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Section 6: Building & Running Effects



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Overview

This section discusses effect and timeline concepts. It details using the Timeline Control buttons and TimeFrame Effects Editor to create and run timeline effects.

Effects

An *effect* is one or more keyframes strung together to create a sequence. When you run an effect, Dveous/MX begins by configuring the channel(s) according to the first keyframe. It then looks ahead to the next keyframe to determine what the configuration needs to be at the time designated by that keyframe. Dveous/MX then interpolates smoothly from the first keyframe's settings to those in the next keyframe. This process continues, interpolating from current keyframe to the next, until the last keyframe in the effect is reached.

Each keyframe has its own location and duration in the effect. Keyframe durations default to one second, but you can set them to any length from one field to 1000 seconds long. You can vary the length of each keyframe independently and vary the start or end points of each keyframe relative to other keyframes. You can also vary the length of the entire effect, keeping the duration of each keyframe proportional to the others.

Timeline Effects

Each channel (1A, 1B, 2A, 2B) as well as the Global channel has its own timeline. When you build an effect (by inserting keyframes) on any delegated channel(s), you create a timeline for the delegated channel (s). With a fully configured system, you can use up to five timelines to create a timeline effect. With two or more timelines in an effect, each timeline runs simultaneously with, but independently of, the other timelines in the effect. You can offset the relative start and end time of each timeline, including the Global timeline, to create complex effects.

Timeline

A *timeline* is a set of keyframes connected sequentially in time, and a *timeline effect* is one or more timelines running together. You create a timeline effect with the buttons in the TimeFrame Effects Editor and Quick Keyframes areas of the Control Panel, and with the Timeline menu. You can save and recall entire timeline effects to and from on-line memory, and back up and restore them to and from floppy disk or hard drive. For complete information about saving and recalling effects, please see Section 8 – Saving & Recalling Effects.

Number of Keyframes In an Effect

There are 300 keyframes available per effect. Remember that more than one channel can be used to build an effect; therefore, the total number of keyframes available for the effect is the total of keyframes on all the channels. For example, building a four-keyframe effect on both channel 1A and 1B uses a total of eight keyframes. Look to the right of *EFFEKT KFs* in the menu display to see how many keyframes are in use for an effect.

Total Keyframes in the System Pool

There are over 1700 keyframes available to the entire system. It is a good idea to periodically check the number of free keyframes to avoid running out at an inopportune moment. To know the total remaining keyframes in the entire system pool, look at the top of the Timeline menu next to *REMAINING KFs*.

Time Values

Time values are indicated in timecode (min:sec:frames). Any value is assumed to be in frames, except if a decimal point is used. The value is then interpreted as seconds and frames. A trailing decimal after the number means an extra field of duration.

For example, entering 100 means 100 frames. The time value displays on the menu as corresponding time code values depending on the HD video format currently selected. For example, 100 frames would display at 3:10 in 1080i 59.94 format.

Entering 10.15 means 10 seconds, 15 frames. The time displays as *10:15*.

Entering 10.15. means 10 seconds, 15 frames, 1 field. The display will read *10:15**. The asterisk represents the field. (For progressive and segmented video formats the trailing decimal would add one extra frame to the time code.)

Customizing Timeline Run Mode

You can choose to run each timeline simultaneously, or to run one or more timelines independently of the others. Controls for these modes are located in the Personality menu, accessible by pressing the **PERSONALITY** button.

Under the *Misc* function, use the **Run Mode** softknob to set which mode you prefer. *All Chnls* (All Channels) is the default mode, and runs each of the five timelines simultaneously. *Delegated* runs only delegated channels and provides a handy way to test each timeline individually. Note that when this mode is

selected, the word “Delegated” appears on screen to indicate that you are operating in a non-standard mode.



Note: The Delegated run mode is only for viewing and troubleshooting purposes. It is not saved as part of an effect.

No X-Point (No Crosspoint) Mode

No X-Point mode tells the system to ignore the inputs originally programmed for an effect and run it using the currently selected inputs. This mode is designed for live applications, where there are last-minute changes to sources. For example, a different camera angle is requested than the one that is programmed into the effect.

No X- Point is strictly a recall mode, since the original crosspoint information is always stored with the effect when you create it. To activate this mode, press the **NO X POINT** button located at the top of the Control Panel in the System buttons.

1. Press **NO XPOINT** to light its LED. Note that “No Xpoint” shows in the menu display to indicate you are running a non-standard mode.
2. Go to the Input menu and select the desired inputs for each channel, including Near/Far assignment if applicable. Also select texture, background and defocus sources from their corresponding menus.
3. Recall and run the desired effect. The effect runs using the selected inputs, and not the ones originally programmed into the effect. Press **NO XPOINT** again to turn off its LED and disable the No Crosspoint mode.

No X-Point (No Crosspoint) and Aux Bus

No X-Point mode also works with the switcher Aux Bus control. With the No X-Point mode turned on, Dveous/MX will release control of the Aux Busses on the switcher, allowing the operator to select crosspoints live from the remote Aux panel.

For more information about setting up Aux Bus inputs, see Section 4 – Channel Menus under Input Menu. For more a detailed explanation look in the Dveous/MX Technical Guide, P/N 9100-0402-00.

Field Dominance on Run (Run Dom.)

This function lets you select a specific field for Dveous/MX to start on when you run an effect. In default mode, the effect starts running at whatever field the machine happens to be on when the RUN button is pressed. **Run Dom.** mode is helpful when using the Target Framestore, because you can select whether the drops will occur in Field 1 or Field 2.

To access the **Run Dom.** control, go to the Personality menu and press *Misc.* Use **Run Dom.** to toggle either **Field 1** or **Field 2** as the dominant start field. Or you can leave the machine in default mode, which is **Off**.

