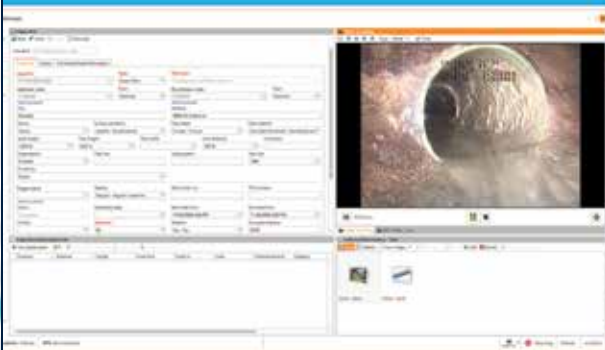


MARK3

OPERATION & MAINTENANCE MANUAL
P/N MK900, Revision: 091020



Please note that this manual should be used in conjunction with the K2 / K3 Software Operation Manual, P/N MK901.

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NOTE: Refer to manual P/N MK901 for start-up and operating procedures.

CUES® equipment is designed to be easy to use during day to day operation. However, it is powered electrically and thus must be operated with care and safety. PLEASE READ THE INFORMATION ON SAFETY AND MAINTENANCE EVEN IF THE SYSTEM IS SET UP BY SOMEONE ELSE.

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Styles and specifications are subject to change without notice.

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SAFETY PRECAUTIONS

Precautions must always be taken when operating electronic equipment. Exposed wires, damaged equipment, or improper operation can lead to a dangerous situation.

Please take a few minutes and read this entire manual prior to operating the equipment. Follow all safety procedures and thoroughly inspect equipment prior to use each day. This will help the equipment retain its full value and will reduce the risk of injury, property, and/or equipment damage.



- Read the entire manual before attempting to connect or operate any equipment.
- Connect and disconnect cables only when the electric power is turned OFF.
- Never remove protection covers from the equipment or power generator. Internal repairs should only be done by an authorized CUES technician.
- If using a portable generator, always place it in an open area away from other equipment, manholes or obstructions prior to start-up; do not use a portable generator in an enclosed area.
- Upon receipt of the equipment, check for visible damage. If there is any evidence of rough handling, if damage is found, or if any equipment is missing, please contact the CUES Customer Service at 1-800-327-7791.

PERSONAL SAFETY EQUIPMENT & TRAINING

CUES stresses the use of appropriate safety equipment while working in and around manholes and during system operation. Safety should constantly remain the utmost priority. NOTE: The user of CUES products is responsible for all training and operation under federal, state and local guidelines and regulations for both confined space entry and traffic control. Recommended safety equipment includes but is not limited to the following:

- Safety goggles
- Work gloves
- Steel-toed boots
- Reflective vests
- Hard hats
- Filter masks (full respirators may be necessary)
- Flashlights
- Safety lines
- Traffic warning signs
- Traffic cones
- Gas detectors
- Ventilation fans

CUES® makes no warranty for the use of its products and assumes no responsibility for any errors or omissions in this document or for incidental or consequential damages resulting from misuse of the products.



This manual includes setup, operation, troubleshooting, and maintenance instructions for the CUES MARK3 Portable CCTV Inspection System. Equipment information is included in the Equipment Overview chapter in this manual. The instructions in this manual are for the MARK3 system and its components only.

The MARK3 is a compact, durable, and portable system that operates CUES mainline cameras, transporters, and condition assessment software that can be mounted in a wide range of vehicles, trailers, or used as a stand-alone system. It's compact enough to easily mount in a variety of smaller vehicles, including an ATV, small pickup, and Ford Transit with room to spare.

MARK3 features built-in diagnostics for the entire system, including the video cable. The MARK3 Power Control Unit (PCU) is mounted on the MARK3 reel to operate all CUES pan and tilt cameras, including the CUES DUC and CUES transporters (with the exception of the LAMP I/II and Mudmaster). The reel control console includes variable speed control, automatic payout, and an emergency shutoff. Additional features include a built-in USB-DVR for digital video recording, video playback and digital image capture.

