

## How Does it Work?



The Media Décor motorized art frame design is based on research of what factors are most important to clients and designers who wish to conceal large displays with motorized artwork. It was never designed (in its present form) to appeal to a price point driven mass market.

The classification of our product is essentially 'custom furniture', not electronics. Because it is rare for 2 clients to want the same TV, same artwork, and same frame: each unit must by definition be custom made. It is similar to having a custom piece of furniture built to conceal your Plasma TV.

In order of importance, the following design/performance criteria were requested:

1. quiet operation
2. smooth movement of artwork/canvas
3. avoidance of the window shade or garage door movement of canvas
4. tensioning of canvas in all directions
5. large selection of artwork and custom artwork
6. large selection of frames
7. warranty

Items 1-4 were the biggest design challenge. Over 1500 hours of design time and prototyping, along with a lot of 'out of the box' thinking, paid off. We successfully met the first four criteria.

1. **Quiet Operation**, which was the most important requirement from our survey, meant using only the highest quality and most precise electronic drive unit (EDU) available. This falls into the 'you get what you pay for' category. The cost of this component is quickly forgotten when you hear it operate. It is virtually silent at 44db, vs. over 70db for all other units we tested.

To further reduce the noise or at least prevent any transmission of noise throughout the metal structure, standard mounting brackets were replaced with direct high tolerance side mountings utilizing hard noise/vibration insulators between the EDU assembly and the metal structure.

The EDU is manufactured by Lutron and is widely recognized as the finest drive unit in the industry. It is know as the Sivoia QED™ (Quiet Electronic Drive).

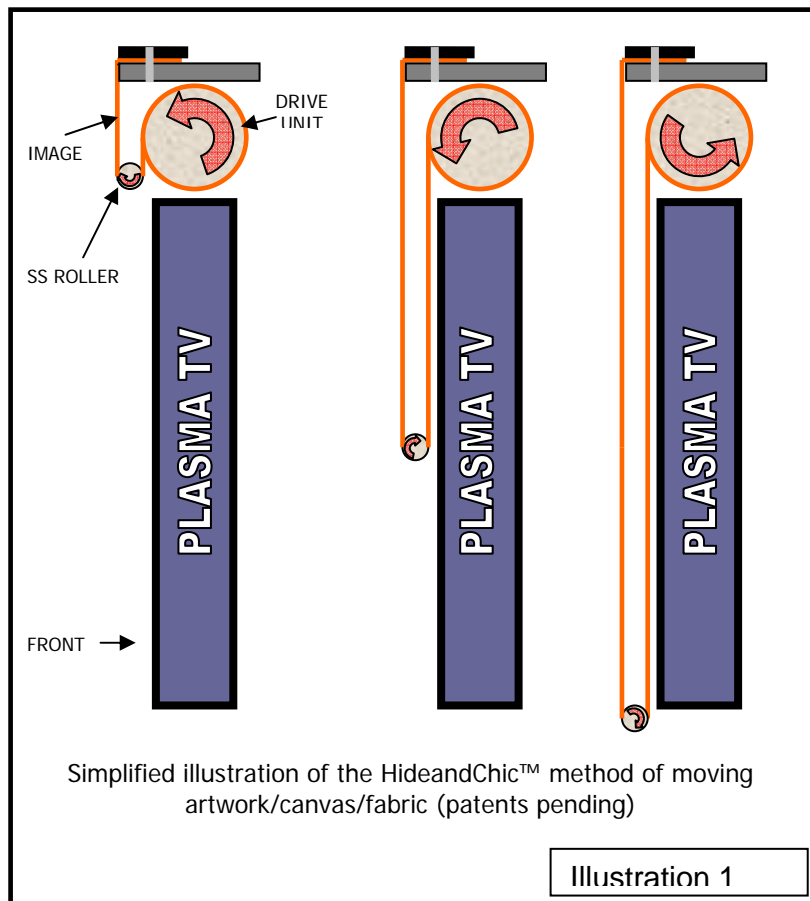
2, 3. **Smooth Movement** of the canvas, especially in the 'down' or closing direction, requires a precision motor AND minimal friction of the canvas on the sides. The Lutron QED satisfied the precision side of the equation, but not the canvas issue. If the canvas operated like a typical shade with no side tracks, the smooth movement would be accomplished. But it isn't that easy...

Since we are moving artwork/canvas, the material must be tensioned so it doesn't look like a wrinkled shirt. The typical solution is to have the canvas run in a narrow track on the left and right side. This works, but not brilliantly, because there will always be friction within the channel. The friction can result in uneven downward movement or at worst a 'jam' in the track. Also, the side channels provide no side to side tensioning. Only if the canvas moved up and down without a track, could we assure smooth movement, but at the same time, a track or channel is required (or so we thought) to keep the canvas positioned.

This was a very difficult design problem, but we had to 'jump out of the box' to solve this obstacle.