GPI Input Functions

Dveous/MX supports 12 GPI (General Purpose Interface) inputs. The GPI inputs are user configurable, with 27 different functions available for each GPI input. You can assign any function to any of the GPI inputs in the Remote Setup menu using the **GPI Funct** parameter softknob. The 27 functions are listed below.

Run Forward	Next Keyframe
Run Reverse	Previous Keyframe
Pause	Rewind
Jog 1 Frame Fwd	Fast Fwd
Jog 1 Frame Rev	Freeze Channel 1A
Jog 1 Field Fwd	Freeze Channel 1B
Jog 1 Field Rev	Freeze Channel 2A
Freeze Channel 2B	Toggle Freeze Ch 1A
Freeze All Channels	Toggle Freeze Ch 1B
Unfreeze Channel 1A	Toggle Freeze Ch 2A
Unfreeze Channel 1B	Toggle Freeze Ch 2B
Unfreeze Channel 2A	Toggle Freeze All Ch
Unfreeze Channel 2B	Toggle Cursor On/Off
Unfreeze All Channels	

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GPI Output Functions

Dveous/MX supports 12 GPI outputs, 4 of which are keyframeable.



Note: For further information about GPI inputs and outputs, please refer to the Technical Guide, P/N 9100-0402-00, under the Remote menu.

Timeline Control Buttons

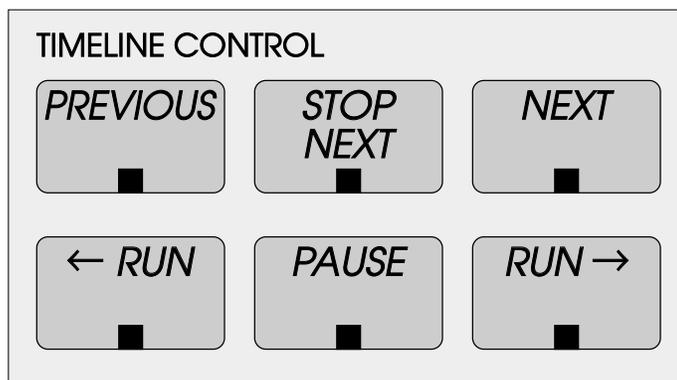
The six Timeline Control buttons let you step through keyframes in an effect, run an effect either forward or reverse, and pause a running effect. These buttons affect all four channels, plus the Global channel, whether they are delegated or not (unless the *Delegated* run mode is turned on in the Personality menu. See *Customizing Timeline Run Mode* earlier in this section).

- **PREVIOUS** – performs two functions. You can use it to move to the keyframe before the current one on the master timeline, or you can use it as part of a keyframe editing command.

As part of a keyframe editing command, for example, if the timeline is on keyframe 2 of a two keyframe effect, entering **COPY-PREVIOUS-TO-3** inserts a new keyframe 3 with the same parameters as keyframe 1. If there is currently an editing command in the keyframe edit dialog, pressing **PREVIOUS** makes it part of the command and does not move the timeline.

- **STOP NEXT** – puts the effect in a special pause mode when its LED is lit. In this mode, the effect runs until it reaches the next keyframe on the master timeline, then it pauses. You can press either **RUN** button to continue running the effect. As long as the LED in the **STOP NEXT** button is lit, the effect runs until it reaches the next keyframe on the master timeline, then pauses. If you use the **RUN** button to run the effect in reverse, it pauses when it reaches the previous keyframe.
- **NEXT** – performs two functions. Use it to step through the keyframes on the master timeline, starting with the current one. You can also use it as part of a keyframe editing command

As part of an editing command, for example, if the timeline is on keyframe 2 of a three keyframe effect, entering **COPY — NEXT — TO — 1** modifies keyframe 1 to have the same parameters as keyframe 3. If there is currently an editing command in the keyframe edit dialog, pressing **NEXT** makes it part of the command and does not move the timeline.



- **←RUN** – runs the effect in reverse. If the effect is not running, pressing **←RUN** runs the effect from the last keyframe toward the first one. If the effect is paused, pressing **←RUN** runs the effect backward from the current location on the timeline. If the effect is running forward, pressing **←RUN** causes the effect to immediately begin running backward from the current point on the timeline. The button's LED lights to indicate that the effect is running backward. While running in reverse, a keyframe with a programmed pause causes the effect to pause when it reaches that keyframe, i.e., at the “end” of the keyframe when viewed from the true start of the effect.
- **PAUSE** – pauses a running effect. You can continue running a paused effect in either direction by pressing a **RUN** button. The LED in the **PAUSE** button flashes to indicate that the effect is paused. To stop a paused effect completely, press **PAUSE** again, extinguishing the LED.

Pressing **PAUSE** with no effect running puts the master timeline in pause mode. This function is useful when you do not want to run the effect from the beginning. Position the effect's timeline on the keyframe you want to start with, and press **PAUSE**. Pressing the **RUN** button starts running the effect from its current position, instead of returning to the first keyframe in the effect and running from there. Pressing **PAUSE** two times quickly will stop a running timeline.

- **RUN→** – runs the effect forward. If the effect is not running, pressing **RUN→** runs the effect from the first keyframe toward the last one. If the effect is paused, pressing **RUN→** runs the effect forward from the current location on the timeline. If the effect is running backward, pressing **RUN→** causes the effect to immediately begin running forward from the current point on the timeline. The button's LED lights to indicate that the effect is running forward.

