



# USER GUIDE

***Kessler***<sup>TM</sup>

Innovative Tools for Filmmakers

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## Thank you for choosing Kessler Crane™

Your complete satisfaction is our priority, so please let us know if there is anything we can do for you.

You can find additional instructional documents on our website on the instructions page. We also have numerous demonstration videos in our Video Gallery, as well as on our online DVD (<http://dvd.kesslercrane.com>).

If you have questions about anything, please do not hesitate to contact us. We will be happy to assist you.

Thank you again,

Kessler Crane™

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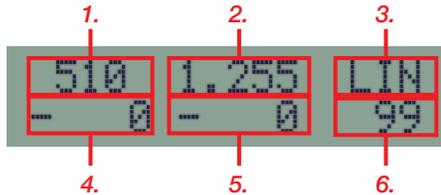
*Note: Due to the nature of a firmware based product such as the ORACLE, the contents of this manual may not fully represent the latest version of the firmware. Please check online at [KesslerCrane.com](http://KesslerCrane.com) for the latest version. The version of this manual is 2.1.c and is relevant to the 2.1 version firmware on the ORACLE.*

# ORACLE OVERVIEW

This section will cover the basic functions of the ORACLE and what each button and dial controls in the system.

## a. Backlit LCD screen

The LCD screen displays menu options and current status of the ORACLE. Below is a sample of the home screen and values.



1. **MAX SPEED** value (28 - 1000) see **g.**
2. **DAMPING** in seconds (.055s - 2.55s) see **h.**
3. **DEADBAND** mode (LIN or LOG) see **i.**
4. Current Joystick **Y** speed value (+/-)
5. Current Joystick **X** speed value (+/-)
6. **LIN/LOG** value (0-99 in LIN mode and 99-0 in LOG mode).

To access child menus from the home screen, press the **MENU** button (**b.**) on the ORACLE.

## b. MENU Button

The **MENU** button is used to call up the ORACLE menu when on the home screen. It can also be used to escape back to parent menus and cancel changes when altering settings in the ORACLE options.

## c. ENTER Button

The **ENTER** button is used to save settings when making changes to the ORACLE options. Alternatively, the center **JOYSTICK BUTTON** (**j.**) can also be used in most cases.

## d. e. f. Memory banks 1, 2, and 3

The ORACLE has 3 memory banks for storing and playing back camera moves. Each bank can be cleared by holding the corresponding button down for 5 seconds. The **1, 2, AND 3 BUTTONS** can also be used to select their corresponding menu options when navigating the ORACLE settings menus.



For more information on recording and playing back camera moves, reference that section in this quick start guide or in the ORACLE manual.

## g. MAX SPEED control dial

This dial is used to control the maximum speed of the elektraDRIVE motors. The value is adjustable from 28 (being the slowest) to 1000 (being the fastest) and is displayed in the left column of the top row on the home screen. For the sliders, these values are arbitrary and will vary depending on the which series of motor you are using. Adjust and test as needed to achieve the speed required.

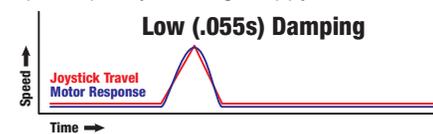
This dial can be adjusted in real-time during a camera move to ramp speed up and down. These values are also recorded if creating a recording to one of the memory banks.

## h. DAMPING control dial

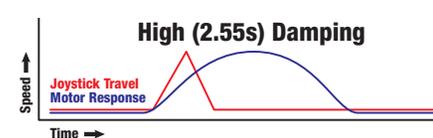
This dial is used to control the damping of the elektraDRIVE motors. The value is adjustable in seconds from .055s to 2.55s and is displayed in the center column of the top row on the home screen.

Damping is the amount of time the motor takes to achieve maximum speed (**g.**). This helps smooth the motion of moves.

A low value will make the motor jump to full speed quickly creating snappy moves.



A higher value will slowly ramp the motor up to speed and then back down when the joystick is released.



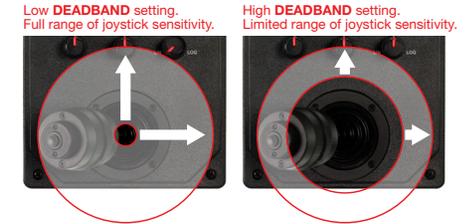
This is useful when wanting to create very smooth moves with gradual start and stop motions.

Select the time frame you want in seconds to determine how much damping is applied to the motor start up and shut down.

## i. DEADBAND control dial (LIN/LOG)

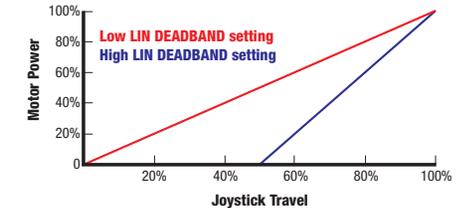
The **DEADBAND** dial controls the sensitivity of the joystick. The values can be adjusted from 0 - 99 in LIN (linear) mode and 99 - 0 in LOG (logarithmic) mode.

Deadband is the circle of travel from the center of the joystick before power is sent to the motor(s).



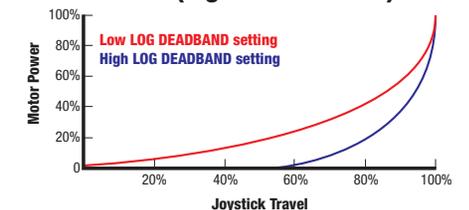
In LIN (linear) mode, 50% travel of the joystick equates to a 50% increase in speed. By adjusting the LIN value, you can increase and decrease the sensitivity of the joystick. Higher numbers will make the joystick less sensitive toward the middle. Any remaining travel of the joystick will be in linear values.

