Read these instructions completely before operating this system

PLEASE CHARGE THE BATTERY FIRST BEFORE USE!

Technical specifications

camera		
	Color camera with sapphire glass lens	
	Wide viewing angle	120°
	Illumination	12 white LEDs
	Operating temperature	-20°F ~ 120°F (-28°C ~ 50°C)
	Stainless steel house	Stainless steel 304
	PAL output	720X576(PAL)
	NTSC output	720X480(NTSC)
	Waterproof	IP68
cable		
	Special gold point touch connector to camera	
	Fiberglass cable	
monitor		
	7" TFT COLOR monitor	Picture Resolution:320 (TV Lines)
	OSD display	
	Video output	1Vpp 75 Ohms
power supply		
	Charge adaptor :110~240VAC ,12.6VDC /1000mA (included.)	
	Lithium battery box (2600mAh, included.)	
Dimensions		
	Case size	x x
	Camera	x

Save this Manual

Attention

1. Read the this manual carefully before using this system.
2. Avoid using the device in extreme cold, heat, or humidity , it may damage the device.
3. Do not drop or press hard on the device.
4. Do not disconnect the unit while recording or playing. It may damage the unit and/or the SD device.

Applications

FOR PIPE DIAMETERS FROM 1inch TO 12 inches

1. WATER SUPPLY
2. WASTE WATER
3. HVAC SYSTEMS
4. SWIMMING POOLS
5. SPAS
6. PLUMBING LINES
7. VACCUM SYSTEMS

Camera

1. WHITE LEDS
2. LENS
3. SPRING
4. CONNECTER
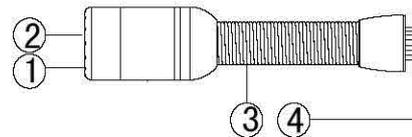
Know Your Tool
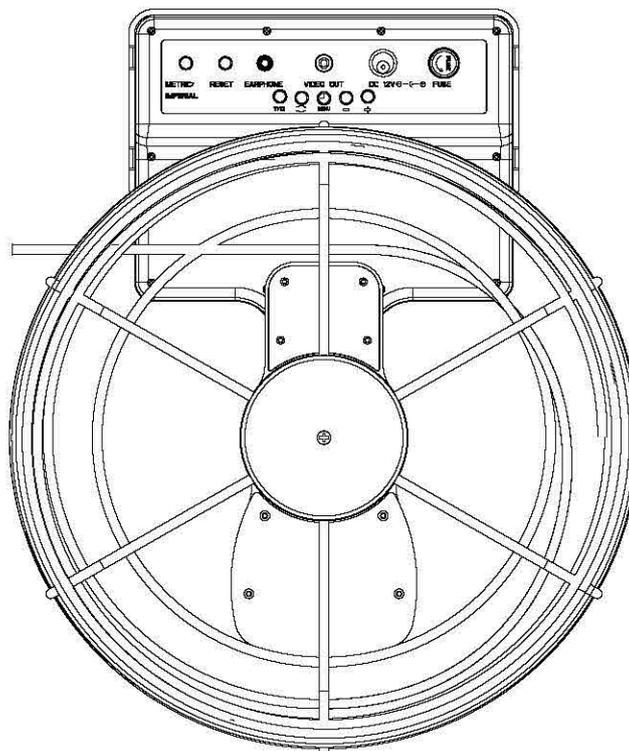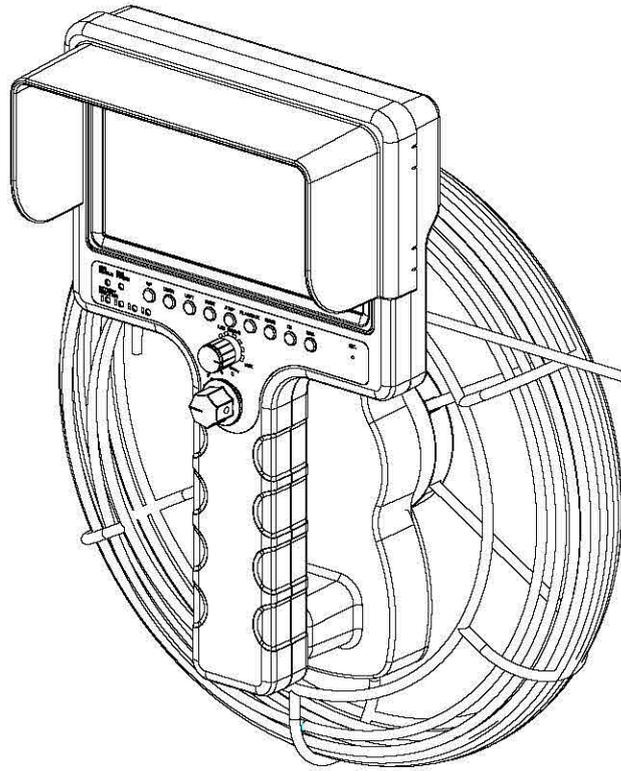
Monitor
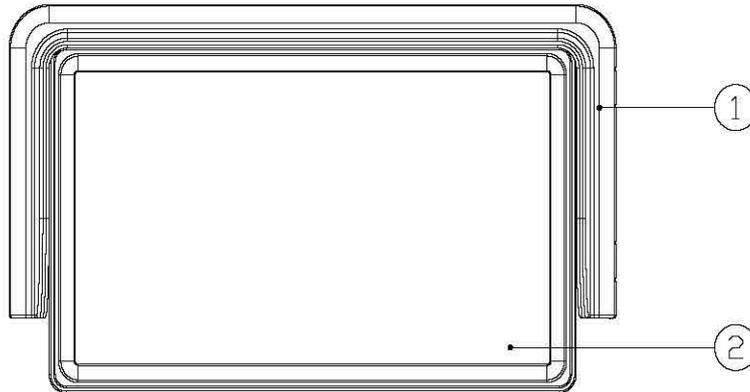
1. **sunshade**
2. **7''monitor**
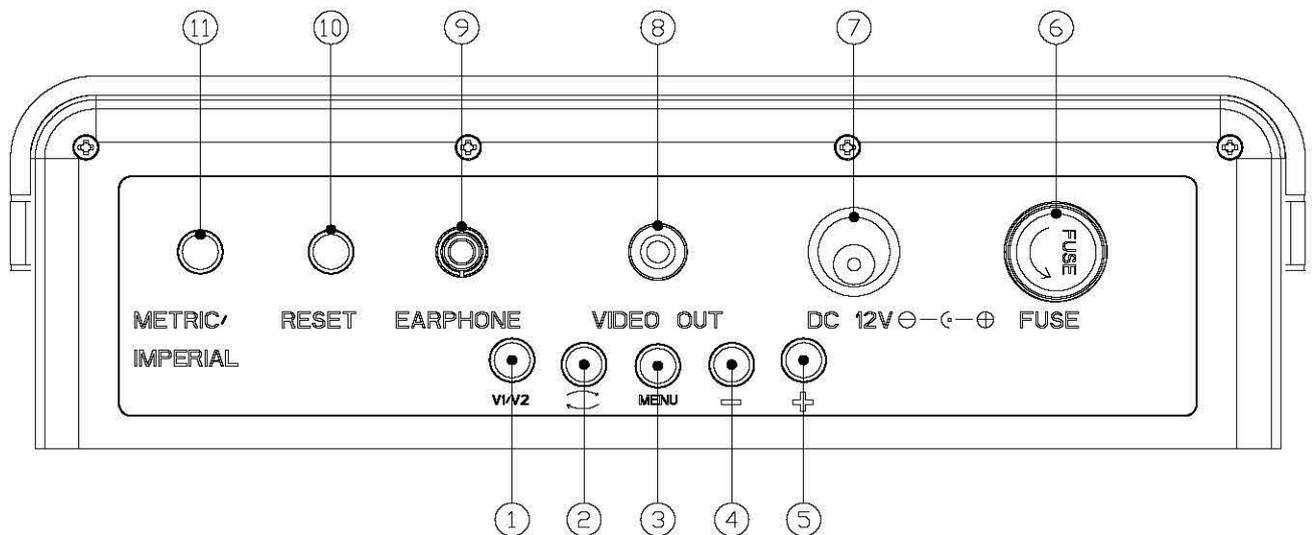
1. **Video1 video2 selector button**
2. **Image UP and down left and right button**
3. **Menu button (include bright contrast color langue 16:9 4:3 sleep)**
4. **Sub menu down selector**
5. **Sub menu up selector**
6. **Fuse socket**
7. **Charge adaptor jack**
8. **Video output jack**
9. **Earphone jack**
10. **Count button- reset**
11. **Count button- metric/imperial**

