

The Flapper MKII
Instructions & Technical Specifications

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The Flapper MKII - Quick Start Guide

Before you begin, ensure that you have the following equipment:

- Flapper Base Unit
- Flap
- Power Supply
- Mounting Screw (black)
- Manual Controller (optional)

STEP 1

Place the base unit above, below, or to the side of your video projector. Depending on your location and circumstances, the unit may need to be secured with gaffer's tape, especially if the unit is to be rigged overhead.

Engineering Solutions is NOT RESPONSIBLE for damages or injury caused by improper mounting.

STEP 2

With the power switch in the 'off' position, connect the external power supply to the base unit. Then, plug the power supply into a suitable AC receptacle.

Turn the power switch on.

STEP 3

The unit will initialize itself, and the motor may spin back and forth a few times. The LCD display will show

SETUP?

YES NO

You can change the system settings by tapping the 'select' switch once to the left. Your systems options are:

1: IDLE PX

OK CHNG

where PX is either Manual Position #1 or Manual Position #2. The unit idles whenever a DMX signal is not present and a Manual Controller Module is not connected. Selecting 'OK' takes you to the next screen:

2:P1 = XX

OK CHNG

Where P1 is Manual Position #1. XX can be any number between 1 and 49. Selecting 'CHNG' will increment this value. The motor will move to the corresponding position.

3:P2 = XX

OK CHNG

Similarly, Manual Position #2 may be adjusted. XX is any number between 50 and 100.

For the greatest possible range of motion, P1 should be 1 and P2 should be 100.

4:SPD=X

OK CHNG

The speed at which a Manual transition takes place is adjusted in this menu. Your options are High (H), Medium (M) and Low (L). A high speed transition takes place as fast as physically possible. A low speed transition takes approximately 2 seconds. A medium transition falls somewhere in the middle.

Low speed is especially useful for reducing motor noise.

Clicking OK will place the unit in running mode.

Note that these menus are also found in the 'space' between channel 1 and channel 512. Connect a live DMX cable and see for yourself!.

If neither choice is selected, the unit will begin normal operation after about 6 seconds.

Attach the flap such that the lens of your projector is completely covered. Secure the flap with the included mounting screw. Do not

overtighten, as the threads in the motor assembly may strip.

STEP 4a (DMX Control)

With no DMX cable connected, the unit rests in idle mode and the display will read

**NO DMX
P1 @ XX**

Where XX is the position of P1.

Next, attach a 'live' DMX cable to the 'DMX' jack on the Flapper. The LCD Display should read

**YY @ XX
< >**

Where YY is the Flapper's DMX address and XX is the corresponding level, ranging from [00] to [FF]. The address may be changed by moving the 'select' toggle switch either left or right.

As mentioned earlier, the system setup menus live between channels 1 and 512. If you want to skip these menus, simply choose 'ESC' when the setup screen is displayed.

Step 4b (Manual Control)

Attach the optional Manual Controller Module to the Flapper using as much 3 Pin XLR cable as necessary.

The flap will move back and forth between Manual Position #1 and Manual Position #2, at the speed selected in the menus, in relation to the position of the switch in the controller module.

NOTE: If a DMX signal is present at the same time the Manual Controller Module is used, operation will be erratic. For best results, unplug one or the other.

That's it! You're up and running. Enjoy the show!

The Flapper - Technical Specifications

MECHANICAL:

Base Unit	5.5" wide x 2.5" tall x 7.5" deep
Flap	Trapezoidal 2.5" wide x 9.125" tall x 5.75" wide
Weight	1.75 pounds 793.79 grams 0.125 stones 0.0543916628 slugs
Maximum Flap Rotation	Approximately 110 degrees
Maximum Flap Speed	60 degrees in .18 seconds 110 degrees in .33 seconds
System Resolution	1.1 degrees / DMX step
Absolutely repeatable, super precise flap positioning, for each and every cue	Definitely

ELECTRICAL:

The DMX receiver circuitry in Flapper conforms to all USITT DMX512/1990 (4 uSec) specifications.

POWER SUPPLY:

The included external power supply provides *The Flapper* with a tightly-regulated supply of 5 volts DC @ 2 amps, center positive. Use of a different power supply or one with an incorrect power connector will damage the equipment and cost a great deal of money to repair.

POWER SWITCH:

Up is on, down is off. It is recommended that *The Flapper* be switched off when not in use.

TERMINATION SWITCH:

Adds a resistance of 121 across pins 2 and 3. Switch should be set to terminated if *The Flapper* is placed at the end of a DMX-512 line.

SELECT SWITCH:

This switch is can be momentarily toggled either left or right. Depending on the software mode chosen, it is used to (1) set the DMX address, (2) choose the flap's idle state, (3) adjust Manual Positions I & II, and (4) change the manual transition speed.

DMX-512 INPUT:

The Flapper responds to a standard DMX-512 signal via 5-Pin XLR connectors. This jack is wired according to the DMX-512 standard:

1. Ground / Shield
2. Data Complement (-, inverted)
3. Data True (+, non inverted)
4. Not used by *The Flapper*
5. Not used by *The Flapper*

MANUAL CONTROL CONNECTOR:

The Flapper can be manually controlled by connecting an appropriate switch to the 3-pin XLR-F jack. Yes, you can use as much standard mic cable as you need to get the job done.

Pinout:

1. Common
2. Position 1
3. Position 2

Connecting either pin 2 or pin 3 to pin 1 activates 'Manual Mode' and moves the flap to the appropriate position. If no connections are made and a DMX signal is not present, the flap will rest in the 'idle' state.

CAUTION: There exists a +5VDC potential between pins 2, 3 & 1 on the manual jack. Connecting this jack to *anything* other than an Engineering Solutions Switchbox or properly-wired switch of your own design can damage both *The Flapper* and your other equipment. So be careful.