

DV1

DROPPED VIDEO

OPERATION MANUAL

CAUTION

- DO NOT OPERATE LIGHTS OUT OF WATER
- DO NOT ALLOW CAMERA TRANSFORMER OR GFI OUTLET TO GET WET
- 120 vac IS DANGEROUS - DO NOT EXPOSE CONNECTORS TO WATER

INTRODUCTION

Underwater video is a new and exciting world for both the diver and non-diver. The DV1 may be used to examine possible dive sites, look for salvage, or just to bring the underwater world to the non-diver. In addition, when it is connected to a VCR, it provides a record of the dive or site exploration.

The DV1 has been assembled for use as received. The system has been set up for white balance and color at the factory. Your specific situation may require a re-adjustment. To adjust your system follow the instructions in the camera and lens manuals supplied (see Lens Adjustment on page 6).

The DV1 is available in both black and white or color model. It may be used with either a video monitor or a TV. The DV1 is also available in 250', 500' and 1000' depth rated versions.

MONITOR/TV

The use of a regular TV is not recommended due to the loss of quality when converting the video signal to an RF signal. When using a regular TV the ANT input must be used which requires an RF adapter. The video quality is dependent upon the characteristics of the RF adapter. A monitor, or a TV with a video input, uses the video signal directly and gives the best quality picture.

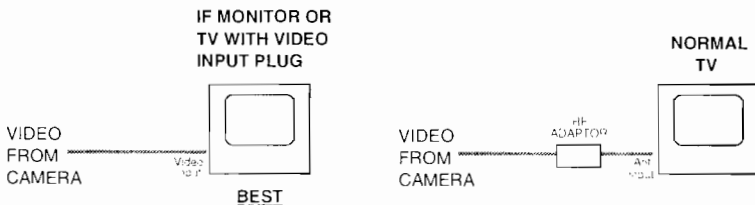


Figure 1

CABLING AND POWERING UP - Out of Water

The DV1 housing is ready to go, there is no need to open the underwater housing. Follow figure 2 to cable the system. Before plugging into 120 vac, be sure the light switch on the side of the ground fault box is turned off (light housings will be damaged if operated out of water for more than five seconds).

After insuring the lights are turned off, plug the system into 120 vac. After a few seconds you should have a normal picture. Turn the light switch on just long enough (five seconds or less) to insure the lights are working.

The lens was adjusted at the factory, but be sure to read "Lens Adjustment" on page 6 before proceeding.

CABLING ASSEMBLY AND POWERING UP - For Water Use

Lift the lights and light collar off the main housing to install the lead ring for negative buoyancy. Install the lead ring into position (see figure 4) at the front of the DV1 housing and reinstall the light collar.

After cabling up the system, test the system before putting it in the water. After testing, allow 10 to 15 seconds for the lights to cool before putting the camera housing and lights in the water.

While lowering the camera to the target always have the system powered up. In the unlikely event that a leak should occur, the picture will scramble when a small amount of moisture enters the housing. This will allow enough time to retrieve the camera system before any damage can occur.