The CUES MARK3 System Features:

- Operates on 1000 ft. multi conductor cable
- Operates all CUES pan and tilt cameras, all non steerable transporters, and all steerable transporters, with the exception of the LAMP I/II and Mudmaster
- An additional LCD monitor can be mounted remotely and connected to the "Video Out" connector on the power control unit for truck mounted systems
- Compact, easy to mount in a variety of smaller vehicles, including an ATV, small pickup, and Ford Transit with room to spare
- LCD display case contains a built in keypad with high resolution monitor, mounted on a sturdy reinforced RAM assembly with adjustments for height and rotation
- Built in SD Digital Recorder, with digital image capture and video playback
- Digital Side Scan Camera (DUC) ready
- Built-in auxiliary hole system (3/4" holes at 12" centers) on sides of the reel to accommodate modular accessories
- See additional features in Chapter 2, Equipment Overview



STANDARD MARK3 SYSTEM

STANDARD MARK3 SYSTEM

The standard MARK3 System consists of the following equipment. Refer to the BOM and Exploded View Drawings at the back of this manual for additional information.

1

MARK3 DISPLAY CASE ASSEMBLY

- Combination Keyboard / Monitor, NTSC or PAL
- 10" Flat Screen Monitor
- Weather proof case with customized keypad for titling
- Removable for operation remotely up to 15 feet away from system with optional extension cable
- Hardware to Facilitate Mounting on Top of Reel Assembly with adjustments for height and rotation

2

PORTABLE CABLE REEL ASSEMBLY TO INCLUDE:

- Electric Motor Rewind and Auto Payout
- Automatic Level wind with bottom entry/exit cable point
- Electronic Footage Meter
- TEST CABLE
- 1000' Multi Conductor Kevlar Fiber Armored Combination TV Transmission / Tow Cable
- DUC digital connector with adaptor for analog systems (DUC Camera optional)
- Cable Strain Relief

3

WIRED & WIRELESS USB CONTROLLER (Shown on Pages 14 - 16)

- Joystick Control for Pan and Tilt Zoom Camera to Include:
 - 360 Degree Rotate
 - 330 Degree Optical Pan
- Joystick Control for All Steering Functions & Forward / Reverse Directions for Transporter
- Camera Lift Control for Optional Electronic Camera Lift
- All Other Controls for Camera to Include:
 - Camera Iris and Focus Override & Zoom
 - Camera Lights & Shutter Control for Light Enhancement
 - Camera Diagnostics & Auto Home
- Cruise Control to Set Speed of the Transporter for Hands off Operation
- All Reel Controls to Include: Retrieve, Release, Auto Payout, and Variable Speed

RECOMMENDED OPTIONS

- TIGER TAIL
- MANHOLE TOP ROLLER ASSEMBLY, TV ONLY
- (3) RETRIEVAL/DOWNHOLE POLE ASSEMBLY
- RETRIEVAL HOOK

MARK3 COMPONENT CONTROLS & LOCATIONS - DISPLAY UNIT



DIGITAL VIDEO RECORDER INSTRUCTIONS

NOTE:

- For DVR KEYPAD CONTROLS information, refer to the following pages.
- For DVR-USB operating instructions, please refer to the DVR-USB Operating Appendix, P/N EC2978-APP, located at the back of this manual.

DIGITAL VIDEO RECORDER (DVR) CONTROLS DIAGRAM



UP ARROW - DVR NAVIGATION

LEFT ARROW - DVR NAVIGATION ; FAST REWIND

SHIFT - MENU - TOGGLE DVR ON AND BYPASS

DVR MENU SELECT

RIGHT ARROW - DVR NAVIGATION
FAST FORWARD

DOWN ARROW - DVR NAVIGATION

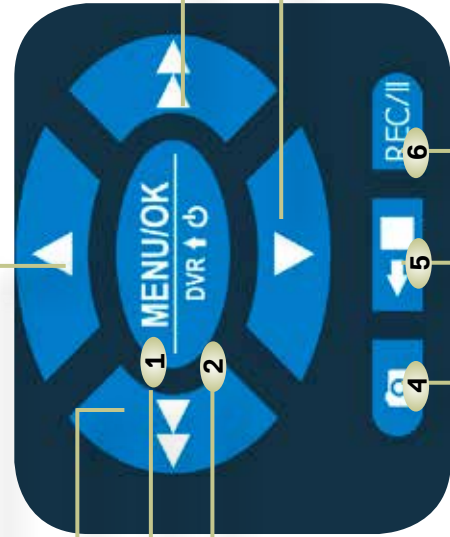


PHOTO RECORD

STOP RECORDING; BACK OUT OF DVR MENU

START/PAUSE RECORDING

KEYPAD FUNCTIONS (RECORDER)

The DVR Recorder enables recording of live video and individual snapshots from live video. DVR Menu accesses DVR set-up screens and pre-recorded videos.