Control part

LED BRIGHT

MIN.   MAX.

ON/BATT.   ON/AUX

OFF

CHARGE

DVR STATUS   DVR POWER   UP   DOWN   LEFT   RIGHT   STOP   PLAYBACK   MENU   OK   REC.   MIC.
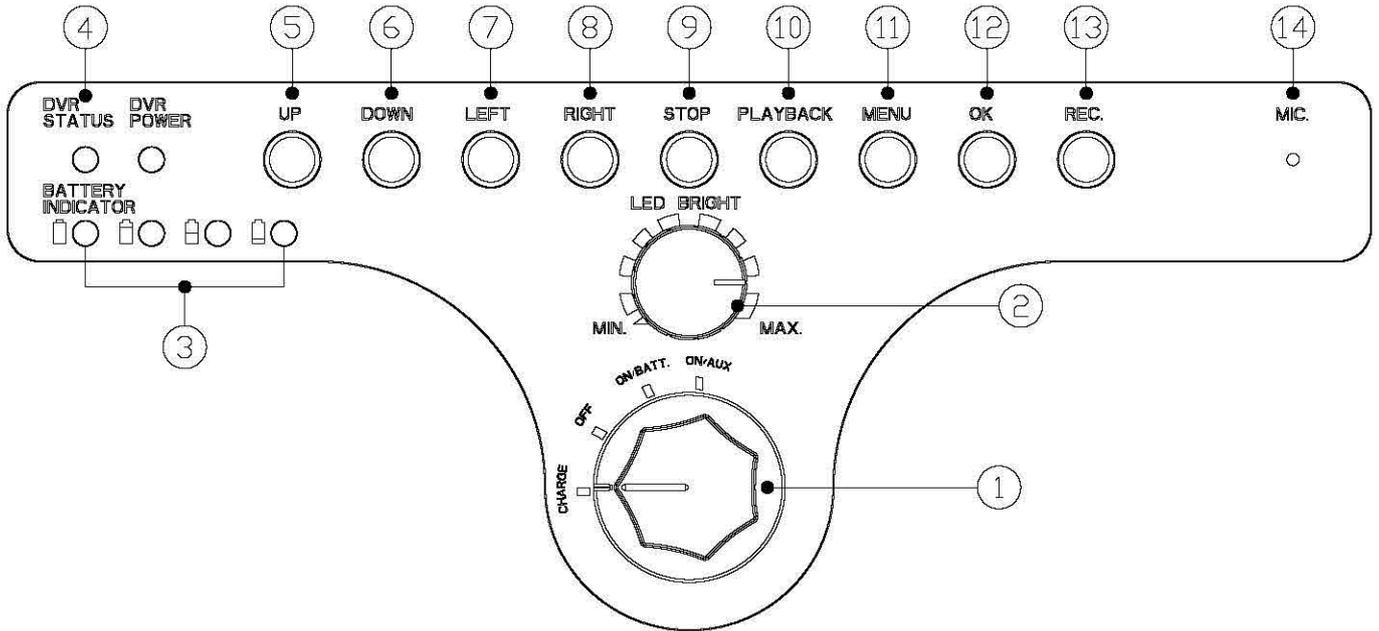
BATTERY INDICATOR

1.Switch
3. Battery level indicator
5. DVR up selector button
7. DVR left selector button
9. DVR stop selector button
11. DVR menu set button
13.DVR record/stop button