**A Better Mousetrap or 'I can't believe no one thought of that!':**

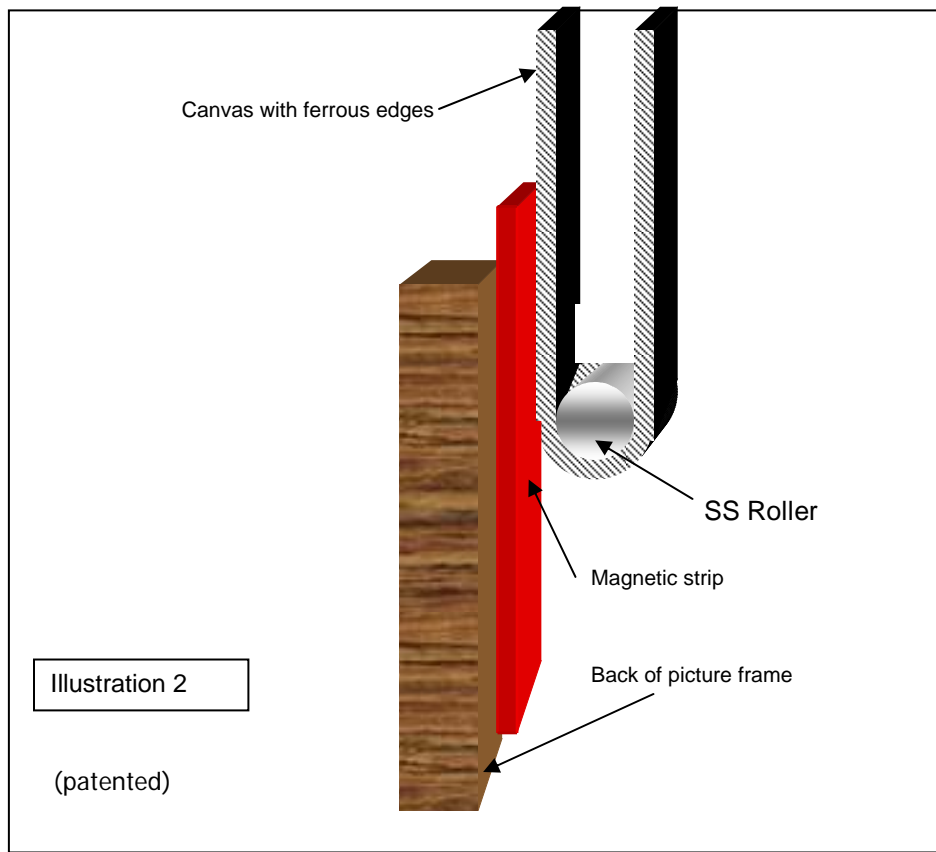
Instead of having the motor unroll the canvas from the top down, why not fix the top position of the canvas and have the motor pull and push the image from the top down and the bottom up? Confused? The illustration below will help:



In the drawing above, image is moving from the open to closed position. The image is ALWAYS in the same fixed position and does not actually move. Unlike a roller shade, the image does not move up and over the top. This is how we eliminated the pesky side channels and at the same time immensely improved on the visual illusion of the artwork appearing and disappearing. The art or canvas is disappearing from the bottom up, or appearing from the top down. It is the visual equivalent of a 'screen wipe'. The mechanics to do this required precision, i.e. 'you get what you pay for'.

**4. Tensioning of Canvas:** Ok, we eliminated the channels and came up with a better way to visually move the canvas, but how do we tension the sides of this? Since a physical channel causes too much friction, how about an invisible channel or maybe a magnetic field channel?

First, as illustration #2 shows, we use a polished stainless steel rod as a free rolling weight in the loop of the canvas. The weight of this floating roller tensions the canvas in both the up and down direction.



As the canvas goes down, the loop causes it to be unrolled against the back of the picture frame (no sliding friction) on the left and right side (Illustration #2). The sides of the canvas are impregnated with a ferrous liquid. Directly opposite this continuous ferrous strip on the canvas is a continuous magnetic strip on the back of the picture frame. As the canvas is unrolled, it is forced onto the magnetic strips at the sides (invisible channel). When the canvas goes up, it is peeled off this invisible channel.

The visual result of all this is stunning and far exceeded all design expectations and criteria.

- A. The canvas is ALWAYS in tension in four directions, no baggy shirt or creases
- B. There is NO GAP between the picture frame and the canvas
- C. The movement is a disappearing act, not a garage door going up
- D. If someone accidentally hits the canvas, it will pop back into place. Remember there are no fabric channels, only the invisible magnetic channel.
- E. Patents have been issued to Media Décor for this unique fabric movement

**5. Large Selection of Artwork:** From the classics to contemporary, our clients' tastes in art are individual and varied. Offering a very limited selection of artwork would not satisfy the personal taste or variations in room décor.

- a. Our collection of classic artwork is vast. We also have the ability to supply any artwork that is in the public realm.
- b. We have contracted many contemporary artists to offer limited editions. These limited editions grow every week.
- c. Custom art is also offered to clients who wish to use their own artwork or photography to personalize the unit to their own lifestyle and décor.
- d. All art is reproduced on the highest quality artist canvas using museum quality reproduction techniques

**5. Frame Selection** is basically unlimited. We have carefully selected about 30 solid wood frames to compliment most artwork. In many cases, clients and designers would like custom frames from manufacturers such as Roma and Larson-Juhl; we also offer these very high end frames at additional cost.

**6. Warranty:** this is vital to our clients; motors have moving parts and can fail. Our partnership with Lutron reflects the quality and performance of our product and is backed up with a no nonsense 8 year warranty from Lutron. Who else offers 24/7 technical service to both the consumer and the installing technicians?

**Conclusion:** To maintain the precision necessary to build this unit requires close tolerances, expensive components, and materials. All parts are either aluminum or stainless. No sheet metal or steel; no welding. All fastenings are stainless with aircraft SS lock nuts. For additional corrosion resistance, the entire structure is powder coated. The structure must be mechanically stable.

In any side by side real world comparison, the Media Décor unit is significantly superior in operation to any other system we have tested. But of course this comes at a higher price. For the client who demands silent operation, smooth canvas movement, and superior aesthetics, the Media Décor HideandChic™ is always the first choice.