Using Other Buttons to Move Along the Timeline

Besides the Timeline Control buttons, you can use the **START (REW)**, **END (FF)**, and **THIS** buttons in the TimeFrame Effects Editor area of the Control Panel to move along the timeline. To use these buttons, the keyframe edit dialog must be empty (no keyframe edit command is begun). Press **START (REW)** to move to the first keyframe in the effect, **END (FF)** to move to the last keyframe in the effect. Pressing **THIS** moves the effect to the start of the current keyframe on the master timeline.

Looping an Effect

You can easily set an effect to loop endlessly. To do so, press **RECALL EFFECT** to access the Effects menu. Use the **Loop** parameter can be set *On* or *Off* for any effect.

By default, the last keyframe in an effect has a duration of 1:00 and determines the duration of the transition between the last keyframe and the first. Once running, a looped effect runs until you stop it by pressing the **START (REW)**, **END (FF)**, or **PAUSE** button.

There are two ways to set the Loop function:

- **For the currently recalled effect**— You must go to the Workspace (dial Workspace with the Reg# softknob) to enable or disable Loop. When you save the effect again, the current Loop status will be saved into the register as well.

Note that to disable Loop while running the effect, you must be in pause mode. Press **PAUSE** twice, then move to the Workspace to disable Loop.

- **For any effect other than the currently recalled effect**—You can go directly to the effect's register and turn the Loop parameter *On*. When you recall the effect, Loop will be enabled in its Workspace copy and in its register.

Timeline Menu

Use the Timeline menu to set the duration for an effect, to assign durations to each keyframe, and to view specific points along an effect's timeline.

The screenshot shows the 'TIMELINE' menu interface. At the top, it displays 'Remaining KFs: 920' and 'Total keyframes used in effect'. The main area shows a timeline for 'Ch 1A' with a 'CURRENT TIME: 0:00' and 'CURRENT EFFECT: WorkSpace'. The timeline is divided into channels: Global (0/0), Ch 1A (0/4), Ch 1B (0/0), Ch 2A (0/0), and Ch 2B (0/0). A 'Tic ruler' is visible at the bottom, showing a 'C TIME' of 0.29. A callout points to the ruler with the text 'Tic ruler Distance between tics = 1 second'. The interface also includes buttons for 'ADJUST', 'VIEW', and 'OPTIONS', and a 'KEYPAD' section.



Reading the Timeline Menu

Keyframes are indicated by small vertical bars (*tics*) along the effect's timeline(s). At the bottom of the timeline window is a time ruler whose tics are graduated in one-second increments. As you magnify the timeline display, you will see smaller graduations along the time ruler. Conversely as you decrease the amount of magnification, the larger the graduation. The tics always represent 1 second, no matter the value of magnification. The two time indicators on either side of the time ruler indicate, in timecode, how much of the timeline you are looking at. The default state of the time ruler is dependent on the SD or HD video format.

The Current Time (CTime) cursor is the thick vertical line that runs through all the timelines. It indicates the point in time of the running effect. The cursor moves as the effect runs.



Note: A keyframeable time line pause is available in the PATH menu.

Adjust

Toggling the *Adjust* softkey lets you modify either TL (timeline) or KF (keyframe) durations for the currently active timeline(s).

The parameters for both are identical, except for **Offset**, which appears for *TL* only and which is described immediately below.

Offset

Offset appears only when *Adjust TL* is selected. It offsets the timing of one timeline in relation to the others. As you enter new values, you will see the timeline shift in relation to the others on the menu display. Values are indicated in timecode.

Duration

Adjusting Durations in TL mode

Adjusts the durations of the individual keyframes proportionately to compensate for timeline duration change. You do not need to use any Quick Keyframes or TimeFrame Effects Editor buttons to apply the timeline duration changes; they apply to the effect immediately.

The minimum duration for a timeline is one frame. The maximum duration varies depending on the video format selected. For example, in 1080i 59.94 (HD mode) the maximum is 86,399:00 seconds or 24 hours.

Adjusting Durations in KF mode

Adjusts the duration of independent keyframes or of all the keyframes. Each keyframe has a default duration of one second, displayed as 1:00. The last keyframe on a timeline has a defined duration of 1:00. Usually, this value has no meaning, and does not count in the overall effect length because there is no next keyframe to which to interpolate or transition. However, if you run the effect in loop mode, this value is the duration between the last keyframe and keyframe 1.

After changing a keyframe duration, you must use **MODIFY** in the Quick Keyframes or TimeFrame Effects Editor buttons to apply it to the keyframe(s).

The minimum time for a keyframe duration is one field (:00*, entered using the softknob, joystick, or by pressing **0**, then the **A** keypad softkey). The maximum time is 1,000:00 seconds (16 minutes, 40 seconds).

Scroll

Lets you view other portions of the timeline display by scrolling forward or

back. This parameter is for viewing purposes only and does not affect the running of the timeline; you will not see the effect move as you scroll the timeline. Also, see *Auto Scroll* below.

CTime

Lets you jog the effect timeline manually. Use either the softknob or the joystick to adjust the values. Pressing the JOYSTICK LOCK button while in this menu lets you manually jog the effect with the joystick while in other menus.

View

The View parameters adjust how much of the timeline you see on the menu display. These parameters are only for viewing purposes and do not affect the running of the timeline.

Magnify

Expands or shrinks the amount of time shown on the timeline. The value ranges from 0 (least magnification) to 10 (most magnification). To see how many seconds of the effect are displayed, refer to the timecode values beneath the tic ruler.

CTime and Scroll

The **Scroll** and **CTime** parameters operate the same those as for the Adjust Timeline and Adjust Keyframe functions.

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Options

The Options function lets you further customize the Timeline menu view.

Auto Scroll

Determines what portion of the timeline remains in viewing range on the menu display. Toggle the mode on or off. The default mode is *On*.

Off – the timeline display does not scroll as the effect runs. The Current Time cursor may not appear in the display.

