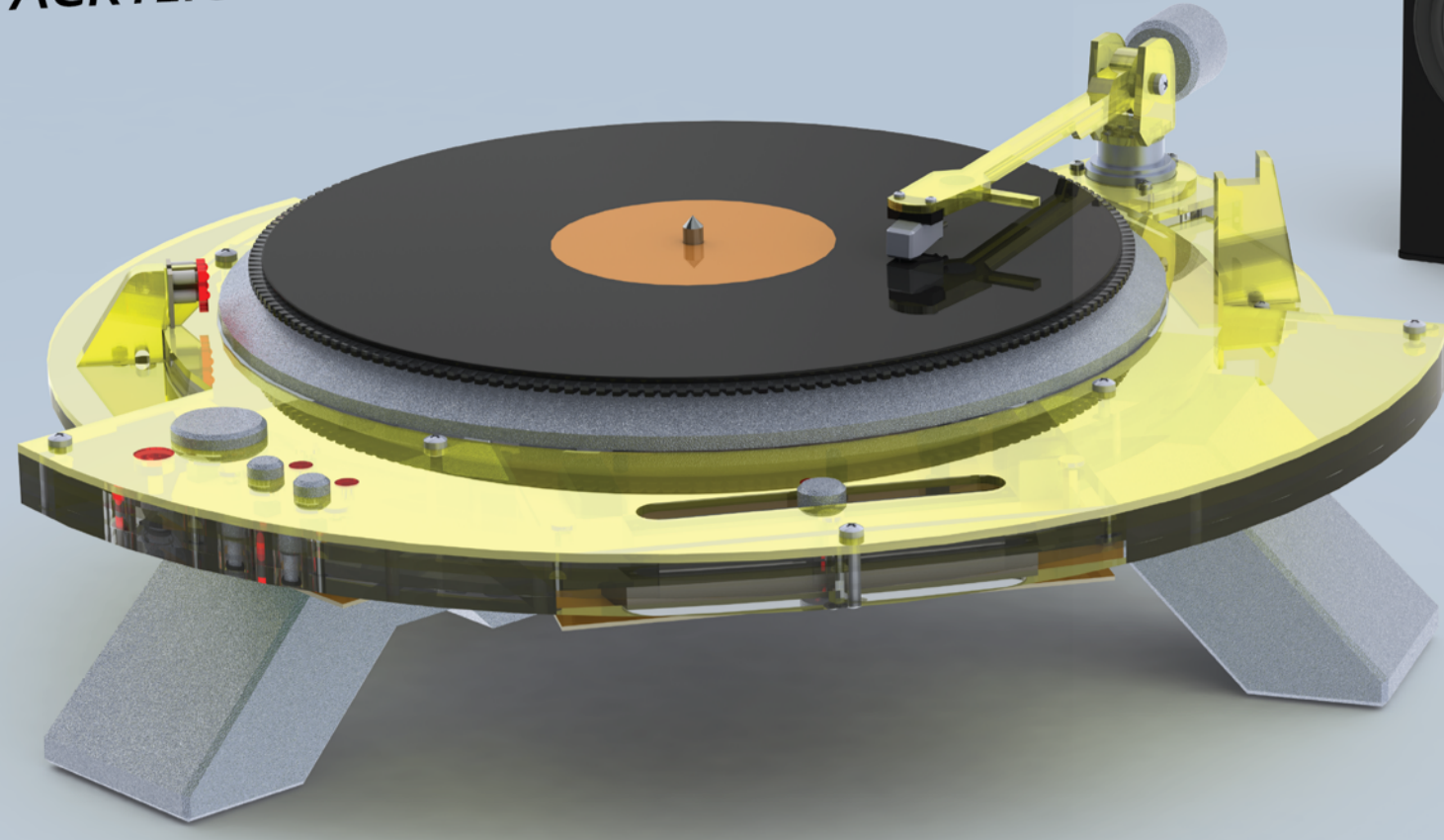


SPINOCITY

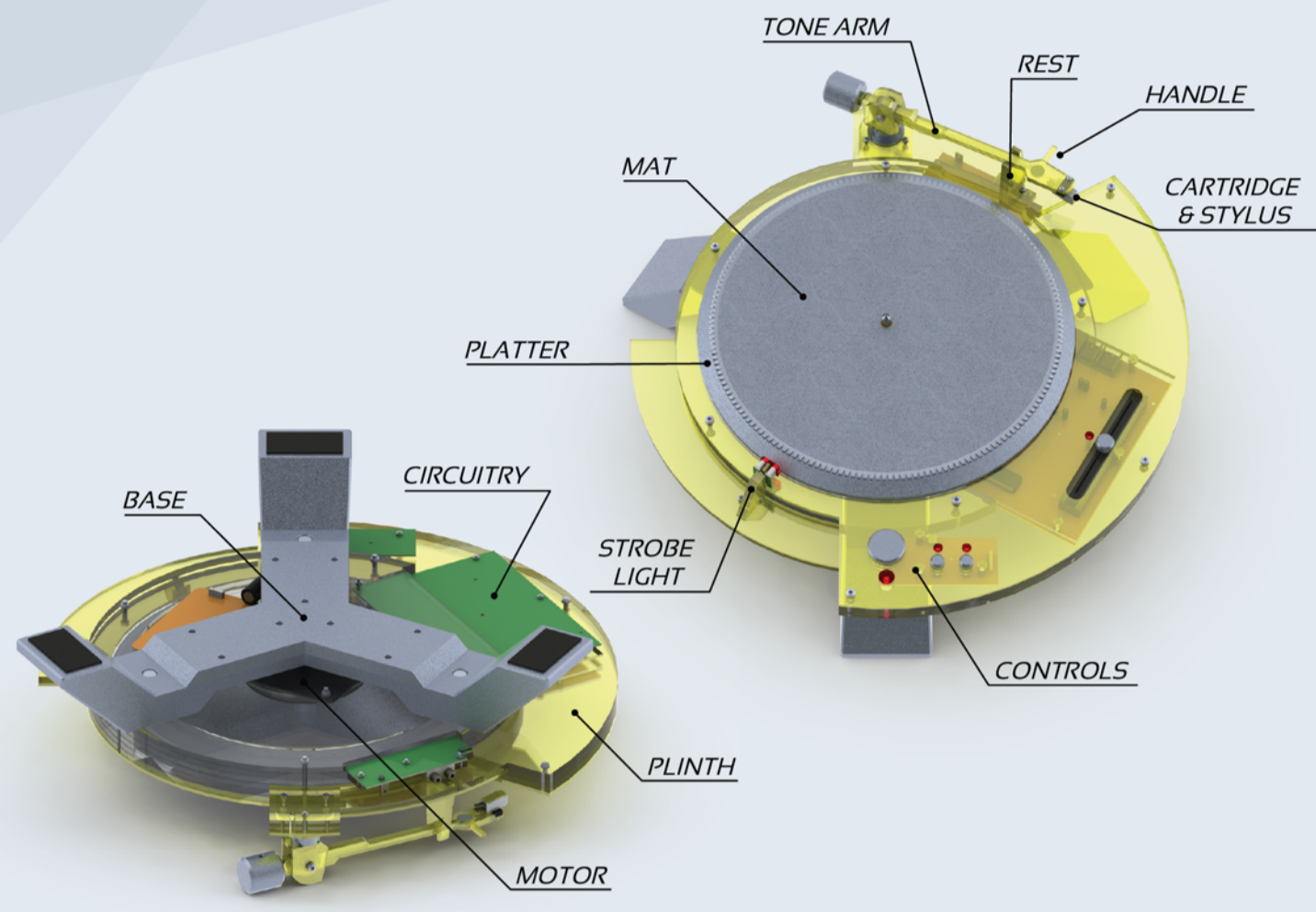
ACRYLIC & ALUMINIUM DIRECT DRIVE TURNTABLE



THE FUNCTION

Like all turntables, Spin City converts the spiral groove on the surface on a vinyl record into an analogue audio signal containing music.