### LIN (linear mode)



In LOG (logarithmic) mode, the movement of the joystick has an exponential effect on the speed of the motors. In this mode, the first 50% of joystick will increase power from 0 to approximately 10% on the motor(s). The remaining 50% of joystick will increase speed from approximately 11% to full power.

### LOG (logarithmic mode)



Logarithmic mode is useful if fully zoomed in with your camera. It allows very precise, slow control at the center of the joystick with the ability to perform quick moves as the joystick is moved to the outer limits.

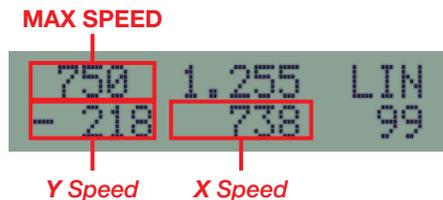
#### j. Joystick Button

The **JOYSTICK BUTTON** is used for making selections in the menu system of the ORACLE. It functions the same as the **ENTER** button (c.)

#### k. Joystick

The Joystick is used for moving sliders left and right (X travel of joystick) and Pan/Tilt heads (X and Y travel of joystick). It is also used for navigating the menu system of the ORACLE.

The current position values of the joystick are displayed in the first two columns of the second row on the ORACLE home screen (a.). The first number displays the current Y speed value while the second set of numbers displays the X speed value.



These values are dependant on the **MAX SPEED (g.)** setting and will vary between 28-1000 depending on what the **MAX SPEED** is currently set to.

## FEATURES AND ACCESSORIES

#### Included Items:

- ORACLE Controller
- 100v-240v input (50-60Hz, 1.4A) AC Power Supply w/ North America Wall Plug.
- 25ft CAT5 Cable

#### Optional Accessories:

- elektraDRIVE 12v DC Power Adapter
- elektraDRIVE 12v Battery
- 12v Y Adapter
- Australia / New Zealand Region Wall Cord

- F.I.G.S. / Continental Europe Region Wall Cord

#### Supported Features & Specifications:

- Backlit LCD display with menu and setting values.
- Fully adjustable controls for Max Speed, Dampening, & Dead Band.
- Movement Recording / Memory Function with three memory banks.
- Time Lapse control
- Premium Multi-Function Joystick
- Joystick orientation can be easily set in the menu.
- Cabling is CAT5 / CAT6 cable with RJ45 connectors (standard network cable).
- Powered by standard AC power supply with wall plug, or optional 12v DC adapter and battery pack.
- Optional SmartLapse advanced time lapse recording option

*The ORACLE controller can only control either the Revolution Head or an elektraDRIVE motor at one time. To perform 3-axis movements with both the Revolution Head and a elektraDRIVE motor for a slider at the same time, you will need two controllers.*

## CONNECTING THE ORACLE

**Powering up and connecting your ORACLE to an elektraDRIVE motor or Revolution pan/tilt head.**

The ORACLE does not have an on/off switch. To power the unit on, simply connect it to the provided power source.

Connect either an elektraDRIVE motor or Revolution head using the included CAT5 network cable. If you need a longer or shorter cable, any standard CAT5 network cable can be used in place of the provided one.

The Revolution Head requires two RJ45 plugs to be connected to the CAT5 cable coming from the ORACLE unit. A 2-way CAT5 splitter is included with the Revolution head so both motors can be connected.

## REVERSING JOYSTICK ORIENTATION

**The ORACLE joystick can be adjusted to suit your preference or particular setup.**

If you find that the joystick moves your slider/dolly/head in the opposite direction of what you would like, you can reverse the direction the joystick moves the motor(s).

The joystick can be set to move in clockwise (CW) or counter clockwise (CCW) on both the X and Y axis independently.

1. From the home screen, press the **MENU** button.



2. Press the **1 BUTTON** to select 1: Joystick



3. To adjust 1:Tilt (y direction of joystick) press the **1 BUTTON** to toggle between CW and CCW



4. To adjust 2:Pan (x direction of joystick) press the **1 BUTTON** to toggle between CW and CCW.



*This is the setting you want to adjust for use on sliders / dollies.*

5. When complete, press the **ENTER** button to return to the home screen.

## SLIDER/DOLLY RECORD & PLAYBACK

**This section will cover recording and playing back real-time camera moves on a Kessler Crane slider/dolly unit.**

1. Connect the ORACLE to the elektraDRIVE motor with a standard CAT5 cable.

2. Connect the power to the ORACLE.
3. Select 2:Slider by moving the joystick up or down, or by hitting the red **2 BUTTON**.



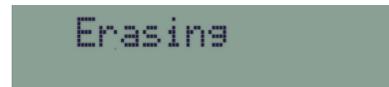
4. Press **ENTER** to select.
5. Orient the slider so that the elektraDRIVE motor is to your left.
6. Use the joystick to move the camera carriage to your desired start position. Note this position. For convenience you can use a piece of tape, wax pencil, or optional measuring strip.



7. The ORACLE has 3 memory banks indicated by the **1, 2** and **3 BUTTONS**.



8. Press and hold any numbered button. for 5 seconds to clear that particular memory bank.
9. The screen will display Erasing



10. If you have the optional SmartLapse feature, you will be presented with a menu screen to select 1:Normal or 2:SmartLapse. Select 1:Normal.



