

# PAV2

## PANAFLEX ADVANCED VIDEO USER MANUAL



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### **FCC Compliance**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/ TV technician for help.

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# Overview

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## PAV2

The PANAVISION® Advanced Video 2 [PAV2] represents a new level of quality for video assist. The PAV2 is part of a family of new video assists, which also include versions for the XL and Millennium cameras. The PAV2 is compatible with the Panaflex G, Panaflex GII, and Panaflex Platinum cameras, as well as the Panastar and Panastar-P.

The PAV2 has the following advantages over previous video systems:

- Brighter video, for low light shooting
- All digital processing, for consistent imaging
- Serial control of all functions, for easy setup and adjustment
- Electronic de-anamorphoser
- Easy focus adjustment with no tools required
- Simple positional adjustments - up/down, left/right

In addition, the PAV2 has the following standard Panavision features:

- Flicker-free at all framerates
- Auto, manual, or adjustable auto gain control
- Auto / 3200K / 5600K white balance settings
- NTSC and PAL versions
- 2 sets of adjustable framelines, with optional variable density masking
- Camera speed, and footage display [in feet, meters, or frames]
- Panatape distance display



Clean output

Frameline &  
Text output

Monitor Output  
Video +12V  
or 24V output

Video Control  
& Update

Panatape  
Input



# Connections

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PAV2

## V i d e o

The PAV2 offers 2 video outputs:

- one clean
- one with framelines and text output

The output functions can be set by a service technician.

Connect a BNC cable to the desired output.

Note: For multiple monitors it is better to loop them together, with one monitor's output feeding the next monitor's input, rather than using a T connector to split the signal.

## M o n i t o r

A 5 pin Lemo 1B connector provides 12V DC power and video output for on-board monitors.

Note: Serial # PAP2-251 & higher output 24V power. Not all consumer-grade video monitors will accept 24V input.

## R S - 2 3 2

The PAV2 has 2 serial ports [5 pin Lemo OB] for external control. Port A is used for loading software, and direct control of video parameters. Port B is used for Panatape input.





# Switches

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# PAV2

The PAV2 has the following primary switch functions:

Note: default configuration is top row switches in middle position except for on switch, and bottom row switches all up.

<u>Label</u>	<u>Function</u>	<u>Options</u>
ON	On / Off	on or off [red LED illuminates when on]
[+/-]	plus / minus	adjusts manual gain, line gain, or mask density, depending on position of GAIN switch. [see p 11]
SEL/MOD	Framelines	Use SEL position to select which frameline is visible. Use MOD position to change frameline position. [see framelines, p 15]
ENTER	Enter button	Used to toggle through character generator settings. [see p 19]
Auto/32/56	Color balance	Auto white balance, 3200K, or 5600K presets
GAIN	Auto Gain Control [AGC]	Normal [up] Boost [middle] Manual [down] [See pp 11-13 for more detail.]
CLR / BW	Color	Color picture [up] Color bars [middle] Black & White [down]
NORM/ FREEZE/ COMP	Image Comparison	Normal video [up] Freeze image [middle] Compare images [down]



# Switches

## PAV2

In addition to the primary, labelled functions, the PAV2 has the following special switch functions, which are activated by combining 2 or more switches as follows:

<u>Function</u>	<u>Switch Combo</u>
Manual Gain With the GAIN switch set to manual [down] position, use the [+/-] switch to increase / decrease picture brightness. Note: increasing gain amplifies the video signal and therefore also increases video noise.	GAIN & [+/-]
Frameline Brightness Set the CLR/BW switch to CLR. With GAIN switch in Boost Auto [middle] position, use the [+/-] switch to brighten or darken the framelines.	GAIN, [+/-], & CLR
Mask Density With GAIN switch in Normal Auto [up] position, use the [+/-] switch to brighten or darken the mask surrounding the framelines.	GAIN & [+/-]
Anamorphic Push MOD and the [-] switches at the same time. Toggles through 4 positions: normal, anamorphic, upside-down spherical, upside down anamorphic	MOD & [-]
Status Display Push the MOD and the [+] switches at the same time. Toggles through 3 positions: verbose status [software version and parameters], brief status [average picture level and gain level], and clean. <div style="border: 1px solid black; padding: 2px; margin: 5px 0;">Note: after changing anamorphic mode or checking the status, you may need to re-select your frameline setting.</div>	MOD & [+]
Footage counter reset Hold the ENTER button for 3 seconds.	ENTER
Feet / Meters / Frames Press and hold the ENTER button. Push the [+] switch. Toggles among feet, meters, and frames text display.	ENTER & [+]
Character Surround Press and hold the ENTER button. Push the [-] switch to toggle between a black box around the text, or a black outline around each character.	ENTER & [-]
Gain Target Set the GAIN switch to either the Normal Auto [up] or Boost Auto [middle] position. Set the CLR/BW switch to BW. Use the [+/-] switch to adjust respective target level. Numerics will pop up on the video monitor [frameline output only] indicating the new value. Initial starting values are: Normal = 70, Boost = 100.	BW, GAIN, [+/-]
Film Format Set CLR/BW switch to BW. Press and hold ENTER button. Push SEL. Toggles among modes: 4 Perf, 3 Perf, 16mm, 65mm, 2 Perf.	BW, ENTER, & SEL
Flicker Mode Push the SEL and [+] switches at the same time. Turns flicker mode on or off.	SEL & [+]