DV1 CABLING

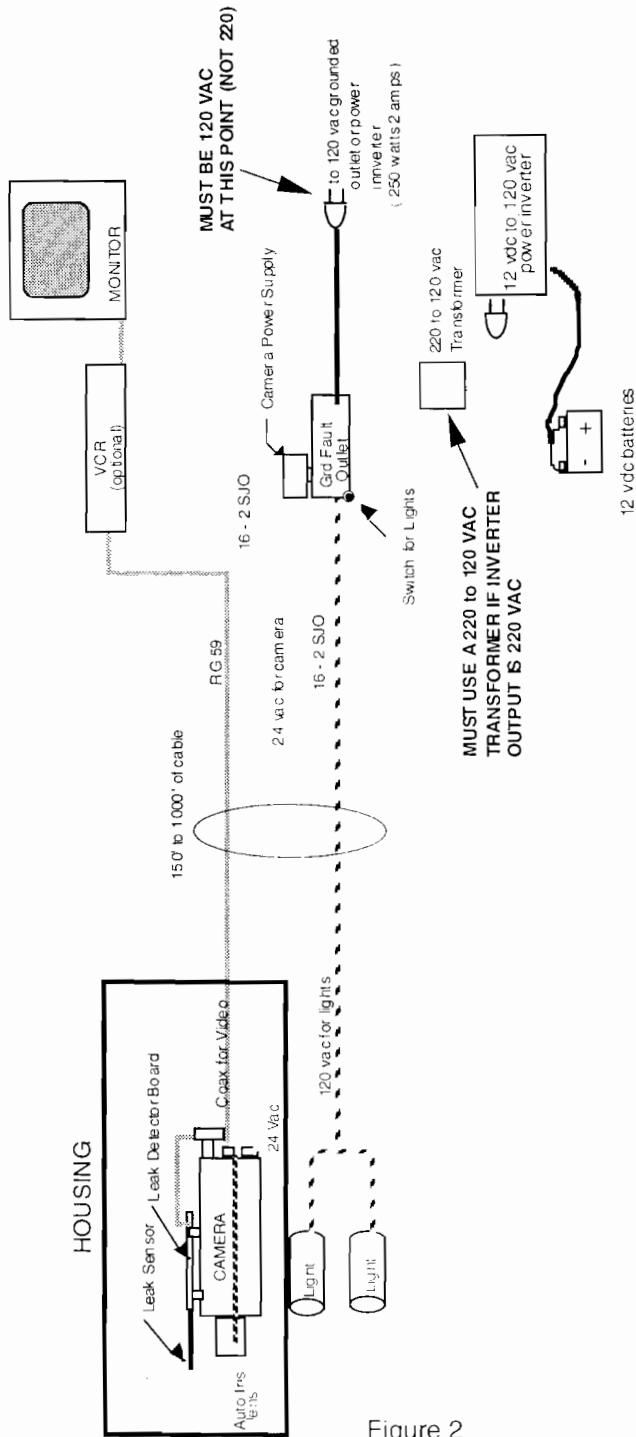


Figure 2

LEAK DETECTION

The underwater housing is equipped with leak detection circuitry which is designed to inform you of any leak problem before any damage can occur.

The Leak Detector board is mounted on the camera (see figure 2). The leak sensor is made up of two wires that extend to the faceplate. Any water that enters the camera housing will collect on the inside of the faceplate (the underwater housing's low point). When water touches the ends of the two wires, the picture will scramble (see figure 3). The leak system should be periodically tested by removing the faceplate and touching the two wire ends with a wet finger.

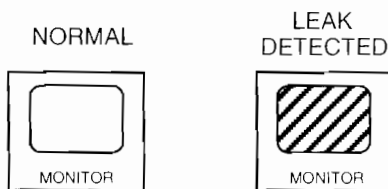


Figure 3

CAMERA HOUSING ASSEMBLY

The DV1 may be disassembled to gain access to the camera and lens by removing the front faceplate (see figure 4). The faceplate is held in position by six 6-32x 7/8" stainless steel screws.

In the DV1 250' version the camera is held in place by a single 1/4-20 thumb screw located under the camera shelf.

In the DV1 500' and 1000' versions, the camera assembly is held in place by an aluminum bracket which is secured by two 4-40x3/8" screws. After removing the bracket, the camera assembly slides out of the housing.

Clean the o-ring and seat with a clean cloth before re-assembly.

DV1 CAMERA HOUSING ASSEMBLY

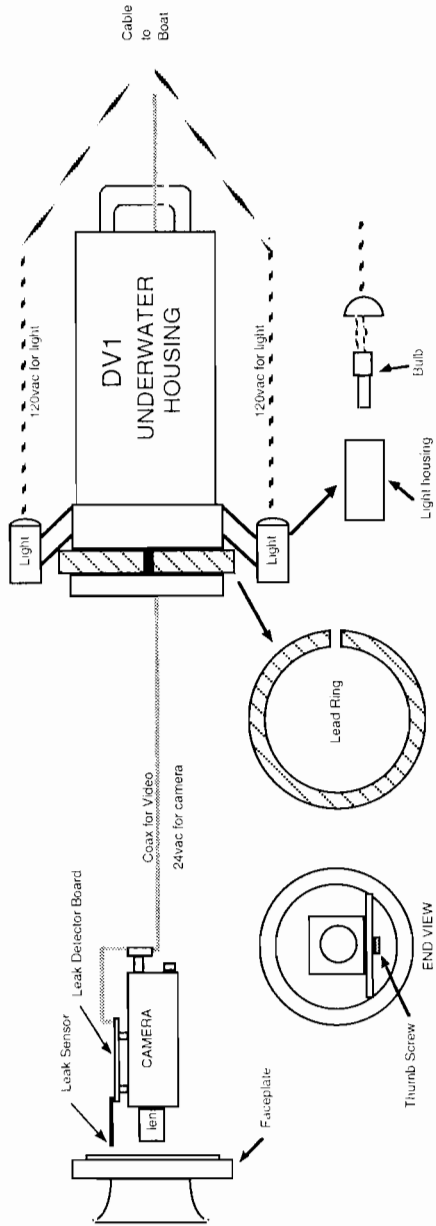


Figure 4

LENS ADJUSTMENT

There are two different lens used on the DV1 camera. The B/W system uses a wide angle 4mm lens with an operator adjustable IRIS (light level) and Focus. The color system uses a wide angle 6mm lens with an operator adjustable Focus and automatic IRIS.