*If you do not have SmartLapse, Normal is auto selected and the screen displays:*



11. Move the joystick left / right or press the center **JOYSTICK BUTTON** to begin recording your camera movement.
12. The **MAX SPEED**, **DAMPING**, and **DEADBAND** dials can all be adjusted during this time and will be recorded as will the timing.
13. All movement is recorded in real time and a seconds counter is displayed on the screen.



14. To stop recording press the same memory bank **BUTTON (1, 2, OR 3)** you chose earlier or press the center **JOYSTICK BUTTON**.
15. To play back your recorded movement, press the **BUTTON (1, 2, OR 3)** for the memory bank you recorded under.
16. The screen will prompt you to return the carriage to the start position.



17. Use the joystick to move the carriage to your marked start position.



18. Press your memory bank **BUTTON (1, 2, OR 3)** again to start playback. The screen will display Slider On with a countdown of cycles remaining.



19. To cancel the playback, move the joystick on the ORACLE and you will be returned to the home screen.

**Quick Tip:** When beginning a camera move recording, you can press the center button on the joystick to start a recording without moving the camera. This is useful if you want to create a time

*delay before camera movement starts.*

## SLIDER/DOLLY TIME LAPSE CALIBRATION

**Before running your first time lapse on a slider or dolly, perform the calibration procedure to insure proper function.**

1. Connect the ORACLE to the elektraDRIVE motor with a standard network/CAT5 cable.
2. Connect the power to the ORACLE.
3. Select 2:Slider by moving the joystick up or down, or by hitting the red **2 BUTTON**



4. Press **ENTER** to select
5. Press the **MENU** button then press the **2 BUTTON** to select 2: Time Lapse



6. Press the **1 BUTTON** to enter 1:Simple mode



7. Press the **3 BUTTON** to enter 3:Cal (calibration) mode



8. Press the **1 BUTTON** to select the 10 minute calibration or press the **2 BUTTON** to select the 30 minute calibration. Press **ENTER**.



*Note: You can run either a 10 minute or 30 minute calibration. The longer the calibration time, the more accurate the results.*

9. Make sure the slider motor is positioned to your left and move the carriage to the left side (closest to the motor) of the track using the joystick.

10. This procedure requires measuring the distance the slider moves from start point to end point. The easiest way to do this is to move the carriage all the way to the end of the track (point A), run the calibration, then measure the gap between point A and point B when complete.



11. Once your start point has been set, press the **ENTER** button to begin the calibration



12. The screen will display Slider On with a countdown.



13. Let the calibration complete. If you need to cut the calibration short you can hit **ENTER** at any time. *Note: The shorter the calibration time, the less accurate the calibration.*

14. To complete the calibration, measure the distance between your start point (A) and ending point (B).



Move the joystick left or right to adjust the values in the ORACLE to match the distance in inches or centimeters that the carriage moved during the calibration.



*This number will vary in distance*

*depending on your specific setup / motor selection. Press **ENTER**.*

15. Press **ENTER** again to save calibration data, or **MENU** to cancel calibration data.



16. Your system is now calibrated for accurate moves as the ORACLE now knows how far over time the carriage will move with setup used in calibration.

**Quick Tip:** If moving between extreme environmental conditions, major camera weight changes, or different incline angles, we recommend running the calibration again to insure accuracy.

## SLIDER/DOLLY SIMPLE MODE TIME LAPSE

**The most basic time lapse option for a slider. Distance and time are the only variables that need be adjusted. The ORACLE will do the rest of the work for you.**

1. Connect the ORACLE to the elektraDRIVE motor with a standard CAT5 cable.
2. Connect the power to the ORACLE
3. Select 2:Slider by moving the joystick up or down, or by hitting the red **2 BUTTON**



4. Press **ENTER** to select
5. Press the **MENU** button then press the **2 BUTTON** to select 2:Time Lapse



6. Press the **1 BUTTON** to enter 1:Simple mode



- In Simple mode, you only need to set the distance and amount of time you want the slider to travel said distance.
- Press the **1** **BUTTON** to select **1:Distance**

```
1:Distance 3:Cal
2:Time ENTER:Run
```

- Move the joystick up and down to change the **Y:Distance** amount. Distance is displayed in both inches and centimeters.

```
Y:Distance
8.4IN 21.3CM
```

- Once you have your desired distance adjusted press **ENTER** to save. This will bring up the next menu for setting time.
- Move the joystick up and down to select **Y:Time**.

```
Y:Time
30.00 M
```

Time can be adjusted in decimal minutes (M), decimal hours (H), or decimal days (D).

- Once you have your desired time set press **ENTER**
- Press **ENTER** again to begin time lapse movement

```
1:Distance 3:Cal
2:Time ENTER:Run
```

- Press the **1** **BUTTON** to run

```
Menu:Exit 1:Run
ENTER:Edit
```

- The screen will display **Slider On** with a timer countdown.

```
Slider On 5998
```

Note: If you selected a very long time period, movement of the carriage may not be evident. If the ORACLE is counting down, the slider is moving.

**Quick Tip:** To cancel or edit a time lapse move once it has started, press any of the red buttons on the ORACLE.

## ADJUSTING SIMPLE MODE DEFAULT MOTOR POWER

In some cases it is necessary to adjust the default motor power for heavy loads or inclines.

The motor power setting tells the ORACLE how much voltage to send to the elektraDrive motor. The default power is set to 40 for Simple Mode but this can be raised if the situation calls for it.