## Normal Auto Gain Control [AGC]

Setting the GAIN switch to the rightmost position enables the Normal gain setting, producing reduced video noise, darker shadows, better highlight detail, and in most cases a more pleasing image than Boost AGC. The camera will automatically adjust brightness for changing scene conditions. AGC target is adjustable via the panel switches [see p11].

## Boost Auto Gain Control

With the GAIN switch in the middle position, the PAV2 will automatically adjust the gain level to attain a brighter image. Use this position in extreme low light situations when maximum picture brightness is required.

Note: in some situations this will result in significant video noise. In such cases, Normal Auto Gain may be preferable.

## Bright Scenes

For bright scenes, when no signal amplification [GAIN] is required, it is usually best to set the GAIN control to the Manual [down] position, and then use the [+/-] switch to bring the GAIN all the way down to zero. If the picture is still too bright, use the manual iris control and the ND filter on the PAV2 to adjust the picture brightness.

## Scenes with changing brightness

In situations where scene brightness changes, i.e. panning from a shaded to a sunny area, it may be advantageous to set the GAIN control to the Manual [down] position, and use the [+/-] switch to adjust the GAIN to the desired level. The PAV2 will hold this setting and will not try to compensate for changing light levels.

## Dark Scenes

When shooting in low light situations, make sure the ND filter is disengaged, and the video manual iris is all the way open. Try setting GAIN the Boost AGC [middle] position. If this results in too much noise, try the Normal AGC [up] setting.



Clean output      Frameline & Text output  
[These outputs can be configured by a service technician]

