

RACEFORM PERFECT WHEEL ARC CUTTER

Field of use

This invention provides a solution for trimming of the wheel arc on small scale remote control car bodies. The solution provides a simple way of cutting a perfect round circle at the required location of the new remote control car body.

Background

Traditionally, racers will use a general hobby curve scissors to cut and trim the wheel arc of a new lexan body. That usually results in a badly shaped wheel arc and normally will require a second round of trimming with other tool e.g. rotary grinder etc. to make it a better clearance for the wheels and tires during runs.

Some racers will also use an art knife to score a cutting line on the new lexan body, following the outline but it requires many years of practice to be able to have a smooth cut out, and may also result in injury due to landing the cutter onto one's hand during the cut.

On the market, there is also a cutter, Compass Circle Cutter. It is able to cut round on a lexan body but due to the design, usually resulting in a bad cut or a cut that is not deep enough. Cutting it one round or more will results in 2 or more lines, which will make the separation process very difficult and may results in lexan tearing in the wrong direction, damaging a new body.

Detailed Description

This invention of the product consists of 4 main parts. Fig.1.

Parts name and purpose as per below:-

- 1) Support base with mat foam and locating pin – The base consist of a M5 screw acting as a centre locating pin, also the axis point of the arc. This part will be slot inside a new lexan body after the axis point is located and a 5mm hole is drilled or reamed. The foam will act as a non-slip material to hold the device in place securely while also acting as a cutting mat during the cutting process.*
- 2) Main Device – This part consist of a set of 3 roller bearings that is aligned to have the same axis as the centre locating pin. The 3 roller bearings will act as a riser and ease the cutting process, making it a smooth and precise cut. With a centre bearing that is*

located right in the middle and to be aligned with the centre locating pin from the support base, it further allows a smooth and precise cut then pressure is applied from the fastening knob. This part will be assembled on the outside of the new lexan body, while the blade is facing the lexan body.

- 3) Blade gripper plate – This part holds the blade in place via screws and an additional outside plate, sandwiching the blade in between. Diameter adjustments will also be able to be made by sliding the part in and out, and fastened by screw on top.*
- 4) Fastening Knob – This part once fastened, sandwiching the new lexan body in between the support base and the Main Device, will fully secure the device, allowing for smooth and precise cut. Fastening the knob will increase the depth of cut by flexing the main chassis closer to the lexan body. Releasing the knob will reduce the depth of cut, making it suitable for thinner lexan body.*

Instructions

Step1) Assemble any aftermarket hobby knife blade onto the blade gripper plate, allowing the tip of the cutting blade to protrude from the bottom of the plate by 2mm. Fig.2

Step2) Adjust the blade gripper blade to your required cutting diameter to suit your wheels.

Step3) Determine the axis of the wheel location and drill a Diameter 5mm hole on the lexan body. Fig.3

Step 4) Assemble the Support base from the inside of the lexan body, sliding the centre locating pin into the Diameter 5mm hole. Fig.4

Step 5) Slide the Main Device into the locating pin from the base plate from the outside of the lexan body. At this point, the lexan body will be in between the 2 parts.

Step 6) Fasten the knob into the locating pin. This will add affix the device securely, ready for cutting. Fig.5

Step 7) Turning the Perfect wheel arc cutter clockwise and the blade will score a cut into the lexan body. If depth of cut is not enough, further fasten the knob to add pressure, flexing the main device into the lexan body and turn the Perfect wheel arc cutter again for another deeper cut.

Step 8) Once cut is determined, remove the Perfect wheel arc cutter from the body.

Step 9) Tear the lexan body along the arc line that was scored and repeat step 3 to 8 again. Fig.6

Claims

System for cutting perfect wheel arc on a lexan body

Main Patent Independent Claim

Patent Claim 1. A cutting system comprising : A Base consist a foam mat surface and a centre locating pin with thread, a main device for holding the blade gripper plate, a knob for fastening the perfect wheel arc cutter, sandwiching the lexan body in between.

Patent Dependent Claim 2. The system of claim 1 where in the base consist of the mat acting as a cutting support mat for the lexan body to be affixed flatly on during the cutting process. The foam mat will also act as a non-slip surface during cutting, allowing a precise cut and eliminate a double line cut if a secnd or more cut is required

Patent Dependent Claim 3. The system of claim 1 where in the main device consists of 3 rollers on the outside of the part, precisely aligned to the rotation axis, allowing the device to rotate smoothly and precisely during cutting.

Patent Dependent Claim 4. The system of claim 1 where in Blade Gripper Plate will be able to adjust by sliding inwards or outwards the rotating axis, adjusting the diameter of cut that is necessary for different type of wheels.

Patent Dependent Claim 5. The system of claim 1 where in the assembled parts consisting the Support base with mat foam and locating pin, main device, blade gripper plate and fasterning knob, designed to work together, allowing a smooth and precise cutting action when use with a stand hobby knife to be affixed on the blade gripper plate. Turning to cut the wheel arc on a lexan body and depth of cut can be adjusted by fastening or loosening the knob to adjust the flex in the main device precisely towards or outwards the lexan body.