You can also use this setting to reverse the direction of a Simple Mode move by reversing the value of the power from a positive number to a negative number and vice versa.

- Connect the ORACLE to the elektraDRIVE motor with a standard CAT5 cable.
- Connect the power to the ORACLE
- Select **2:Slider** by moving the joystick up or down, or by hitting the red **2** **BUTTON**

```
1:Head Unit
2:Slider <--
```

- Press **ENTER** to select
- Press the **MENU** button then press the **3** **BUTTON** to select **3:Ut1**

```
1:Joystick 3:Ut1
2:Time Lapse
```

- Press the **2** **BUTTON** to enter the **2:SimpleMode PWR** menu

```
1:Current Sense
2:SimpleMode PWR
```

- To adjust the SimpleMode power level, press the **2** **BUTTON**.

```
1:Current Sense
2:SimpleMode PWR
```

Note: If you need to re-set the power to default the default level, press the **1** **Button** to enter **1:Default Power** reset menu.

- You can adjust the Simple Mode power by moving the joystick up and down (Y

direction). Power 40 is the default setting.

```
Set Simple Mode
Power 40
```

If you are moving the camera on a vertical and need more power, slowly increase this number and test until you get the results you need. For a totally vertical move with a standard DSLR camera, try adjusting power to 70 - 80.

If you need your camera to move in the opposite direction of the default, use a negative number for Simple Mode power. This will reverse the direction of the motor and subsequently, the direction of the camera movement.

```
Set Simple Mode
Power -40
```

If your move is going from left to right in Simple Mode with a power of 40, changing the Simple Mode default power to -40 will reverse the direction to right from left.

- Press **ENTER** to save or cancel your changes.

```
Save:Enter
Cancel:Menu
```

- Press **ENTER** again to save your settings or **MENU** if you want to cancel the changes.
- After completing the Simple Mode power adjustments and your test results are favorable, re-run the time lapse calibration to correct for the new motor power setting.

**Quick Tip:** To determine what power to level to enter, set up your rig in the position you intend to use. In live mode, turn the power dial all the way down. Move the joystick in the direction you need the camera to move and slowly turn the power dial up until you get a smooth, non-pulsing move. Make note of the power reading on the screen and use this number for your Simple Mode Power level.

## SLIDER/DOLLY ADVANCED MODE

In Advanced mode, you can program complex motor movements on a slider/dolly/shuttle pod. If you need to create a complex time lapse move, we recommend using the optional SmartLapse mode as it is easier to program.

- Connect the ORACLE to the elektraDRIVE motor with a standard CAT5 cable.
- Connect the power to the ORACLE
- Select **2:Slider** by moving the joystick up or down, or by hitting the red **2** **BUTTON**

```
1:Head Unit
2:Slider <--
```

- Press **ENTER** to select
- Press the **MENU** button then press the **2** **BUTTON** to select **2:Time Lapse**

```
1:Joystick 3:Ut1
2:Time Lapse
```

- Press the **2** **BUTTON** to enter **2:Advanced mode**

```
1:Simple
2:Advanced
```

- The advanced mode menu has three main settings. **1:Move**, **2:Cycles**, and **3:Pwr** (power). Press the **1** **BUTTON** to choose **1:Move**.

```
1:Move 2:Cycles
3:Pwr ENTER:Run
```

The menu system will automatically progress through the other two menu options during initial setup.

- The first setting that can be adjusted is the **Y:Motor On** time. The default is **0.05 S** (seconds). We recommend leaving this at the default for starting out. Press **ENTER** to accept the setting.

```
Y:Motor On
0.05 S
```

This setting tells the motor how long to

remain on. Stepper motors have two states. On and off. This setting determines how long the motor is on for each step. The default setting is a good starting point for time lapse work.

*NOTE: For more information on how a stepper motor works and how these values effect movement, see the **Stepper Motors Demystified** section of this manual.*

- The next screen is for adjusting the Y:Motor Off time. Again, the default is 0.05 s (seconds). This is the amount of time the motor remains off before running again. Leave this at the default for now by pressing **ENTER**.



- The next setting for is the Y:Cycles amount. Cycles are the number of times your motor will cycle on/off for the move. To increase or decrease the amount of time you want the move to last, toggle the **JOYSTICK** up/ down to adjust the number of cycles. The time value will change to tell you how long the move will take. Once you have your cycle settings adjusted, press **ENTER** to continue.



- The final setting is Y:Slide Power. The default power is 40 and is a good starting point for time lapse work. The power setting tells the ORACLE how much power to send to the motor when it is on. Press **ENTER** to continue.



*Note: The Y:Slide Power setting can be either a positive number or negative number. This will determine whether the carriage travels left or right. Two determine whether you need a negative or positive number, make note of the X/Y values on the home screen. If you move left and the X values are negative, you'll know that you need a negative*

*value set for Y:Slide Power to move left and a positive Y:Slide Power to move right.*

- Your advanced settings are now complete and you are returned to the main menu screen for the advanced setup. You can now press the **1** **BUTTON** to edit the Move settings, the **2** **BUTTON** to edit the Cycles settings, the **3** **BUTTON** to edit the Pwr (power) settings or **ENTER** to run. Press **ENTER** to continue.



- Press the **1** **BUTTON** to select the 1:Run option and begin running the move.



- The screen will now display a countdown of cycles for the move you setup.



- To cancel the playback and return to the menu, press **ANY** **BUTTON** on the ORACLE.