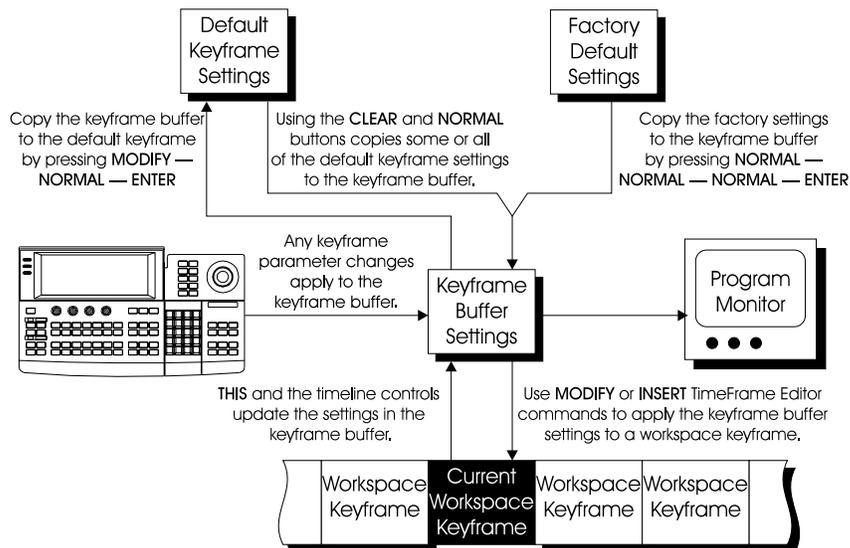
On – the timeline display automatically scrolls as the effect runs. The Current Time cursor remains visible in the display.

Frame Tics

Determines whether or not tic marks display in the ruler. The default condition is *On*. It is useful to turn Frame Tics *Off* if the value entered in **Magnify** inhibits the smooth performance of the **Scroll** feature. For example, as you zoom into the timeline, the distance between tics can be so small that the scroll bar seems to jump. With Frame Tics *Off*, you can scroll smoothly along a highly magnified timeline.

Creating Effects

You can use the Quick Keyframes or TimeFrame Effects Editor buttons to add keyframes to effects, and to modify, copy, delete, and remove existing keyframes. Before we discuss these editing buttons, it is important to understand how using them affects the system.



The Workspace

The Workspace is the part of memory that makes a copy of the most recently created keyframe or the most recently recalled or saved effect. You are never editing an actual effect, but rather a copy being shown from the Workspace. In this way, inadvertent overwrites and modifications are avoided. The only way to save changes you make in the Workspace is to use the **SAVE EFFECT** and **RECALL EFFECT** buttons.

Each channel (1A, 1B, 2A, 2B, and global) shares the Workspace. The total number of all keyframes in the channels cannot exceed 300 for a single effect. The Workspace is RAM protected, so that the effects are not lost if the system loses power, even for several days.

Workspace as the Current Effect When you start building a new effect on Dveous/MX, you will see the word *Workspace* displayed as the Current Effect. *Workspace* will remain as the Current Effect until you save it to the effect register. Then, the register number you assigned it will display next to the Current Effect (although you are still only editing a copy placed in Workspace memory). Additional modifications to the effect will require another save. For more information about the Workspace and saving and recalling effects, see Section 8 – Saving & Recalling Effects. An asterisk (*) next to an effect number notifies you that you have modified the effect.

The Keyframe Buffer

When you alter a keyframe with the position, size, or other settings, you control the contents of a keyframe buffer, and do not affect the Workspace contents. Using a TimeFrame Effects Editor command lets you place the keyframe buffer information into the Workspace, and therefore keep the change.

For example, suppose you are editing an existing effect. You want to alter the rotate setting on keyframe 3. You select keyframe 3, press the 3D TRANS menu button, and start moving the joystick with *Locate* selected instead of *Rotate*. The change you just accidentally made has only affected the keyframe buffer, not the Workspace effect. Press the **THIS** button on the Timeframe Effects Editor to reset the keyframe buffer to match the current Workspace keyframe.

When you select a Workspace keyframe with **START (REW)**, **END (FF)**, **PREVIOUS**, **NEXT**, or **THIS**, the keyframe buffer exactly equals the contents of that keyframe.

Quick Keyframe Buttons

The Quick Keyframe buttons, illustrated below, let you perform quick, single-press editing commands. They eliminate the need for multiple button press commands. Refer to the following table for commands you can enter with the Quick Keyframes buttons and their results. Keyframe is shortened to “KF” in the following table.

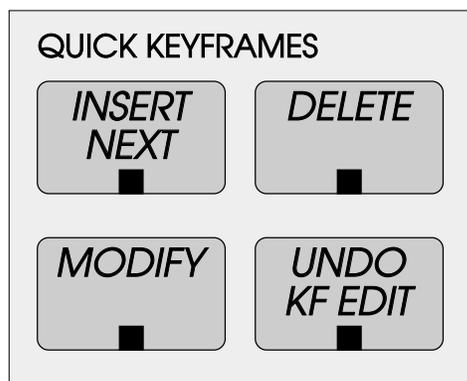


Table 6-1: Keyframe Commands

Command	Condition	Result
INSERT NEXT	NO KFs on any timeline	Inserts KF 1 at 0:00 time with default duration. Moves current time to start of KF 1
	No KFs on the delegated timeline, but KFs exist on other timelines	Inserts a KF at current time with default duration. Moves the current time to start of the new KF.
	Current time is on a KF location	Inserts a new KF after the current KF with the default duration. Moves the current time to the start of the new KF. Ripples KF numbers.
	Current time is between KFs	Inserts a new KF at the current time. Splits the time of the old current KF with new KF. Does not add time to the effect, nor move the current time. Ripples KF numbers.
	Current time is before KF1	Inserts a new KF1 at current time, with a duration that equals the difference between the current time and the old start time. Ripples KF numbers.
	Current time is after the end of the last KF	Inserts a new KF to fit from the end of last KF to the current time.

