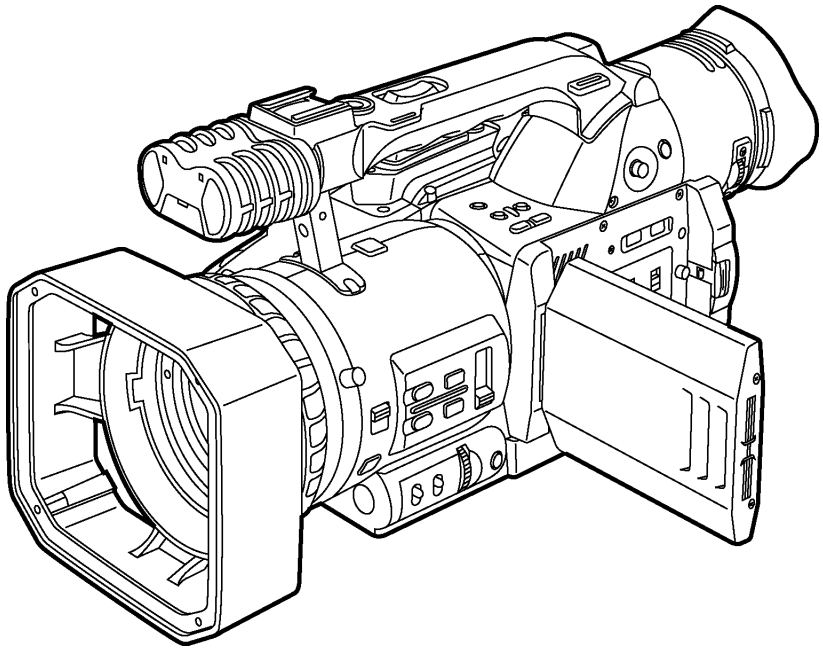
ORDER NO. BSD0212M004
D21

Service Manual

Mini DV NTSC

Digital Video Camera Recorder

AG-DVX100P



Panasonic®

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Specifications

[GENERAL]

Supply voltage: DC 7.2/7.9 V
Power consumption:
6.8 W (when viewfinder is used)
7.8 W (when LCD monitor is used)
9.2 W (max.)

▭ indicates safety information.

Ambient operating temperature
32°F to +104°F (0°C to +40°C)
Ambient operating humidity
10% to 85% (no condensation)
Weight
3.652 lb (1.66 kg)
(excluding battery and accessories)
Dimensions (W×H×D)
5 1/2×6 5/16×14 3/8 inches
(139×160×364 mm)
Recording format
Digital video SD format
Tape format
Mini DV
Recorded video signals
525i (NTSC)
In the progressive mode, the signals are converted into the 525i system and recorded.
Shooting mode
60i (525i)
Progressive mode (30P, 24P or 24P advance)
Recorded audio signals
PCM digital recording
16 bits: 48 kHz/2 channels
12 bits: 32 kHz/4 channels
Recording tracks
Digital video, audio signals:
helical track
Time code:
helical track (sub-code area)
Tape speed
SP mode: 18.812 mm/sec.
LP mode: 12.555 mm/sec.
Recording time (when AY-DVM60 is used)
SP mode: 60 minutes
LP mode: 90 minutes
Tape used
6.35 mm wide metal tape
FF/REW time
Approx. 85 sec. (when AY-DVM60 is used)
Pick-up device
Interline transfer 1/3-inch CCD image senser (×3)
Number of pixels
Total number of pixels: 410,000,
Number of effective pixels: 380,000
(pixel offset system)
Lens
Leica DICOMAR optical image stabilizer lens, motorized/manual mode switching, 10× zoom
F1.6 (f = 4.5 to 45 mm)
(35 mm equivalent: 32.5 to 325 mm)
Optical system
Prism system
ND filters
1/8, 1/64
Gain
0, +3, +6, +9, +12, +18 dB (60i mode only)
Shutter speeds
Preset
60i mode:
1/60 (OFF), 1/100, 1/120, 1/250, 1/500, 1/1000, 1/2000 sec.
30P mode:
1/30, 1/50 (OFF), 1/60, 1/120, 1/250, 1/500, 1/1000 sec.
24P, 24P (ADV) mode:
1/24, 1/50 (OFF), 1/60, 1/120, 1/250, 1/500, 1/1000 sec.
Synchro scan
60i mode:
1/60.3 to 1/250.0 sec.
30P mode:
1/30.1 to 1/250.0 sec.
24P, 24P (ADV) mode:
1/24.1 to 1/250.0 sec.
Minimum subject illuminance
3 lux (F1.6, 18 dB gain, 50 IRE video output)
Lens hood
Large-sized lens hood with wide angle of view
Filter diameter
72 mm
LCD monitor
3.5-inch LCD color monitor, 200,000 pixels
Viewfinder
0.44-inch LCD color viewfinder, 180,000 pixels
Internal microphone
Stereo microphone
Internal speaker
20 mm diameter