**Quick Tip:** To quickly navigate the Slider Advance Mode menus, move the joystick left and right to jump back and forth between settings. Move the joystick up and down to change values and the center button to save.

## LEVERAGING THE POWER OF ADVANCED MODE

Advanced mode can be used for much more than just time lapse work. Experiment with different motor on / off values and slide power settings to create any move you need.

For example, you could attach a rotating plate to the elektraDrive motor and set the ORACLE to rotate the plate 20 degrees every 3 seconds for taking virtual reality (QTVR) product photos. This would give you a full 360 degree spin in 20 degree increments

with 3 seconds between each move to take a picture. The entire sequence would take 54 seconds to complete.

Advanced mode is very powerful. With a little creativity and simple math, you can accomplish some amazing things. Check out the KesslerCrane.com web site for more ideas.

## REVOLUTION HEAD RECORD & PLAYBACK

This section will cover recording and playing back real-time camera moves on a Kessler Crane Revolution pan/tilt head.

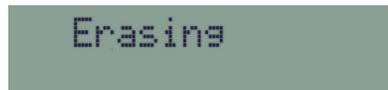
- Connect the ORACLE to the Revolution head with a standard CAT5 cable.
- Connect the power to the ORACLE
- Select 1:Head Unit by moving the joystick up or down, or by pressing the red **1** **BUTTON**



- Press **ENTER** to select
- Use the joystick to move the Revolution head to your desired start position.
- Press and hold a numbered memory bank **BUTTON (1, 2, OR 3)** for 5 seconds to clear that memory bank



- Screen will say erasing



- If you have the optional SmartLapse feature, you will be presented with an menu screen to select 1:Normal or 2:SmartLapse. Select 1:Normal.



*If you do not have SmartLapse, Normal is auto selected and the screen*

*displays:*



- Take note of where the head is positioned. Mark positions with a wax pencil if necessary so you can return to it when prompted. Another way to mark start position is to mount a laser pointer to your Revolution head. Mark the point on the wall, floor, ceiling, etc. of where the laser is pointing. When the ORACLE prompts you to return the Revolution head to the start position, you can simply maneuver the head so the laser points to the same location. This assures the head is starting out in the same position.
- Move the joystick or the press **CENTER** **BUTTON** on the joystick to start recording your camera movement



- MAX SPEED, DAMPING,** and **DEADBAND,** can all be adjusted during this time and will be recorded as will the timing
- All movement is recorded in real time and a seconds counter is displayed on the screen



*Memory Bank      Seconds Counter*

- Press the same memory bank **BUTTON (1, 2, OR 3)** again to stop the recording
- To play back your recorded movement, press the **BUTTON (1, 2, OR 3)** for the memory bank you recorded it under
- The screen will prompt you to return the Revolution head to the start position marked in step 9



- Use the joystick to move the head back to your start position
- Press your memory bank **BUTTON (1, 2, OR 3)** again to start playback. The screen will display Play Back with

the amount of time remaining.



- To cancel the playback, move the joystick on the ORACLE and you will be returned to the home screen.

**Quick Tip:** The Joystick can be moved during a recorded playback to stop all playback moves immediately. It acts as an “emergency brake” during live playback to prevent accidental damage.

## REVOLUTION HEAD ADVANCED MODE

Using Advanced Mode in the ORACLE to create custom time lapse moves. If you have the optional SmartLapse feature, we recommend using it instead as it is easier to accomplish complex moves very simply.

- Connect the ORACLE to the Revolution head with a standard CAT5 cable.
- Connect the power to the ORACLE
- Select 1:Head Unit by moving the joystick up or down, or by pressing the red 1 BUTTON



- Press ENTER to select
- Press the MENU button then press the 2 BUTTON to select 2:Time Lapse



- Press the 2 BUTTON to enter 2:Advanced mode



- When setting up a time lapse on the Revolution head, both Pan and Tilt need

to be programmed. Press the 1 BUTTON to enter 1:Pan setup.



- The first setting that can be adjusted is the PAN Y:Motor On time. The default is 0.05 S (seconds). We recommend leaving this at the default for starting out. Press ENTER to accept the setting.



This setting tells the pan motor how long to remain on. Stepper motors have two states. On and off. This setting determines how long the motor is on for each step. The default setting is a good starting point for time lapse work.

*NOTE: For more information on how a stepper motor works and how these values effect movement, see the Stepper Motors Demystified section of this manual.*

- The next screen is for adjusting the PAN Y:Motor Off time. Again, the default is 0.05 S (seconds). This is the amount of time the pan motor remains off before running again. Leave this at the default for now by pressing ENTER.



- The next setting in the PAN mode is PAN Y:Power. The default power is 40 and is a good starting point for time lapse work. The power setting tells the ORACLE how much power to send to the motor when it is on.



*Note: The Y:Power setting can be either a positive number or negative number. This will determine which direction the Revolution head pans. Two determine whether you need a negative or positive number, make note of the X/Y values on the home screen. If you pan left and the X values are negative, you'll know that*

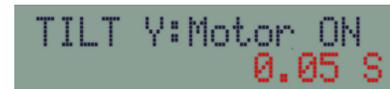
*you need a negative value set for Y:Power to pan left and a positive Y:Power to pan right. The same holds true for TILT values on the Y axis. These values can vary depending on your joystick orientation setting so it is good practice to check before setting up a time lapse in advanced mode.*

**Quick Tip:** If you do not want the Revolution head to PAN or TILT, set the Y:Power to 0 so the motor does not move. For example, if you want the head to only TILT and not PAN, set your PAN Y:Power setting to a value of 0 and the PAN motor will not run.