Table 6-1: Keyframe Commands

Command	Condition	Result
DELETE	Current time is on a KF location	Deletes the current KF, moves the next KF to the current time. Overall effect time shortened by the duration of the deleted KF.
	Current time is not on a KF location (between KFs, before start, or after end)	Error message: Must be on a KF to delete it.
MODIFY	Current time is on a KF location	Replaces the current KF with the Workspace.
	Current time is not on a KF location (between KFs, before start, or after end)	Error message: Must be on a KF to modify it.
UNDO KF EDIT	Any.	Undoes last keyframe edit performed and sets current time to start of effect.

The Undo KF Edit Button

Changing a parameter setting and modifying a keyframe with the Quick Keyframe or TimeFrame Effects Editor buttons changes the current Workspace. These actions also copy the existing Workspace (before you made the change) into temporary memory called the *undo buffer*. Think of the undo buffer as backup storage in case you make a mistake in the Workspace, or decide that the change is not what you want. Pressing the **UNDO KF EDIT** button exchanges the Workspace, which holds the effect with the unwanted change, with the undo buffer, which holds the effect before you made the change.

Also, when you recall an effect register, the system automatically copies the current contents of the Workspace to the undo buffer before recalling the effect register. This way, you can recover what was in the Workspace if you did not save it before recalling the new register. In this case, pressing **UNDO KF EDIT** exchanges the Workspace with the contents of the undo buffer.

Quick Keyframe MODIFY

Note the difference between using **MODIFY** as part of a TimeFrame Effects Editor button command and using the Quick Keyframe **MODIFY** button. Use the Quick Keyframe **MODIFY** button if you only want to change the current keyframe and do not want to change any of the effect's other keyframes to match. Once you have used the Quick Keyframe **MODIFY** button, you cannot change the rest of an effect using a **MODIFY** command string, because there will be no difference between the setting in the keyframe buffer and the current effect keyframe.

TimeFrame Effects Editor

The 14 Time Frame Effects Editor buttons are illustrated below. Use these buttons individually or in sequence to either edit existing effects or to create new ones.

When you press any of these buttons, the keyframe edit dialog in the menu display shows your editing command sequences as you enter them. Use the numeric keypad **CLEAR** button to clear entries in the keyframe edit dialog.



Note: In most cases, the Effects Editor buttons only affect the currently delegated timeline(s). However, see the description of Double-Press Key Functions later in this section for examples of where this may not be the case.

The following tables list the command sequences you can create with the Time-Frame Effects Editor buttons, and their results. Keyframe is shortened to “KF” in the following tables.



Note: All INSERT operations end with the current time at the beginning of the new keyframe.

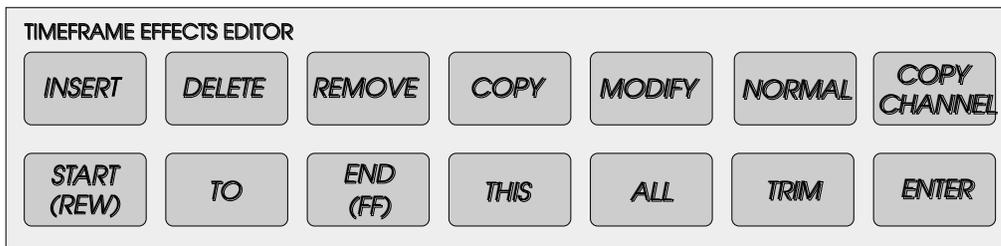


Table 6-2: Timeframe Effects Command Sequences

Command	Condition	Result
INSERT — ENTER	No KFs on timeline.	Inserts KF 1 with default duration. Moves the current time to 0:00.
	Current time is on a KF location.	Inserts KF with default duration before the current KF. Does not move the current time. Ripples KF numbers.
	Current time is between KFs.	Inserts a KF at the current time. The duration is split between the old current KF and the new KF (no time is added to the effect). Does not move current time. Ripples KF numbers.
	Current time is before KF 1.	Inserts a new KF 1 with default duration at current time. Ripples KF numbers. Does not move current time.
	Current time is after last KF.	Inserts a KF to fit from the end of last KF to current time.
INSERT — THIS — ENTER	Same as INSERT — ENTER.	Same as INSERT — ENTER.
INSERT — START — ENTER	No KFs on timeline.	Inserts KF 1 with default duration. Moves the current time to 0:00.
	Current time is on a KF location.	Inserts KF 1 with default duration at location of previous KF 1. Moves old KF 1 to end of the new KF 1 and ripples KF numbers. Moves the current time to 0:00.
	Current time is between KFs.	Same as on a KF location.
	Current time is before KF 1.	Inserts a new KF 1 at current time. Duration is from current time to old KF 1 start time. Does not move current time and ripples KF numbers.
	Current time is after last KF.	Same as on a KF location.
INSERT — END — ENTER	No KFs on timeline.	Inserts KF 1 with default duration. Moves the current time to 0:00.
	Current time is on a KF location.	Inserts KF after the last KF with default duration. Moves current time to end of timeline.