2. led bright adjust knob
4. DVR LED
6. DVR down selector button
8. DVR right selector button
10. DVR playback button
12. DVR ok button
14. Mic.hole

SKID ASSEMBLE
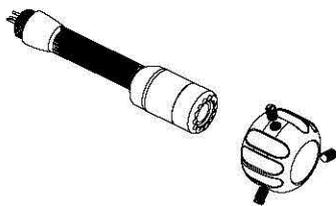
Keys on DVR
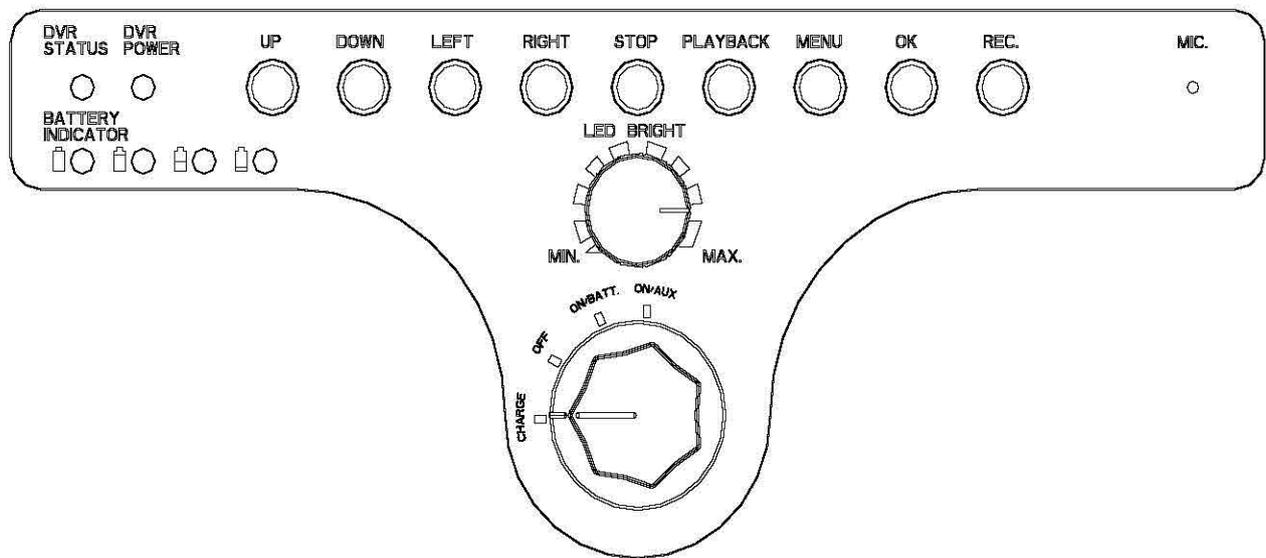
Up	Move up
Down	Move down
Left	Move left
Right	Move right
OK	Confirm
Power	Power indicator
Status	Recoding working indicator
Playback	Playback video files
Stop	Stop play and back
menu	Enter to menu
Rec.	Manual start/stop recording

Icons on screen

Recorder Setting

System Setting

Event Playback
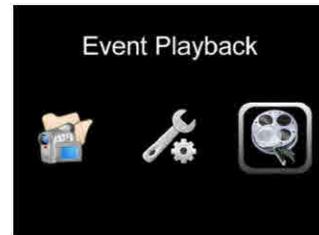
Press "menu" key enter into main menu.

Recorder setting

Recorder Setting
- Work Mode
- Motion Detection
- Sensitivity
- Resolution
- Video Quality
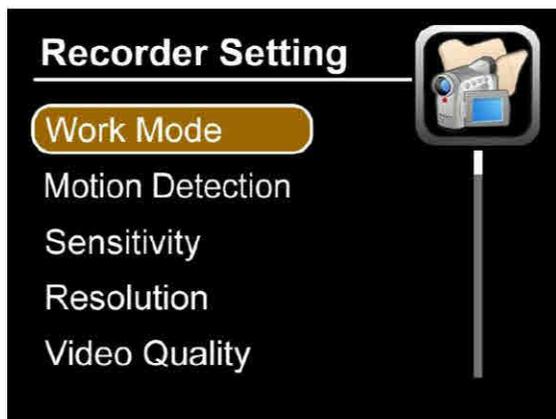
1. Work Mode
Video Record videos by manual
Photo Snapshot photo by manual
Audio Record audio by manual