# Setting Framelines

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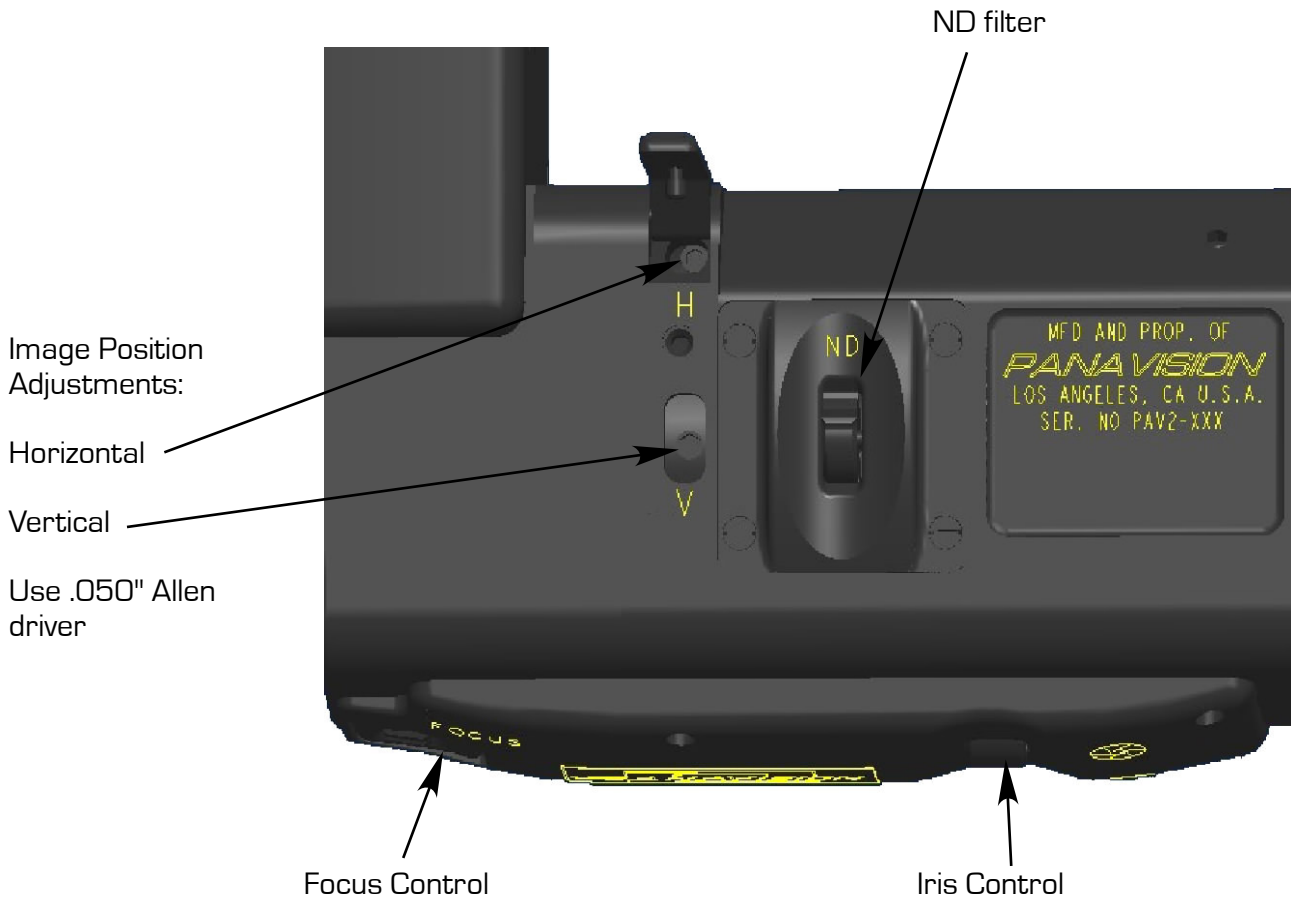
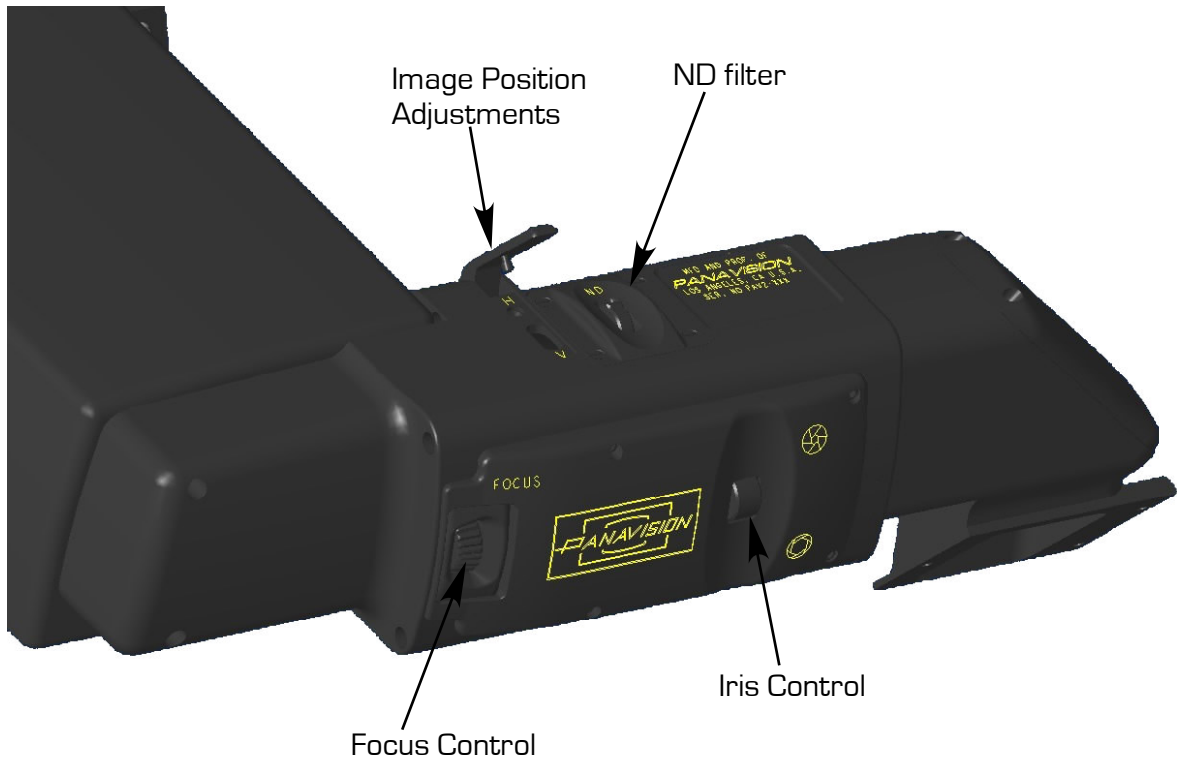
PAV2