1. SHIFT - MENU

SHIFT - MENU switches the source of video output to the monitor between the raw video coming into the recorder and the video being output by the DVR module. It can be used to bypass the DVR so its status icons don't appear on the viewing screen or if the input/output processing of the video causes undesirable effects during camera motion. Using these controls to select the source of the video currently being displayed does not affect what is being recorded.

2. MENU / OK

The MENU / OK button is used to enter the DVR Menu and to select the highlighted command when in the DVR Menu Mode. MENU / OK also begins a playback of a pre-recorded video file from the Play Video : External or Play Video : Internal. The STOP button is used to back out of the menu structure, in one step increments.

3. DVR Menu Arrow Keys

- Up Arrow – used to navigate DVR menu screens when in DVR Menu Mode.
- Left Arrow – fast rewinds pre-recorded file.
- Left Arrow - used to navigate DVR menu screens when in DVR menu mode.
- Right Arrow – used to navigate DVR menu screens when in DVR Menu Mode.
- Right Arrow – fast forwards pre-recorded file.
- Down Arrow – used to navigate DVR menu screens when in DVR Menu Mode.

4. SNAPSHOT

- Records snapshot (JPG) of video image

5. STOP/BACK

- Stops recording.
- Backs out of menu structure, in one step increments, when in DVR Menu Mode.

6. RECORD/PAUSE

- Records live video (MP4)
- Pause pre-recorded video or recording of live video

Recorded videos will be named by their year, month, day and then sequence during the day. For example, the first video made on October 17, 2017 will be named 20171017-00 (00 is the first number in the sequence). All videos will have the file extension .mp4 when shown in lists. Snapshots will be named by their year, month, day and then sequence during the day. For example, the first snapshot made on October 17, 2017 will be named 20171017-00 (00 is the first number in the sequence). All snapshots will have the file extension .jpg when shown in lists.

NOTE:

- For DVR-USB operating instructions, please refer to the DVR-USB Operating Appendix, P/N EC2978-APP, located at the back of this manual.