The Focus adjustment is used to give a sharp focused picture on the monitor. If the picture is not sharp then the DV1 face plate should be removed and the Focus ring adjusted for a sharp picture at your normal viewing distance.

The IRIS adjustment is used to adjust the lens opening which determines the amount of light that enters the camera. The more light that enters the camera the brighter the picture will be, however the more open the lens the less "focal length" or "depth of field" (the range or distance that the picture will remain in focus).

Example: If you open the lens all the way and set the focus ring at 3 ft. the picture will be very bright and the target will be in focus at 3 ft.

If you close up the lens towards C (closed) and leave the focus at 3ft, the picture will not be as bright but will stay in focus over a much broader range. The picture can be brightened by lighting the target and adjusting the monitors picture (good contrast and brightness).

Note: The lens is screwed into the camera, in the process of adjusting the lens it may come loose; if so, re-tighten by hand.

GROUND FAULT BOX

The Ground Fault Box (see figure 2) is hard wired to the 120 vac lights and the Camera Power plugs into it. If even a small electrical leak occurs underwater, the Ground Fault Breaker will trip. If the Ground Fault Breaker trips, call the factory for assistance. Never bypass the Ground Fault Breaker, it is used for safety reasons.

POWER REQUIREMENT

The DV1 is powered by 120 vac. If your boat is not equipped with 120 vac, then you must use a motor generator set or an inverter.

A motor generator set is the first choice, a 500 W unit does a nice job. They are powered by a small gasoline engine and are very portable. They produce a "clean" 120 vac and can power the complete system including a VCR.

The second choice is an inverter. Inverters convert 12 volt DC to 120 volt AC. It is necessary to use a high quality, frequency controlled inverter because of the "clean" voltage requirements of cameras, monitors, and VCRs.

MAINTENANCE

The DV1 was designed to be maintenance free. After use in salt water, rinse in fresh water. A periodic check of the leak detector should be made. Wet your finger and touch the leak sensor tip (faceplate must be removed) - the picture should scramble. Should you have any questions, call the factory at (800) 822-4744 or (508) 822-7330.

BULB REPLACEMENT

Remove the two 4-40x3/8" screws from the rear of the bulb housing (see figure 5) and push the bulb out the rear of the housing. Cut the wires to the bulb (about 1/2" from the bulb), strip away a minimum amount of insulation, and solder on the replacement bulb. Clean the solder joint and surrounding wires with denatured alcohol or lacquer thinner. Form the wires into their final bent position by inserting the light bulb into the yellow housing and positioning the black cap against the housing. Carefully remove the light from its housing taking care not to unbend the wires. Coat the solder splices and surrounding wires with several thin coats of Silicon adhesive (used on windshields). Wait about one hour between each coat. Let final coat dry overnight and re-assemble light housing. If the sealed joint leaks exposing the solder joint to water, it can cause the ground fault breaker to trip.

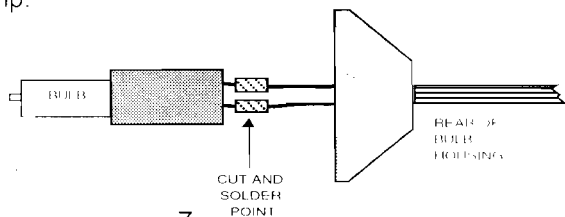


Figure 5

SPECIFICATIONS

PERFORMANCE/DESCRIPTION:

- Standard B & W Camera 1/3"CCD
- Low Light B & W Camera 1/2"CCD
- Color Camera 1/3"CCD
- High Resolution Color Camera 1/3"CCD
- Black and White Lens 4 mm
- Color Lens 6 mm
- Lighting two 100w tungsten halogen
- Input voltage 120 vac
- Power consumption 225w

DIMENSIONS/WEIGHT:

- Case with ballast for 250' version.....7"Dx15"L 23 lbs
- Case with ballast for 500' version.....5"Dx15"L 15 lbs
- Case with ballast for 1000' version..... 5"Dx15"L 15 lbs
 - Cable75"x150'/1000' 22/150 lbs
 - 150'/250' Shipping box.....20"x23"x24" 65-85 lbs
 - 500'Shipping box.....16"x30"x41" 175 lbs
 - 1000' Shipping box.....27"x27"x40" 300 lbs

MATERIALS/COLOR:

- CaseHigh impact PVC/yellow
- Cable 5 conductor in polypropylene/yellow
- Lights 16-2 SJO
- Camera Power 16-2 SJO
- Video RG59BU

LIMITED WARRANTY

Your DV1 underwent constant inspection during assembly to insure many years of trouble free performance. The warranty on the DV1 is TWO FULL YEARS from the date of purchase. During this period, your unit will be repaired free of charge should a failure occur due to materials or workmanship. The warranty does not cover damage due to dropping or general misuse of the unit.