The PAV2 provides 2 independent sets of framelines, which can be adjusted to any film format. Follow these steps to setup the framelines:

1. Make sure you are viewing the frameline output.
2. Push the SEL/MOD switch towards the MOD position until you see the frameline set to be changed.  
The MOD switch cycles through 4 modes: Frameline A, Frameline B, Frameline A+B, No Framelines.
3. Push the SEL/MOD switch towards SEL until the left side of the frame blinks as a dashed line.  
The frameline setting will automatically be saved, and the frameline will stop blinking, if no switch is pushed for a period of 2 seconds.
4. Push the [+/-] switch in the appropriate direction to move the line.  
Repeat steps 3 & 4 for all sides of the frameline.  
Repeat steps 2 through 4 to adjust the second set of framelines.

Note: If you only see one set of framelines when selecting with the MOD switch, one set could be hiding behind the other. Adjust the visible frameline to a smaller size, so the other set becomes visible.

Once the frameline position has been set, you can adjust the frameline brightness and the density of the surrounding mask area [see p11].





# Adjustments

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## I r i s

Turn the thumbwheel marked with the iris icons, on the front of the bridge. Downwards is open; upwards is closed.

## N D f i l t e r

Turn the thumbwheel segment on top of the video. Pushing it towards camera rear inserts the ND filter into the light path, pushing the other way removes the filter .

## F o c u s

Turn the thumb-knob control to adjust focus until the crosshair or grind of the ground glass is at its sharpest point. The Panaglow framelines are on the other side of the ground glass, and may still be slightly soft due to the shallow depth of field at the plane of focus.

## H o r i z o n t a l P o s i t i o n

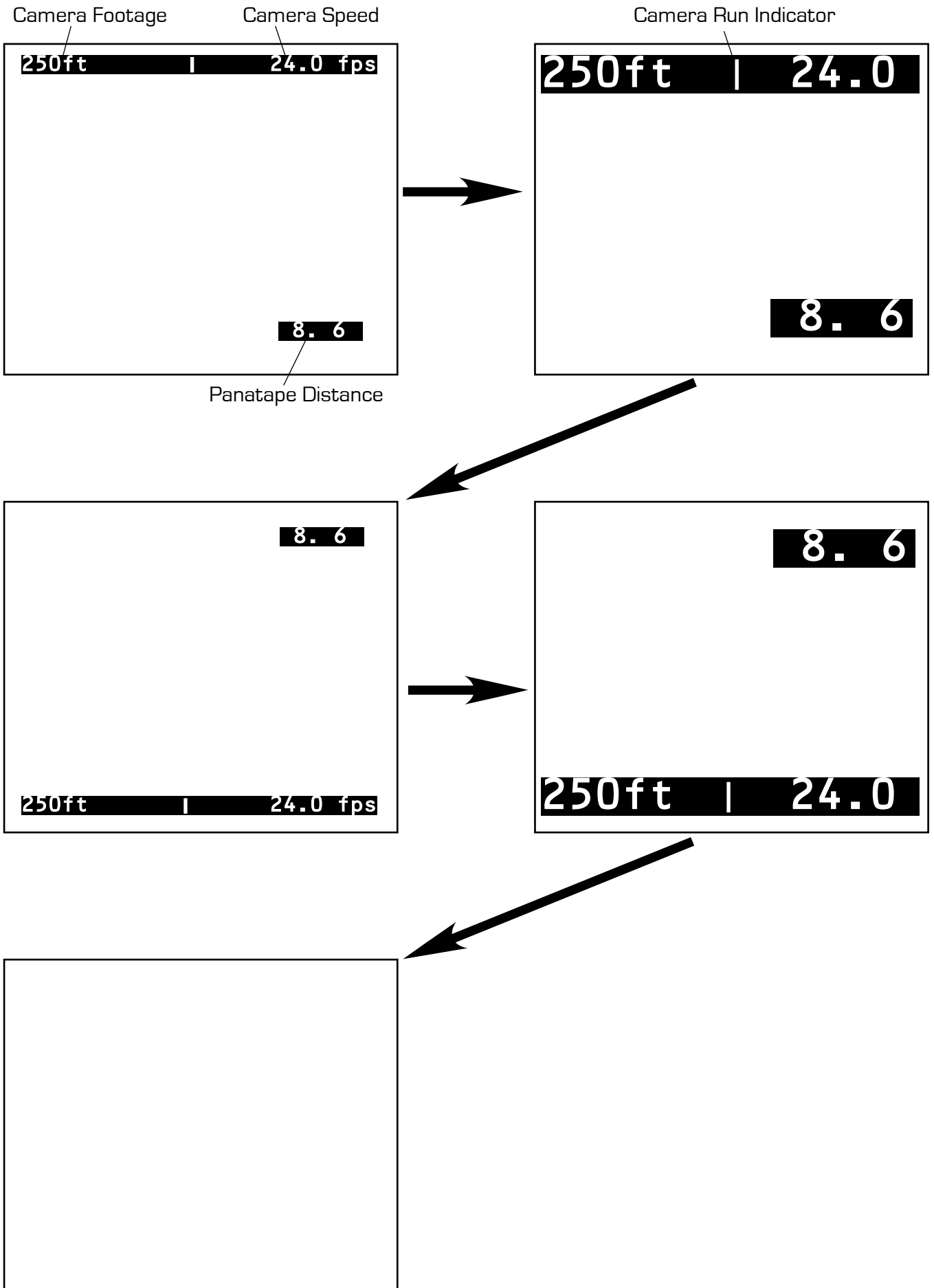
Use a 0.050" hex driver to loosen the screw on top of the bridge [see diagram]. Lift up the protective cover. Adjust screw 'H', using a 0.050" hex driver.