2. Motion Detection

Off stop the motion Detection
On start the motion Detection

3. Sensitivity
High the full area will be detected
Medium the 1/2 area will be detected
low the 1/4 area will be detected

4. Resolution
   720x576
   720x480
   **640x480**

5. Video Quality
High: high resolution
Medium: Standard resolution
Low: low resolution

6. Time stamp

Off Time stamp will not be shown on the screen
On Time stamp will be shown on the screen
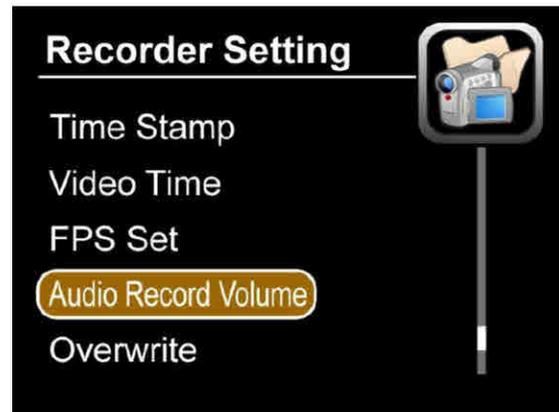
7. Video time
It can choose the video file length.

5 Min 5 minutes recorded video
10 Min
15 Min
30 Min
60 Min

8. Fps set

15 Fps 1 second 15Fps picture
30 Fps 1 second 30Fps picture

9. Audio record volume
   Work with audio record mode
   10 level can be adjust

10. Overwrite
Off the recording will stop when the disk full.
On the recording will overwrite the old video files when the disk is full.
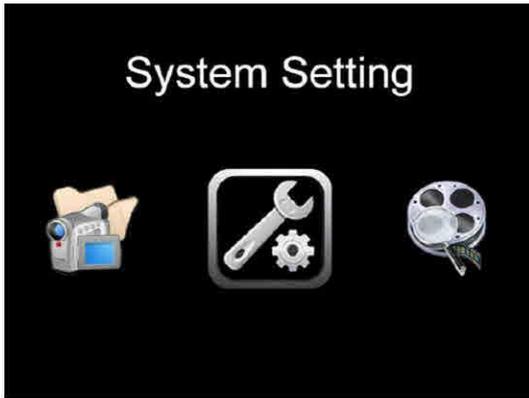
Press "menu" key enter into main menu to select the systems setting
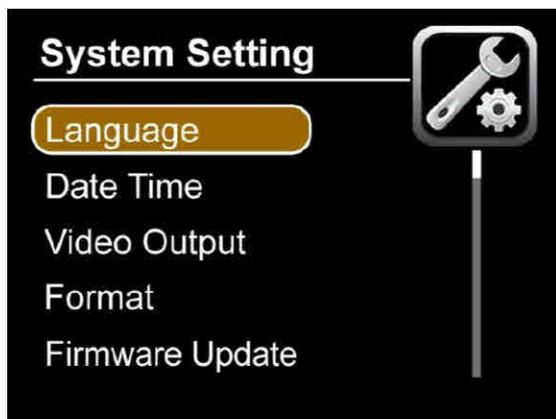
1. **Language**
   English   (English only)
2. **Date time**
   Choose Date Time press "OK" to confirm. Press"←, →"key to choose items. Press"↑,↓" to set.

3. **Video output**

It can choose PAL or NTSC mode to fit your Monitor and TV Video output.