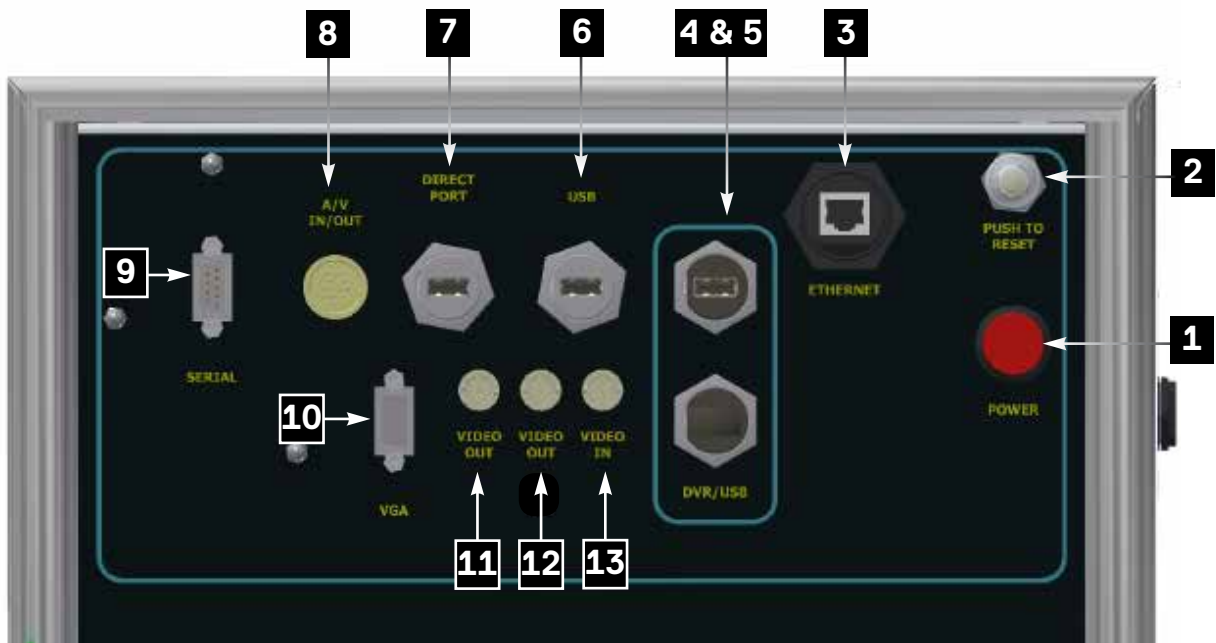
MARK3 COMPONENT CONTROLS & LOCATIONS - REEL CONTROLLER



MARK3 SIDE PANEL REEL CONTROLS

- | | |
|---|---|
| 1 | Power ON Indicator - green-illuminated light indicates that the system has power |
| 2 | Main Power Switch for Manual Reel Controls - applies power to the reel control panel |
| 3 | Auto-payout Indicator - indicates the current status of the automatic cable payout function. CAUTION: when auto-payout is active (amber light is illuminated), the reel may move at any time. |
| 4 | Emergency Stop - disables all functions on the manual reel control panel.
NOTE: does not stop the transporter |
| 5 | Reel Speed Knob - controls the speed of the reel drum when in local (manual) mode |
| 6 | Reel Direction Selector Switch - selects the direction of the cable movement when in local (manual) mode:
IN: retrieves the cable onto the drum
OUT: pays out the cable, away from the reel |
| 7 | Manual Control Selector Button (momentary push button) - when activated, enables the functions on the manual reel control panel. The default position during the PCU power-up is ON. |

MARK3 COMPONENT CONTROLS & LOCATIONS - POWER CONTROL UNIT



MARK3 POWER CONTROL UNIT

- | | |
|---------|--|
| 1 | Power ON/OFF - Main power for PCU and Reel; illuminates when ON. |
| 2 | Push To Reset – 15A main circuit breaker for 120VAC systems; 8A for 240VAC systems. |
| 3 | Ethernet - Ethernet Cable Connector; used only with DUC cameras and connects to a computer. |
| 4 & 5 | DVR-USB Ports (2) - External DVR-USB ports for the internal DVR; used to insert a DVR-USB flash drive to record from the internal DVR-USB/transfer to a remote computer. |
| 6 & 7 | USB & DIRECT Port - General use USB ports that can be used for a keyboard, mouse, gamepad controller, flash drive, etc. |
| 8 | A/V IN/OUT Port - Multi-purpose I/O port; video out, audio out, and reel footage data out for external equipment. |
| 9 | SERIAL Port - Serial Port Connector; used only to connect to a computer. |
| 10 | VGA Port - VGA Connector; used for troubleshooting, system setup, and testing; not a general purpose video display. |
| 11 & 12 | VIDEO OUT Ports (2) - Video Out; used to connect an external analog monitor or similar video device. |
| 13 | VIDEO IN Port - Video In; used to bring in an auxiliary video signal; viewable by selecting 'AUX' as the video source on the Equipment Configuration screen. |

MARK3 COMPONENT CONTROLS & LOCATIONS - REMOTE INTERCONNECT ENCLOSURE ASSEMBLY



NOTE: This assembly is not used on portable systems. The assembly is used on systems that have the reel/PCU mounted in the back of a vehicle with a standard control room featuring regular monitors, keyboard, mouse, etc.

MK315 REMOTE INTERCONNECT ENCLOSURE ASSEMBLY - FRONT VIEW

- 1 MIC - Microphone input for recording audio
- 2 & 3 USB - General USB input for keyboard, mouse, flash drive, etc.
- 4 BOOT - System Status LED: Flashing during boot-up; Solid when ready