- The final setting for PAN mode is the PAN Y:Cycles amount. Cycles are the number of times your motor will cycle on/off for the PAN move. To increase or decrease the amount of time you want the pan to last, move the JOYSTICK up/ down to adjust the number of cycles. The time value will change to tell you how long the pan will take. Once you have your PAN settings adjusted, press ENTER to continue.

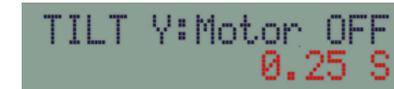


- Once you complete the Pan setup, the menu system will automatically continue to the TILT setup screens. The Tilt settings are identical to the Pan settings. The only difference is that they operate in the Y (up and down) direction.
- The first setting that can be adjusted for TILT mode is the TILT Y:Motor On time. The default is 0.05 S (seconds). We recommend leaving this at the default for starting out. Press ENTER to accept the setting.

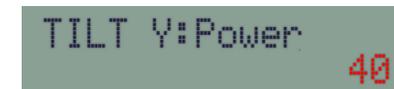


- The next screen is for adjusting the TILT Y:Motor Off time. The default is 0.25 S (seconds). This is the amount of time the tilt motor remains off before running again. Leave this at the default for now by pressing

ENTER.



- The next setting in the TILT mode setup is TILT Y:Power. The default power is 40 and is a good starting point for time lapse work. If you have a heavy payload to move, you may need to adjust this to a higher level to lift the weight efficiently.



*Note that the Y:Power setting can be either a positive number or negative number. This will determine which direction the Revolution head tilts. See step 10. for more information.*

- The final setting for TILT mode is the Tilt Y:Cycles amount. Cycles are the number of times your motor will cycle on/off for the TILT move. To increase or decrease the amount of time you want the tilt to last, move the JOYSTICK up/ down to adjust the number of cycles. The time value will change to tell you how long the tilt will take. Once you have your TILT settings adjusted, press ENTER to continue.



- Your PAN and TILT settings are now complete and you are returned to the main menu screen for the advanced setup. You can now press the 1 BUTTON to edit the PAN settings, the 2 BUTTON to edit the TILT settings, or ENTER to run. Press ENTER to continue.



- Press the 1 BUTTON to select the 1:Run option and begin running the move.



- The screen will now display the countdown of cycles for both the PAN and TILT moves based on your settings



- To cancel the playback and return to the menu, press **ANY BUTTON** on the ORACLE.

**Quick Tip:** To quickly navigate the PAN/TILT menus, move the joystick left and right to jump back and forth between settings. Move the joystick up and down to change values and the center button to save.

## SMARTLAPSE TIME LAPSE MODE

The *optional* SmartLapse mode can be used on either a slider, dolly or Revolution head. With SmartLapse, you can record a real-time camera move to one of the memory banks and then play that move back over a longer length of time (up to 29.5 days).

- Connect the ORACLE to the elektraDRIVE motor(s) with a standard CAT5 cable.
- Connect the power to the ORACLE
- Select 1:Head or 2:Slider depending on which unit are using.



- Turn **DAMPING** dial all the way down to 0.05s.
- Adjust **DEADBAND** dial to a value of 10 on the LIN side.

Adjust **DAMPING** dial to 0.05s



Adjust **DEADBAND** dial to LIN 10

- Press and hold down one of the 3 memory bank

**BUTTONS (1, 2, OR 3)** for 5 seconds.



The word **Erasing** appears for a few seconds.



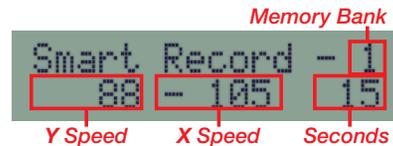
- In the next menu select 2:SmartLapse by pressing the 2 **BUTTON**



- Make sure to note your start position by using marking tape or a white wax pencil so that you may return to it when prompted.



- Move the joystick to start the recording right away or press the center joystick button to start recording without moving the head. The following screen is displayed during recording:



Note: To get soft starts and stops it is best to have the speed turned all the way down then push the joystick all the way the direction you want to move as you slowly (over 10 seconds or so) dial the speed up to the desired level then back down to stop. Also, keep in mind this is an actual recording so keep your maximum speed slow, (CineSlider and Shuttle Pod: 200. Pocket Dolly: 300. Revolution Head: 100). You may notice that the movement while recording is

jerky or pulsing. This is normal as that is the result of the pulse recording method of SmartLapse.

- To stop recording press the same memory bank **BUTTON (1, 2, OR 3)** you chose earlier or press the center **JOYSTICK BUTTON**.
- To playback the SmartLapse recording, press the memory bank **BUTTON (1, 2, OR 3)** that you recorded to and adjust the play back time using the joystick.



You can adjust this time from the time you took to make the recording up to 29.5 days.

- To accept the time you selected press **ENTER**
- Return to your marked start position



- Press the memory bank **BUTTON (1, 2, OR 3)** again to start the playback.



Memory Bank Time Remaining

- To cancel the playback and return to the menu, press **ANY BUTTON** on the ORACLE.

## 3 AXIS TIME LAPSE

With two ORACLE controllers, it is possible to setup a 3 axis time lapse by mounting a Revolution head to a slider or dolly. This section will cover a few tips for 3 axis work.

When doing a 3 axis time lapse, it is much easier to record your slider/dolly move independently of your pan/tilt Revolution head move.