## V e r t i c a l P o s i t i o n

Use a 0.050" hex driver to loosen the screw on top of the bridge [see diagram]. Lift up the protective cover. Adjust screw 'V', using a 0.050" hex driver.

## R o t a t i o n

This is a service level adjustment.



# Character Generator

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# PAV2

The PAV2 has a built in character generator which can display camera speed, film footage, and distance [from a Panatape] on the video monitor. A spinning line indicates camera run status. This information is only available from the frameline/text video output.

Press the ENTER button to toggle through the various text location and size choices.

## Panatape Distance Display

When a Panatape system is connected to port B, the PAV2 will auto-detect the signal. The distance in feet and inches will be displayed at the bottom of the screen if the other characters are at the top, and at the top if the other characters are at the bottom.

## Footage Counter Reset

Hold the ENTER button for 3 seconds.

## Character Surround

Press and hold the ENTER button. Push the [-] switch to toggle between a black box around the text, or a black outline around each character.

As a part of our program of continual improvement to our products and services, Panavision welcomes your feedback regarding any problems, questions, or comments. Please contact your local Panavision office which supplied the equipment.

Some problems are solvable in the field. Please see the following list for some troubleshooting tips.

For immediate assistance with any equipment problem, please contact the technical or service department at your local Panavision office.

- Video won't power up

Check pogo contact connection between PAV2 processor [PAP2] and the video wedge [PCV-W]

- Red light is lit, but no picture

Check BNC cables and connections

Run a BNC cable from a known good video source to the monitor. If that picture is ok, connect the same cable to the PAV2.

Try the other video output

- Noisy or grainy video image

Use Normal AGC or Manual gain. See Gain Control section, p13, for more details.

- Framelines are soft [out of focus]

When the video is properly focused on the crosshair or grind of the ground glass, the Panaglow framelines may appear soft, due to the distance between the 2 surfaces, and the shallow depth of field at the ground glass.

Focus knob is too tight or too loose.

Call Panavision to schedule a service call or to exchange the unit.

No picture, No power [red LED is not lit]

Call Panavision and report the problem. Set aside all video and power cables and batteries connected to the camera at the time of the failure. Make note of all accessories and external devices [monitors, playback decks etc.] connected to the camera system. This information will help our technicians repair the video and prevent future problems on your set.

Image is soft when ND filter is engaged, but sharp without it.

ND gel filter may be warped. Call Panavision to have filter exchanged.

# Troubleshooting

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PAV2

- Moving the Gain switch between Normal and Boost doesn't do anything.  
If the video image is either very bright or very dark, both settings will look the same, because either setting will eventually go through the whole range of adjustment between 0 gain and max gain.  
To test the function, try a lighter or darker scene, or try opening or closing the iris.