4. **Format**
No   the system will not format the SD card.
Yes   the system will format the SD card. (caution: PLS backup the data of the SD card before operated

5. **Firmware Update**
No. the system will not be **updated**
Yes. the system will be **updated**

6. Memory info

All: **The SD full** capacity

Free: **The SD** **free** capacity
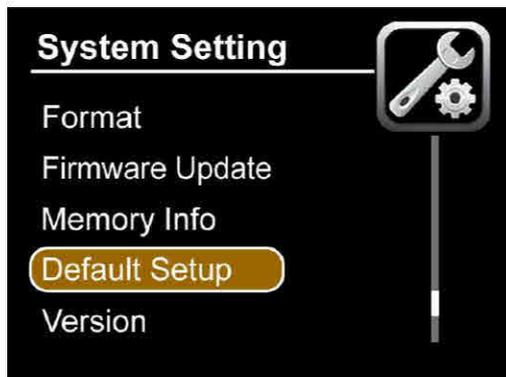
7. Default Setup

No   **customer set**

Yes   **factory set**

8. Version

Booc.12.11.05   **(soft Version)**

Press "menu" key enter into main menu to select the playback setting

Event playback

1. Video files   **all recording Video files store inside**
2. Photo files   **all snap Photo files store inside**
3. Audio files   **all recording audio files store inside**
4. All files   **All the file inside of the SD card**

Delete files

1   Press "Playback" key to find the files .Press "menu" to Choose the file you want to delete ,one and all, and then press "OK" to delete it.

Specifications

Resolution	D1: 720X576
	High Resolution:720x480
	High Resolution:640x480
Compression format	M-JEPG & Standard JPEG
Video files format	AVI
Working mode	Recording/snap photo/ audio recording
Memory	SD/SDHC card≤32GB
Power	DC12V
Working electricity	≤200Ma
Working temperature	-10℃~+50℃
Working humidity	20%~85%

Basic operation

1.   IMPORTANT: **When connecting the camera to the Monitor the power must be off .**
2.   **Screw the camera to the reel cable connect the reel to the Monitor (See Figure 1-B).make sure the camera lens is clean.**
3.   **Press the switch on the monitor and DVR will work after five seconds.**
    Gently insert the camera into a pipe duct, etc and reel out the cable until it is at the desired depth.
    IMPORTANT: Avoid kinking the fiberglass cable as this will cause irreversible damage. Do not bend under sharp angles and do not twist the cable.
    NEVER use the camera and/or cable as an unclogging tool.
4.   **adjust the led bright knob to suitable position 。**

Press the **MENU** button to enter the setup of the monitor. Move through the setup page using the select button and adjust the values with the **UP** and **DOWN** buttons. Press and hold the **UP** and **DOWN** buttons to increase

setting speed. Following values can be set between 0 and 100: **bright-contrast- color –languge-6:9 - 4:3-sleep)**

5. **To view the images on another screen (not incl.) connect that screen with a video cable (not incl.) to the** VIDEO OUTPUT on the control box.

6. **After use, switch the power off, carefully retract the camera from the inspection area. Clean the cable and wind it back on the reel. Disconnect all cables and place the protective caps back on the connectors. Make sure the camera and cables are clean and dry before storing them back in the case. Use a clean, soft and dry cloth to clean it .**

7. Storage and cleaning
   • Always return the equipment back to its protective case when not in use.
   • Do not close the case with wet equipment inside as this will increase the risk of mold.
   • Clean the rest of the equipment with a clean dry cloth. Never use solvents or abrasive solutions.

Fuse

1. **The fuse and fuse cap on battery box are not assembled during shipping, please relocate the fuse with cap to the fuse holder first before use.**

2. If the status LEDS on the control box don't light up after switching on the battery box, check the fuse.

• Turn the fuse cap counter clockwise to remove it from the battery box.

• Only replace the fuse with a new one with the same specifications as the original one (F2A250V).

Charge the battery

1) If the status LEDS on the battery box in lower level, charge the battery. Insert the charge adaptor cord into the battery charge jack.(**Figure 2)**

2) Switch to the charge position on control box.

3) Charge LED will be red during charging and turn to green when finish charging (normal charging time 6-7 hours).