For example, let's say you want to do a 4 hour time lapse. You want your slider to move the camera left to right as your Revolution head starts your shot at the top of a tree and transitions to the bottom of a flower.

To do this 3 axis move, break it into two separate recordings. First, program one ORACLE to move the slider the desired distance over the 4 hour time period. You can use Simple Mode time lapse or SmartLapse to setup this 4 hour move.

Once you have the side to side move recorded, you will know the start position and ending position on that axis.

Now move the slider/dolly back to the start position and use your second ORACLE to position the start position of your Revolution head. Aim your camera where you want your time lapse to start and mark the head's position then move your slider/dolly to its ending point.

Now you can set the ending point of your Revolution head. The easiest way to do this is to use SmartLapse and record your desired pan/tilt head move. End it so your camera is pointed where you want your time lapse to complete.

All you have to do now is set this move to play back over 4 hours (the same time set on the first ORACLE for the slider/dolly move) via SmartLapse.

Return both the slider/dolly and the Revolution head back to their starting positions and begin playback on each ORACLE. Your move will now be synced over 4 hours and will produce a unison result that looks like it was programmed as one.

## USING FLASH MARK FOR COMPOSITING

The screen will display flash mark at the beginning of playbacks and can be used as a digital clapboard for syncing layered footage.

When Playing back a live camera move, you will notice the screen briefly displays this:



You can use the “Flash Mark” screen as a visual clapper board when you need to sync footage.

This is useful if you are layering several recordings on top of one another for compositing work.

If you hold the Oracle in front of your camera and press a memory bank button for play back, you can use the “Flash Mark” screen flash as your sync point.

It is a good idea to leave a few seconds of no movement at the front of your recorded move to allow you time to get the ORACLE out of frame before the camera move starts.

## STEPPER MOTORS DEMYSTIFIED

**Understanding how a stepper motor works can aid greatly when doing advanced configurations with the ORACLE. This section will briefly cover the basics of a stepper motor and how it interacts with an ORACLE.**

The stepper motors, used in the Kessler Crane systems, have only 4 variables with which we are concerned. **ON, OFF, CYCLES,** and **POWER.**

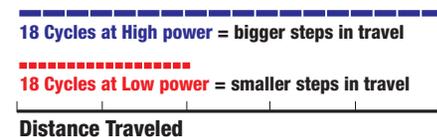
**ON** and **OFF** are just that. The motor is either on or it is off. The **POWER** determines how much the motor moves when it is in the on mode. **CYCLES** is how many times the on/off sequence occurs.

So let’s go through a basic setup to explain further. If we set the motor **ON** time to be .5 seconds and the motor **OFF** time to also be .5 seconds, a complete **CYCLE** of on/off would take 1 second. If we ran this on/off cycle 30 times, the entire move would take 30 seconds. The only variable we are missing in this equation is **POWER.**

**POWER** determines how far the motor will move when it is on. The lower the power, the less distance it will travel. The greater the power, the greater the distance. We liken this to the difference between walking and running.

In our sample, we know the motor turns **ON** and will move for .5 seconds in each **CYCLE.** By adjusting the **POWER,** we can determine how far it moves in that half second. If you want a slow, short move, you would use a low power. For a faster, long move, a high power would accomplish this.

The following charts show a generic example of the difference between a high **POWER** setting and a low **POWER** setting while keeping the **ON, OFF,** and **CYCLES** variables constant.



The above sample is very basic but it gives you an idea of what you can do by adjusting only one variable. In Advanced mode on the ORACLE, you can individually adjust each variable (**ON, OFF, CYCLES, POWER**) to create custom moves.

For example, lets say you have a Kessler Shuttle Pod setup on a 30 foot track and you want to program the ORACLE so the motor comes on every 10 minutes and moves the Pod 1 foot. In this example, we know that our motor **OFF** time should be 10 minutes so there is a 10 minute gap between each time the motor turns on and moves the Pod. If we are moving the Pod 1 foot in each **CYCLE** and our track is 30 feet long, we’ll want to keep the cycles to less than 30 so we don’t run out of track.

The only two variables left is **ON** time and **POWER.** These two variables are the only unknowns in this sample. We’ll need to do some experimentation here to find the proper combination of **ON** time and **POWER** that translates into a 1 foot move on the Pod. In this example, we can leave the **POWER** at the default of 40 and simply adjust the **ON** time until we get 1 foot in travel. Let’s say that time ends up being 2 seconds for the sake of this example (this number will vary depending on your specific setup and motor being used).

Now we know each variable to create a move every 10 minutes in 1 foot increments down

a 30 foot track. We will set the motor **OFF** time to 10 minutes, the motor **ON** time to 2 seconds, the **POWER** defaulted to 40, and the **CYCLES** set to 30. When we hit run, the Pod will move 1 foot and stop. 10 minutes later, the next cycle will start and the Pod will move another 1 foot and stop. It will do this 30 times (cycles) before the move is complete.

You are not just limited to linear moves like this. Another real-world example would be setting up a turn table on an elektraDRIVE motor where you just want the motor to turn on and stay on for a certain period of time.

If you wanted your turn table to spin for 10 minutes, you could define a motor **ON** time of 10 minutes at **POWER** 40 and 1 **CYCLE.** This would spin the table for 10 minutes and then stop (1 cycle).

This may sound complicated all written out but once you get some practical experience with the ORACLE, this will be easier to make sense of. Adjusting the 4 variables in advanced mode of the ORACLE will allow you to create just about any move you can imagine for an endless number of configurations.