Table 6-2: Timeframe Effects Command Sequences

Command	Condition	Result
	Current time is between KFs.	Same as on a KF location.
	Current time is before KF 1.	Same as on a KF location.
	Current time is after last KF.	Inserts KF to fit from the end of the last KF to the current time.
INSERT — NEXT — ENTER	No KFs on timeline.	Inserts KF 1 with default duration. Moves current time to 0:00.
	Current time is on a KF location.	Inserts KF with default duration after the current KF. Moves current time to the start of the new KF and ripples KF numbers.
	Current time is between KFs.	Inserts KF at current time. Duration is split between old current KF and new KF (no time is added to the effect). Does not move current time. Ripples KF numbers.
	Current time is before KF 1.	Inserts a new KF 1 at current time. Duration is from current time to old KF 1 start time. Does not move current time. Ripples KF numbers.
	Current time is after last KF.	Inserts KF to fit from the end of the last KF to the current time.
INSERT — PREVIOUS — ENTER	No KFs on timeline.	Inserts KF 1 with default duration. Moves current time to 0:00.
	Current time is on a KF location.	Inserts KF with default duration before the current KF. Does not move current time. Ripples KF numbers.
	Current time is between KFs.	Inserts KF with default duration at the location of the current KF. Ripples KF numbers.
INSERT — 3 — ENTER	KF 3 exists.	Inserts new KF 3 before existing KF 3 and ripples KF numbers. Moves current time to KF 3.
	KF 3 does not exist.	Inserts multiple copies of KF to the current effect up to KF 3 all with default durations.

Table 6-2: Timeframe Effects Command Sequences

Command	Condition	Result
INSERT — 3 — TO — 12 — ENTER	KF 3 exists.	Inserts nine copies of KF with default duration before existing KF 3. Moves current time to KF 3.
	KF 3 does not exist.	Inserts multiple copies of KF to the current effect up to KF 12 all with default duration.
DELETE — ENTER	Current time is not on a KF location.	Error message: Must be on a KF to delete it.
	Current time is on a KF location.	Deletes current KF and moves the next KF to current time. Overall effect time is shortened by the duration of the deleted KF.
DELETE — THIS — ENTER	Same as DELETE — ENTER.	Same as DELETE — ENTER.
DELETE — START — ENTER	Any	Deletes KF 1 moves the old KF 2 to the old KF 1 position and ripples KF numbers. Overall effect time is shortened by the duration of the deleted KF. Moves current time to 0:00.
DELETE — END — ENTER	Any	Deletes last KF. Effect time is shortened by the duration of the deleted KF. Moves current time to end of keyframe.
DELETE — NEXT — ENTER	Any	Deletes KF after current KF. Effect time is shortened by duration of deleted KF.
DELETE — PREVIOUS — ENTER	Any	Deletes KF before current KF. Effect time is shortened by duration of deleted KF.
DELETE — 3 — ENTER	KF 3 exists.	Deletes KF 3. Effect time is shortened by KF 3's duration.
	KF 3 does not exist.	Error message: No keyframes.
DELETE — 3 — TO — 12 — ENTER	KF 3 - 12 exists.	Deletes KF 3 through 12. Effect time is shortened.
	KF 3 - 12 does not exist.	Error message: No keyframes.
DELETE — ALL — ENTER	Any	Deletes all KFs and their durations.
REMOVE — ENTER	Current time is not on a KF location.	Error message: Not on a keyframe.

Table 6-2: Timeframe Effects Command Sequences

Command	Condition	Result
	Current time is on a KF location.	If there is more than one KF in the effect deletes the current KF and adds its duration KF. Overall effect time does not change. If there is only one KF in the effect deletes the KF.
REMOVE — THIS — ENTER	Same as REMOVE — ENTER.	Same as REMOVE — ENTER.
REMOVE — START — ENTER	Any	If KF 1 is not at zero time or if KF 1 is at zero time and other timelines have a KF at zero time deletes KF 1. The old KF 2 becomes KF 1, the other KF numbers are rippled, and all the KFs keep their positions on the timeline. If KF 1 is at zero time and no other timelines have a KF at zero time, this deletes the KF. The old KF 2 becomes KF 1, the other KF numbers are rippled, all the KFs keep their positions on the timeline. Moves zero time to the KF 1 on the earliest timeline.
REMOVE — END — ENTER	Any	Deletes last KF. Effect time is shortened by duration of deleted KF.
REMOVE — NEXT — ENTER	Any	Deletes KF after current KF and adds its duration to the current KF. Overall effect time does not change.
REMOVE — PREVIOUS — ENTER	Any	Deletes KF before current KF and adds its duration to the new previous KF. Overall effect time does not change.
REMOVE — 3 — ENTER	KF 3 exists.	Deletes KF 3 and adds its duration to KF 2. Overall effect time does not change.
	KF 3 does not exist.	Error message: No keyframes.
REMOVE — 3 — TO — 12 — ENTER	KF 3 exists.	Deletes KF 3 through 12 and adds their total duration to KF 2. Overall effect time does not change.
	KF 3 does not exist.	Error message: No keyframes.
REMOVE — ALL — ENTER	Any	Deletes all KFs.
MODIFY — ENTER	Current time is not on a KF location.	Error message: Not on keyframe.