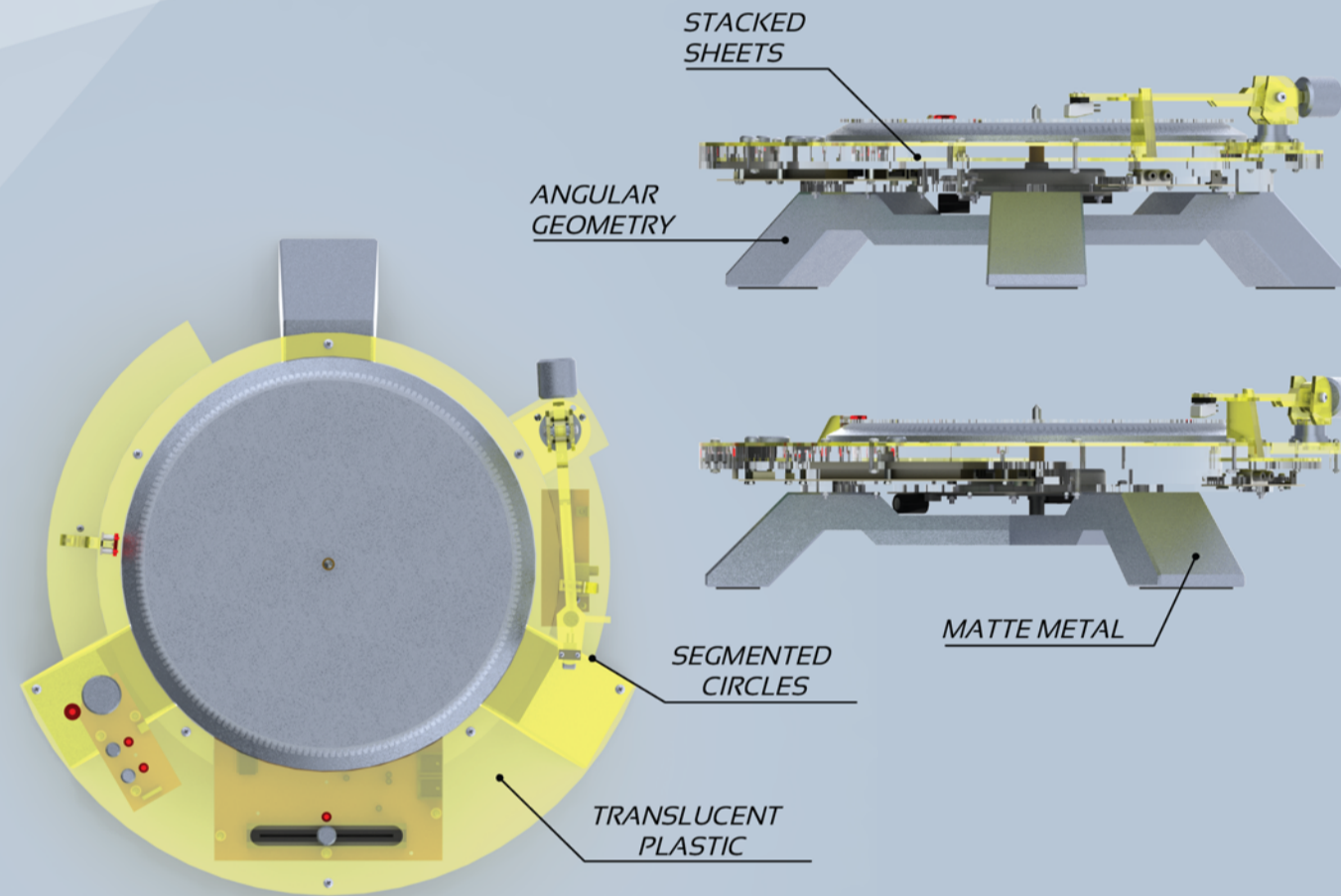
This is achieved by using a motor to turn the platter on which the record sits, and a tone arm and cartridge that allow a stylus to vibrate as it tracks across the record's surface. Spin City uses a digitally controlled 'direct drive' motor, located directly below the platter, to provide performance and functionality required by disk jockeys. Control buttons on the plinth allow the playback to be started and stopped easily, as well as speed selection and fine pitch/speed adjustment. The rotation can be physically interfered with by touching the angled edge of the platter, while a strobe light shining on the outside of the mat indicates when the speed is correct. Manual placement and removal of the stylus, to and from the record, is aided by the tone arm handle and resting post. In all, by including a modest feature set, the Spin City turntable allows users to experience the physical operations involved in using this simple, yet popular audio format.



THE FORM

The Spin City design uses contrasting form and materials in a complementary manner, aiming to demonstrate principles of concinnity as a unified whole.