## REVOLUTION HEAD TIME LAPSE TIPS FOR ADVANCED MODE

Here are some approximate figures to use as a starting point. These figures were populated with a Canon 7D equipped with an extended battery grip and a 15mm lens. Using these figures should get you close to the reported results but you may need to adjust the **MOTOR OFF** time to tweak the movement over time to perfect your results.

Being the load on the pan always remains the same, you will find very little variation once you have established the common result to your unit. A few tips.

- Try to get your camera as close to perfect center of gravity that is balanced up and down as well as forward to back.
- Leave your **MOTOR ON** time set to **.05 SEC** and your **MOTOR POWER** set to **50**.
- Make your distance over time adjustments by lengthening or shortening the **MOTOR OFF** time.

**PAN:** Keep **MOTOR ON** to **.05 SEC**, **MOTOR POWER** to **50** and run your **CYCLES** to cover the time you want the time lapse to take (i.e. If you want a 60 minute time lapse, adjust the **CYCLES** up to a number that the ORACLE says will last 60 minutes).

Degrees of PAN movement over:	30 Minutes	1 Hour	2 Hours	4 Hours
	<i>motor off time</i>	<i>motor off time</i>	<i>motor off time</i>	<i>motor off time</i>
<b>22.5 °</b>	4 seconds	8 seconds	16 seconds	32 seconds
<b>45 °</b>	2 seconds	4 seconds	8 seconds	16 seconds
<b>90 °</b>	1 second	2 seconds	4 seconds	8 seconds
<b>180 °</b>	.5 seconds	1 second	2 seconds	4 seconds

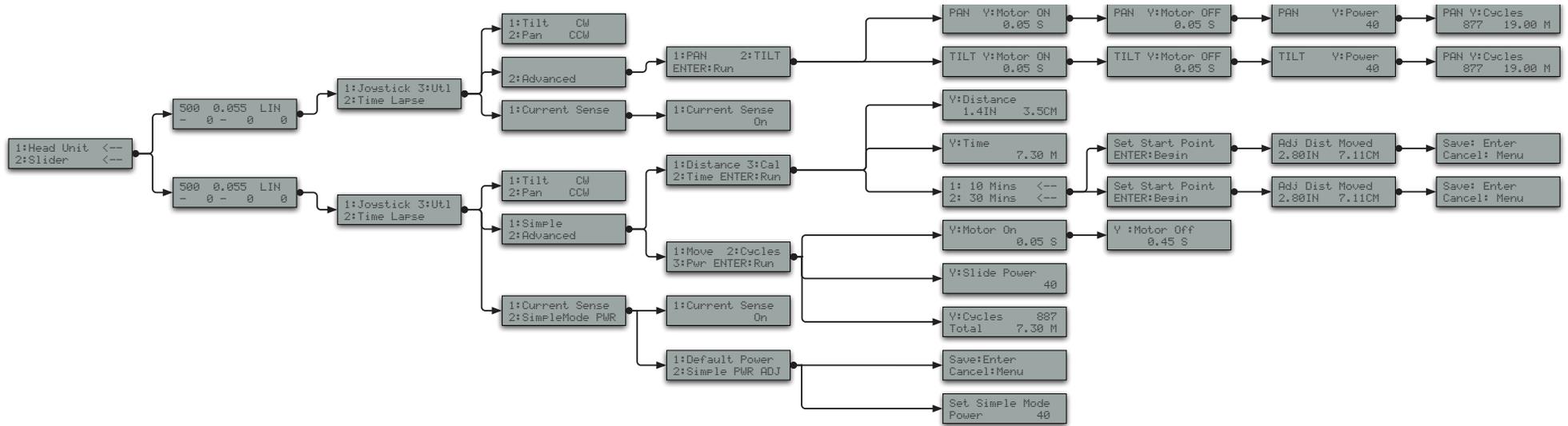
**TILT:** Keep **MOTOR ON** to **.05 SEC**, **MOTOR POWER** to **50** and run your **CYCLES** to cover the time you want the time lapse to take (i.e. If you want a 60 minute time lapse, adjust the **CYCLES** up to a number that the ORACLE says will last 60 minutes).

*These figures were populated with a camera set up that was approximately 50% below center of gravity. If you were to have the camera raised to be on perfect center of gravity, you would use the same figures as the pan settings above.*

Degrees of TILT movement over:	30 Minutes	1 Hour	2 Hours	4 Hours
	<i>motor off time</i>	<i>motor off time</i>	<i>motor off time</i>	<i>motor off time</i>
<b>22.5 °</b>	2 seconds	4 seconds	8 seconds	16 seconds
<b>45 °</b>	1 second	2 seconds	4 seconds	8 seconds
<b>90 °</b>	.5 seconds	1 seconds	2 seconds	4 seconds
<b>180 °</b>	.25 seconds	.5 seconds	1 second	2 seconds

Once you have tried one of these settings it is a good idea to write down your result if it is different than what these charts state so you can adjust or repeat the move next time. You may also tweak the **MOTOR POWER** settings to fine tune results. For example if your **MOTOR POWER** is **50** and you expect your move to go 90 degrees over a period, and it actually goes 95 degrees you can reduce the **MOTOR POWER** to say **45**, so each movement is slightly slower. We do not recommend setting the Motor Power over "50" when using long exposures.

# ORACLE MENU STRUCTURE REFERENCE CHART



## NOTES

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# **Kessler**<sup>TM</sup>



Innovative Tools for Filmmakers