Specifications

[VIDEO]

Sampling frequency
Y: 13.5 MHz, PB/PR: 3.375 MHz
Quantizing
8 bits
Video compression system
DCT + variable length code
Error correction
Reed-Solomon product code

[AUDIO]

Sampling frequency
48 kHz/32 kHz
Quantizing
16 bits/12 bits
Frequency response
20 Hz to 20 kHz
Wow & flutter
Below measurable limits

[CONNECTORS]

VIDEO IN/OUT (input/output automatically switched)
Pin jack, analog composite input/output, 1.0 V [p-p], 75 Ω
S-VIDEO IN/OUT (input/output automatically switched)
S-connector, Y/C separate signal input/output, Y: 1.0 V [p-p], C: 0.286 V [p-p], 75 Ω
AUDIO IN/OUT (input/output automatically switched)
Pin jacks ×2 (CH1, CH2)
Input: 316 mV, high impedance
Output: 316 mV, 600 Ω
DV
4-pin, digital input/output, IEEE 1394 standard complied with
INPUT 1, INPUT 2
XLR (3 pins) ×2 (CH1, CH2)
LINE/MIC switching, high impedance
LINE : 0 dBu
MIC : –50 dBu/–60 dBu (menu selection)
DC INPUT
7.9 V
PHONES
Stereo (3.5 mm diameter), 77 mV, 32 Ω
CAM REMOTE
Mini jack (2.5 mm diameter)

[AC ADAPTER]

Power Source:
110/120/220/240 V AC, 50/60 Hz
Power Consumption:
18 W

indicates safety information.

Weight
0.35 lb (0.16 kg)
Dimensions (W×H×D)
2 13/16×1 13/16×4 5/8 inches
(70×44.5×116 mm)

[OPTIONAL ACCESSORIES]

Wide conversion lens
AG-LW7208G
16:9 conversion lens
AG-LA7200G
XLR microphone
AG-MC100G
Hard carrying case
AG-HT100G
Soft carrying case
AG-SC100G
Battery
CGR-D08 (800 mAh)
CGR-D16 (1600 mAh: product equivalent to battery supplied)
CGP-D28 (2800 mAh)
AC adapter kit
AG-B15 (product equivalent to AC cable, DC cable and AC adapter supplied)
Cleaning tape
AY-DVMCL

Weight and dimensions shown are approximate. Specifications are subject to change without notice.

SAFETY PRECAUTIONS

GENERAL GUIDELINES

1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been over-heated or damaged by the short circuit.
2. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
3. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

LEAKAGE CURRENT COLD CHECK

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Measure the resistance value, with an ohm meter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. The resistance value must be more than 5MΩ.