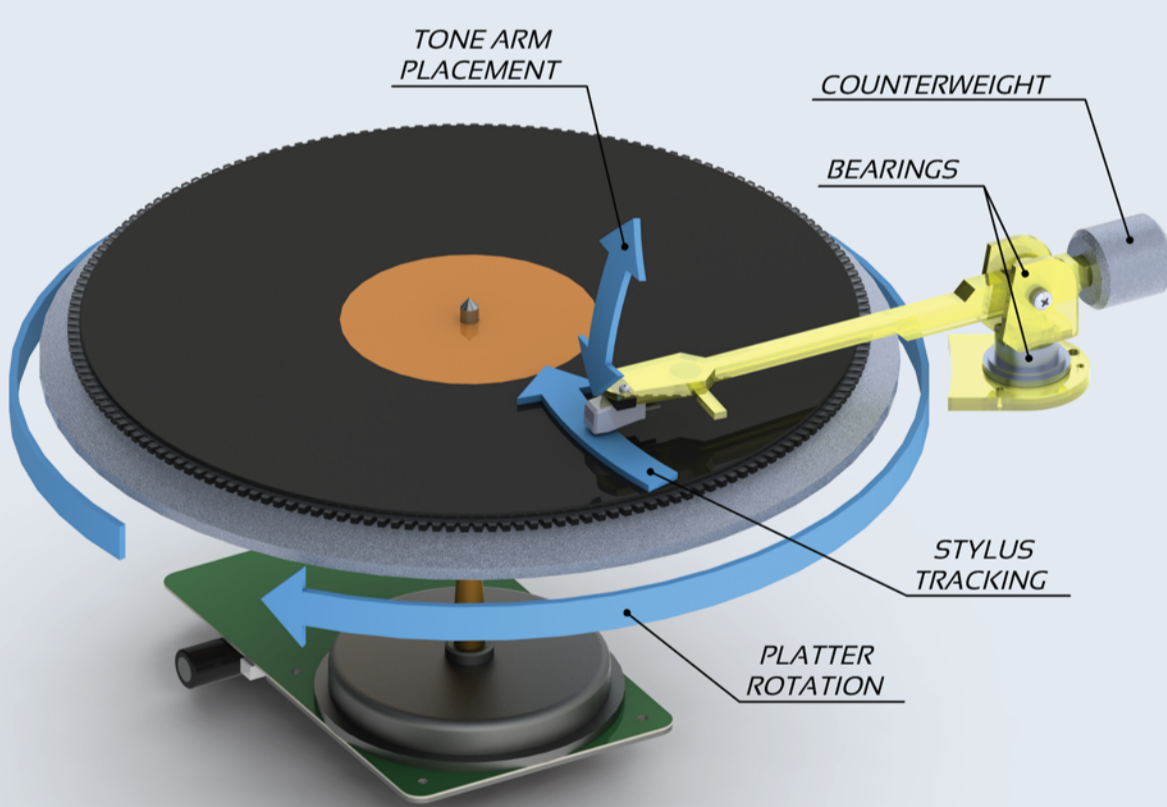
It combines a plinth, comprising of stacked and segmented circular sheets, sitting atop a three legged base made from simple geometric and angular components. Plastic parts are defined by their clean cuts and sharp corners, while metal parts include both cylindrical bodies and chamfered edges. The translucent plastic material allows for all parts of the turntable to be seen, while creating interesting internal optical effects. Accordingly, the technical componentry, cables and fasteners were carefully positioned to create visual interest, rather than extra complexity. Finally, the coloured, polished and reflective appearance of the plastic contrasts the silver, uniform and matte finish on the metal. As a result, the aesthetic style of Spin City may be described as a fusion of the past and present; a retroactive look at the future, realised through modern technologies.



THE MOVEMENT

Turntables like Spin City have strict engineering requirements, involving movement in several different aspects of their operation.