Figure 2

CHARGE ADAPTOR

DC JACK

CHARGE LED

METRIC/IMPERIAL   RESET   EARPHONE   VIDEO OUT   DC 12V ⊖–⊆–⊕   FUSE

W/W2   MENU   —   ⊹
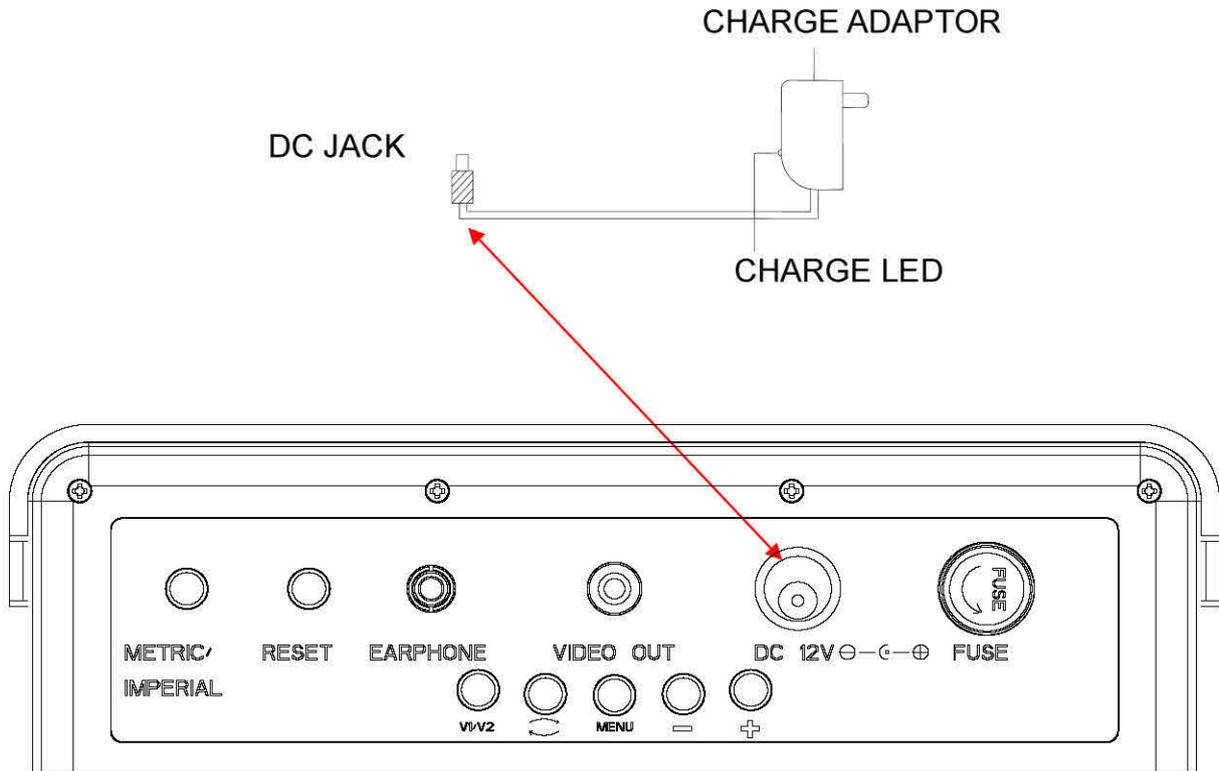
4) Battery specifications:

1. TOTAL POWER   14W
2. LITHIUM BATTERY   12VDC MAX. ≦ 40Wh
3. CHARGER   12.6V   1A
4. CHARGE TIME   5   HOURS
5. WORK TIME   ≥210   MINUTES
6. PROTECTIVE VOLTAGE   9   V
7. THE VOLTAGE BEFOR DISCHARGING 12.6V
8. LOAD CURRENT   600mA(INPUT 12.2V HOUR)

Assembly drawing and parts list

Part No.	Description
1	STAINLESS STEEL CAMERA
2	TFT COLOR MONITOR WITH DVR
3	CABLE WITH WHEEL
4	CHARGE ADAPTOR
5	AL□ ABS□ CASE
6	SUNSHADE
7	SKID1
8	SKID2
9	CUSTOMER MANUAL
10	SCREW DRIVER
11	MICROPHONE