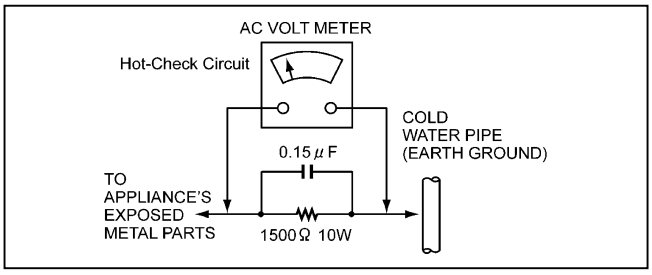


Figure1

LEAKAGE CURRENT HOT CHECK (See Figure 1)

1. Plug the AC cord directly into the AC outlet.
   Do not use an isolation transformer for this check.
2. Connect a 1.5KΩ, 10W resistor, in parallel with a 0.15μ F capacitor, between each exposed metallic part on the set an a good earth ground such as a water pipe, as shown in Figure1.
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet repeat each of the above measurements.
6. The potential at any point should not exceed 0.15 volts RMS. A leakage current tester (Simpson Model 229 equivalent) may be used to make the hot checks, leakage current must not exceed 0.1 milliamp. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

ABOUT LEAD FREE SOLDER (PbF)

Distinction of Pbf PCB:
PCBs (manufactured) using lead free solder will have a PbF stamp on the PCB.
Caution:

1. Pb free solder has a higher melting point than standard solder; Typically the melting point is 50–70˚F (30-40˚C) higher. Please use a high temperature soldering iron. In case of the soldering iron with temperature control, please set it to 700±20˚F (370±10˚C).
2. Pb free solder will tend to splash when heated too high (about 1100˚F/600˚C).

ELECTROSTATICALLY SENSITIVE (ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically sensitive (ED) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor “chip” components. The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground.
   Alternatively, obtain and wear a commercially available discharging wrist trap device, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as alminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device classified as “anti-static” can generate electrical charges sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it.
   (most replacement ES devices are package with leads electrically shorted together by conductive foam, alminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.
   CAUTION : Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise hamless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device).

X-RADIATION

WARNING

1. The potential source of X-radiation in EVF sets is the High Voltage section and the picture tube.
2. When using a picture tube test jig for service, ensure that jig is capable of handling 10kV without causing X-Radiation.

Note : It is important to use an accurate periodically calibrated high voltage meter.

3. Measure the High Voltage. The meter (electric type) reading should indicate 2.5kV,±0.15kV. If the meter indication is out of tolerance, immediate service and correction is required to prevent the possibility of premature component failure. To prevent an X-Radiation possibility, it is essential to use the specified picture tube.

IMPORTANT

"Unauthorized recording of copyrighted television programs, video tapes and other materials may infringe the right of copyright owners and be contrary to copyright laws."

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (service) instructions in the literature accompanying the appliance.

WARNING:

TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, KEEP THIS EQUIPMENT AWAY FROM ALL LIQUIDS-USE AND STORE ONLY IN LOCATIONS WHICH ARE NOT EXPOSED TO THE RISK OF DRIPPING OR SPLASHING LIQUIDS, AND DO NOT PLACE ANY LIQUID CONTAINERS ON TOP OF THE EQUIPMENT.

CAUTION:

TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD AND ANNOYING INTERFERENCE, USE THE RECOMMENDED ACCESSORIES ONLY.

CAUTION:

Do not install or place this unit in a bookcase, built-in cabinet or any other confined space in order to maintain adequate ventilation. Ensure that curtains and any other materials do not obstruct the ventilation to prevent risk of electric shock or fire hazard due to overheating.

FCC Note:

This device complies with Part 15 of the FCC Rules. To assure continued compliance follow the attached installation instructions and do not make any unauthorized modifications.

This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CAUTION:

Danger of explosion or fire if battery is mistreated.

- Replace only with same or specified type.
- Do not disassemble or dispose of in fire.
- Do not store in temperatures over 60°C.
- Use specified charger for rechargeable batteries.
- Do not recharge the battery if it is not a rechargeable type.

For Remote Controller

- Replace battery with part No. CR2025 only.
- Do not recharge the battery.

indicates safety information.

Panasonic®

FCD0212NHMK125P