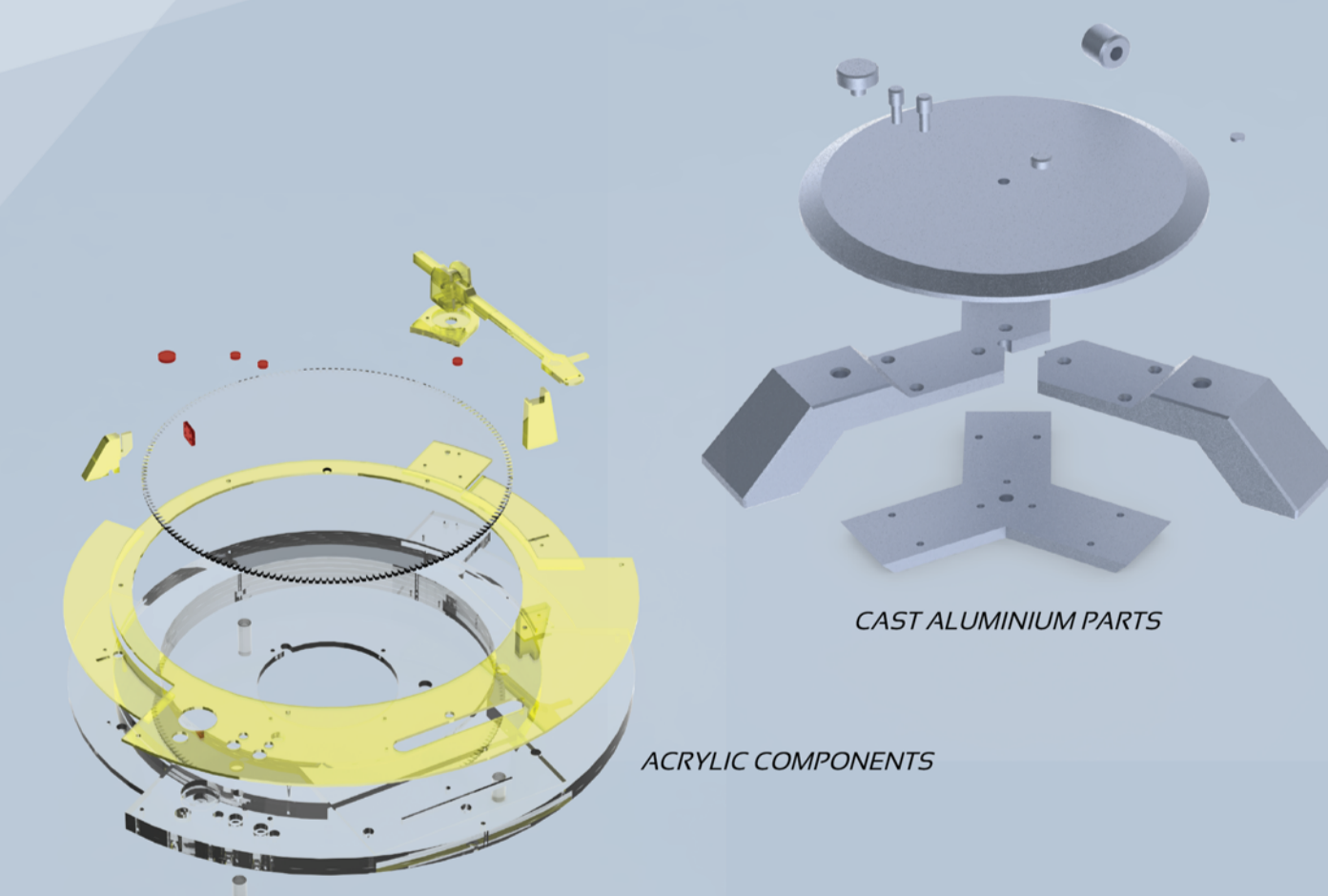
Firstly, the platter must spin at the desired revolutions per minute, dictated by the media format and the turntable's operator. Spin City accomplishes this with accurately made and balanced parts, fitted to the motor and greater technical package. Secondly, the tone arm must move freely and with minimal resistance, to allow the stylus to track across the record surface via its interaction with the groove. The Spin City tone arm was designed in accordance with the cartridge specification, and uses very light fluid bearings and balancing weights, to allow precise movement across two axes. Thirdly, turntables must minimise movement in terms of unwanted vibration. Spin City uses dense and stable materials and features a sturdy base with rubber foot pads. Finally, control mechanisms must move as intended; a requirement met by the push buttons and slider knob used in this product.



THE MATERIALS AND PROCESSES

Spin City is made from acrylic and aluminium, two materials appropriate for turntable construction, and with properties and processes that have informed the design.

Laser cut cast acrylic sheet and a small amount of acrylic rod were used to make the body and tone arm. Smaller plastic parts have been solvent welded together, while larger sheet pieces are joined using metal fasteners. Laser cutting allowed for these components to be made quickly and accurately, while leaving an attractive polished edge. The process was limited to making 90 degree through cuts and using a maximum 6mm thick material. Split mould, sand casted, and machined aluminium was used to make the base, platter and cylindrical parts. These have been fastened to both the plastic and each other, with some threads tapped directly into the metal. The aluminium parts required machining, using drills, lathes and a mill, and were finished with a two stage glass bead blasting process. By using aluminium, the product benefits from its strength, relative low weight and non-magnetic properties. Sand casting meant that tooling requirements and material shrinkage needed to be taken into account.



THE IMPACT

Responsible design must consider the impact on the environment, so a comprehensive 'life cycle assessment' of Spin City was performed.

Information about the materials and processes, transportation, turntable usage and the end of life situation, were analysed using the software, Sustainable Minds. The resulting data allows us to understand the amount of carbon dioxide produced at all stages of the products life. Spin City was found to require a significant amount of resources in its production, yet as a low power and easily recyclable device, had minimal environmental impact regarding use and disposal.

IN A TYPICAL LIFECYCLE SPIN CITY PRODUCES: **730kg of CO₂ emissions**

ALMOST ENTIRELY FROM ITS CONSTRUCTION USING:

