

ADJUSTABLE COLOR WHEEL MODEL RA-17

Many years ago, a very knowledgeable gentleman by the name of Sir Isaac Newton, after considerable study, decided that there were seven identifiable colors in the spectrum of sunlight or what we generally call daylight. The names of the seven colors that he selected are red, orange, yellow, green, blue, indigo and violet, remembered by students over the years by the acronym name ROY G BIV. Well, there is nothing absolute about his selections, they are neither perfectly correct nor slightly wrong. It was just one man's attempt to describe what he saw as the light exited from a prism. He might easily have decided that there were six or even eight basic colors in the rainbow he was studying. His choices, however, are widely accepted and seven is the usual number used in constructing a color wheel.

The idea behind a color wheel is that, if we have a segmented disc with approximately the correct amount of these seven colors, when the disc is spun, the light that is reflected will appear to be white or nearly so. Is it perfect? Of course not! The full spectrum of sunlight contains thousands of colors of various intensities. The best we can hope for is a reasonable approximation when using only seven colors. What it will show is that the concept is quite correct. The images are remarkably different when looking at a spinning color wheel and when looking at that same wheel at rest.

To prepare the RA-17, loosen the thumbnut slightly so that the individual segments can be rotated. Notice that each segment has a degree scale printed on it in white ink. This is to permit you to set your estimate of how much of each color should be represented in the total 360 degree space available. When used with the WINSKO ER-6A variable speed rotator, when facing the disc, it will turn in a clockwise direction. It is mandatory that the leading edge of each segment be tucked underneath the trailing edge of the segment ahead of it in the direction of rotation. If you should get this arrangement reversed, the wind will pick up the leading edges. When you have set all the segments, tighten the thumbnut and jot down the degree setting for each color. You will want to know where you started when the time comes to try an adjustment.



If you don't think our segment color selections are the best, we have provided a template that you can use to trace and cut out segments in colors of your choice. You can change one color or all seven to see what effect it has on the reflected light. Also, take note of the difference when the spinning disc is viewed in sunlight, fluorescent light and incandescent light. Each of these light sources has a different spectral makeup, so we should expect to see a difference in the reflected light with a fixed setting of the segments. Does it follow that we should be able to readjust the segments to compensate for the change in the light source?

When viewed in sunlight, our closest approach to a white reflection has been with degree settings that we will be happy to send you. All we ask is that you first e-mail us at info@winsco.com with the best that you have achieved. If we can collect and average a great many attempts, surely we will be close to the best answer. As soon as we get one hundred responses, we will publish the average of these results on our website, www.winsco.com.