Table 6-2: Timeframe Effects Command Sequences

Command	Condition	Result
	Current time is on a KF location.	Replaces the current KF with the contents of the Workspace.
MODIFY — THIS — ENTER	Same as MODIFY — ENTER.	Same as MODIFY — ENTER.
MODIFY — START — ENTER	Any	Replaces KF 1 with the contents of the Workspace.
MODIFY — END — ENTER	Any	Replaces the last KF with the contents of the Workspace.
MODIFY — NEXT — ENTER	Any	Replaces the KF after the current KF with the contents of the Workspace.
MODIFY — PREVIOUS — ENTER	Any	Replaces the KF before the current KF with the contents of the Workspace.
MODIFY — 3 — ENTER	KF 3 exists.	Replaces KF 3 with the contents of the Workspace.
	KF 3 does not exist.	Error message: No keyframes
MODIFY — 3 — TO — 12 — ENTER	KF 3 to 12 exist.	Replaces KF 3 to KF 12 parameters with the Workspace parameters that are different.
	KF 3 or 12 does not exist.	Error message: No keyframes.
MODIFY — ALL — ENTER	Current time is not on a KF location.	Error message: No keyframes.
	Current time is on a KF location.	Replaces all KF parameters with the Workspace parameters that are different.
MODIFY — TRIM — (ALL 3 — TO — 12 3 — TO — END START — TO — 3) — ENTER	Current time is not on a KF location.	Error message: No keyframes.
	Current time is on a KF location.	Trims specified KF parameters by the difference between them and the Workspace parameters' values.
COPY — (START THIS 3 NEXT, PREVIOUS, END) — TO (START, 12, NEXT, etc.) — ENTER	Any	Copies specified KF to specified location, overwriting the parameters in the destination KF.

Table 6-2: Timeframe Effects Command Sequences

Command	Condition	Result
COPY — 3 — TO — 12 — TO — 13 — ENTER	Any	Copies KFs 3 - 12 to KF 13. A destination range is not needed. Overwrites and/or creates new KFs as needed. When you press the second TO the first TO changes to THRU in the KF Edit Dialog window.
COPY — (START THIS 3 NEXT, PREVIOUS, END)— TO—(START, 12, NEXT, etc.)— INSERT — ENTER	Any	Inserts specified KF at specified location. Ripples KF numbers.
TO — 3 — ENTER	Any	Moves current time to the start of KF 3 in the master delegated timeline.
START	Any	Moves current time to 0:00.
END	Any	Moves current time to the end of the effect.
THIS	Any	Moves current time to the beginning of the current KF in the master timeline.

Double-Press Key Functions

Six TimeFrame Effects Editor buttons allow you to perform an editing command without having to first delegate the channel. These buttons are: **INSERT**, **MODIFY**, **REMOVE**, **DELETE**, **COPY** and **NORMAL**.

Pressing one of these buttons once edits only the delegated channel(s). By double-pressing the button (pressing it twice) the function is carried out for all channels, delegated or not.

When you use a double-press command, the menu reads “Modify” (or whichever of the five buttons you pressed) after the first press and then adds “All Channels” when you press the button again.

It is often helpful to begin building an effect by pressing **INSERT–INSERT–ENTER**. This command anchors a keyframe for all channels at the beginning of an effect. This way, even if you are only working on one channel, all channels see the same starting point you do and you don't get unexpected results.

DELETE–DELETE–ALL–ENTER is a useful command that lets you delete keyframes for all channels, without having to delegate them first.

Reset Commands

There are many ways you can tell the system you want to start over or undo a change. For example, you can delete keyframes or quickly reset the machine to its user-defined Normal setting or undo the last change you made. The following pages describe the various reset commands.

The **THIS** Button

THIS is a powerful reset button. It immediately resets the current keyframe's parameters to their values before you made the undesired change(s). For example, if you inadvertently enter a Rotate value instead of a Locate value, pressing **THIS** resets the original parameters for that keyframe. Use **THIS** even after pressing a multiple button editing command. For example, if you press **NORMAL-NORMAL-NORMAL-ENTER** to return to the factory normal and decide to undo that decision, **THIS** will return you to the current keyframe. **THIS** resets the keyframe buffer to match the current Workspace keyframe.

The **DELETE** Button

There are three ways to delete keyframes and set the parameters back to default simultaneously.

- To delete and reset for delegated channels only:
Press **DELETE-NORMAL-ALL-ENTER**
- To delete and reset for *all* channels, delegated or not:
Press **DELETE-DELETE-NORMAL-ALL-ENTER**.
- To clear the Workspace for the delegated channels only:
Press **DELETE-ALL-ENTER**. Note that this method does not clear the keyframe buffer.
- To clear all keyframes from all channels in an effect:
Press **DELETE-DELETE-ALL-ENTER**

The **CLEAR** Button

Use **CLEAR** to return to factory-defined default settings. You can reset an entire menu to its default value; reset all controls under a single function soft-key; or reset a single parameter.

- To reset an entire menu to default, hold **CLEAR** and press the menu button. For example, to set all 3D Trans menu parameters to default, press **CLEAR + 3D TRANS**. This resets all 3D *Locate*, *Rotate* and *Axis Locate* settings to default.

- To reset all of the parameters under a single function softkey, hold **CLEAR** then press the function softkey. For example, to clear the parameters associated with the *Locate* function in the 3D Trans menu, press **CLEAR+Locate**. All parameters (H Loc, V Loc and Z Loc) are reset to default.
- To reset a single parameter, press **CLEAR** and its corresponding keypad softkey (A, B, C or D). For example, to clear the H Loc parameter under *Locate* in the 3D Trans menu, press **CLEAR+A**. You can clear one or more parameters using this method.

The NORMAL Button

Use **NORMAL** to set and reset your preferential default settings, called *normals*. For example, a normal state might be starting every effect with the DVE squeezed down to half size and with a border. Simply adjust the parameters in the applicable menu(s), then use a **NORMAL** command to set those conditions. These normals are saved even when you power down. You can leave the system in its factory default normal, which is a full screen picture with no transforms.

- To set the default normal for *delegated* channels, enter the parameters for the conditions you want in any menu. Then press **MODIFY-NORMAL-ENTER**. Those parameters are now stored as the normal state of the machine, and you can return to it at any time.
- To modify the normal for *all* channels, press **MODIFY- MODIFY-NORMAL-ENTER**.

Using NORMAL to Reset

- To reset all parameters of the *delegated* channel(s) back to their normal, press **NORMAL-ENTER**. This command resets any delegated channels to any personal-preference defaults that you entered.
- To reset *all channels* to the user-defined settings, press **NORMAL-NORMAL-ENTER**. This resets all channels to any personal preference defaults that you entered.
- To reset all menus to the *factory-defined* default (as shipped from Accom), regardless of channel delegation, press **NORMAL- NORMAL -NORMAL-ENTER**.



Note: All of these reset functions will not disturb the video format you are working in or any of the setup functionality. See First Birthday in Dveous/MX Technical Guide, P/N 9100-0402-00, for clearing of these parameters.

Change Commands

The **MODIFY** Button

For the specified keyframes, a **MODIFY** command replaces the existing parameter(s) with the new value(s) that you enter. Use the **MODIFY** button of the Timeline Effects Editor to change more than one keyframe at the same time. This command is useful when you need to change the border color on a 25 keyframe effect, for example, because it means you do not have to modify each keyframe individually.

Use the other Timeline Effects Editor buttons to specify the range of keyframes to modify. For example, **MODIFY-ALL-ENTER** modifies all the keyframes for the delegated channel(s), while **MODIFY 1-TO-3** modifies keyframes 1 through 3.

A **MODIFY** command only takes effect once you change a keyframe's parameter(s). For example, if each keyframe has a different rotate value, simply pressing **MODIFY-ALL-ENTER** will not affect the rotate values. However, once you change a single rotate value, even by 0.0001, entering the **MODIFY** command now applies the new rotate value to all the keyframes.

To ensure that you do not accidentally change unintended parameters, it is a good idea to press **THIS** first, then carefully make the changes, then press **MODIFY-ALL-ENTER**.

The **TRIM** Button

When you use **MODIFY** to change a parameter, the same modified value is inserted for every keyframe with that parameter. On the other hand, **TRIM** lets you maintain the relative offset of the parameter values between keyframes.

For example, in a two keyframe effect, keyframe 1 has the image H rotated 0.2500, keyframe 2 has the image H rotated 0.5000. After pressing **START** to move to keyframe 1, you change the H rotate value to 0.5000. Pressing **MODIFY — TRIM — ALL — ENTER** gives keyframe 2 an H rotate value of 0.7500.

MODIFY vs. Quick Keyframe MODIFY

There are two **MODIFY** buttons on the Control Panel. One is located in the Time Effects Editor group of buttons, the other is part of the Quick Keyframes buttons.

Use the TimeFrame Effects **MODIFY** when you want to a range of keyframe parameters to match the current keyframe in an effect. Use the Quick Keyframe **MODIFY** when you want to change only the current keyframe's parameter(s). This **MODIFY** button changes the current keyframe buffer to match the keyframe buffer. If you try to use a TimeFrame Effects **MODIFY** command string after this Quick Keyframe command, it will have no effect because there will be no difference between the setting in the keyframe buffer and the current effect keyframe. For more information about the Quick Keyframes buttons, see pages the pages at the end of this section.

Using the COPY CHANNEL Button

Use **COPY CHANNEL** to either copy keyframes or to copy the current state of the machine. The direction of the copy is always *from* the Master Channel *to* the delegated channel(s).

Copying the Current State

This method is useful if you want to establish a similarity in the look between channels, but do not want the exact same keyframes. For example, if you want the same border from one channel to appear on another channel, using a **COPY CHANNEL** command instantly sets the other channel with those border parameters, but leaves you free to set different keyframes.

You can either copy the entire state of the machine or specific menus only (up to six).

1. Double-press the Channel Select button of the channel you want to copy *from*. This action makes that channel the Master channel.
2. Press the Channel Select button(s) for the channel(s) you want to copy *to*. This action delegates those channels. Their channel numbers are highlighted on the menu display.
3. Press **COPY CHANNEL-ENTER**. All current attributes of the Master Channel are now copied to the delegated channels.

Alternatively, you can specify which of up to six menus you wish to copy. Press the desired menu button(s) after you press **COPY CHANNEL**. The command looks like this: **COPY CHANNEL-[menu button(s)]-ENTER**.

Copying Keyframes

You can copy an entire timeline or just specific keyframes on the timeline. You can copy them exactly to the same position on another channel's timeline, or to different positions.

Use the buttons in the TimeFrame Effects Editor to specify their range. For example, to copy the entire timeline for the Master Channel, press **START-TO-END** as part of the copy command.

Use the numeric keypad to indicate specific keyframes. For example to copy only keyframe 3, press **COPY CHANNEL-3-ENTER**.

Indicate a range of keyframes, for example 3 through 5, by pressing **3-TO-5-TO-3** as part of the command. When Dveous/MX moves the keyframes to the new channel(s), it will overwrite any existing keyframes it finds at that position, starting at keyframe 3. If no destination keyframe is specified, the copied keyframes will be appended to the end.



Note: Specifying a single keyframe like **COPY CHANNEL-3-TO-5-ENTER** will copy the range of keyframes 3 through 5 to the end of the destination timeline(s). To copy keyframe location 3 of the master timeline to keyframe location 5 of the destination timeline, press **TO** twice: **COPY CHANNEL-3-TO-TO-5-ENTER**.

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Using INSERT in the Copy Command Use **INSERT** if you want to insert copied keyframes to the new timeline(s) without overwriting the existing keyframes. For example, the command **COPY CHANNEL-3-TO-5-ENTER**, copies 3 through 5 to the delegated channel(s) and overwrites any existing keyframes that exist from 3 through 5. **COPY CHANNEL-3-TO-5-INSERT-ENTER**, on the other hand, inserts the range 3 through 5 into the new timeline while rippling down the existing keyframes. The keyframe order is automatically renumbered. See Section 4 – Channel Menus for other uses of **COPY CHANNEL**.