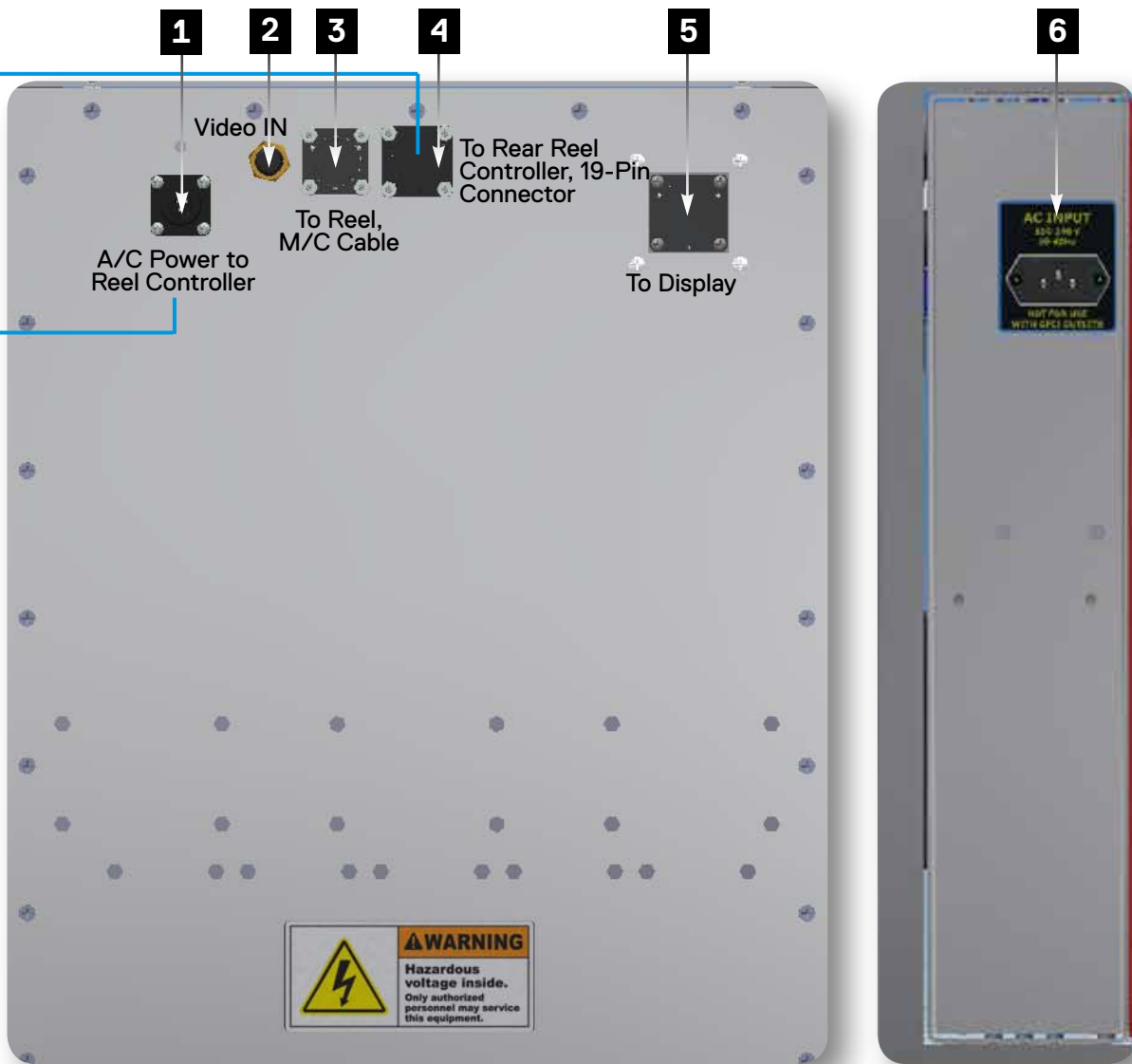
MK315 REMOTE INTERCONNECT ENCLOSURE ASSEMBLY - BACK VIEW

- | | |
|---|--|
| 1 | To PCU - Interface connection to MARK3 PCU |
| 2 | Video OUT to Monitor - System video connection to monitor |
| 3 | Audio OUT to Monitor - System audio connection to monitor |
| 4 | Audio OUT to DVR - For use with external recording device |
| 5 | Audio IN from DVR - For use with external recording device |
| 6 | Video OUT to DVR - For use with external recording device |
| 7 | Video IN from DVR - For use with external recording device |



REAR POWER CONTROL UNIT CONTROLS

- 1 To K3 PCU 19 Pin Connector
- 2 Footage Head Input from Encoder
- 3 Auto-payout Sensor Input
- 4 A/C Input (Power to Reel Controller)



MK306 POWER CONTROL UNIT - REAR CONNECTORS

- | | |
|---|---|
| 1 | A/C Power to Reel Controller |
| 2 | Video IN from HD Slipping |
| 3 | To M/C Slipping Cable |
| 4 | To Rear Reel Controller, 19-Pin Connector |
| 5 | To Display or Interface Box |
| 6 | A/C Input |

CUES K2/K3 SCREEN OPERATIONS: HELP MENU

Instructions for using the K2/K3 system are included in the HELP menu, which is accessible by pressing the F1 button at any time. The K2/K3 HELP system includes all of the information in Chapter 2 of the printed user manual.

CUES HELP INDEX

```

===== CUES HELP INDEX =====

1. KEYS: ALL SCREENS?
   ALL SET UP SCREENS?
   RUN-TIME SCREEN1?
   RUN-TIME SCREEN2?
   RUN_TIME SCREEN3?
   FREE-FORMAT SCREEN?
   FREE FORMAT RUN-TIME SCREEN?
   TEST CONTROLLER HELP SCREEN?
   LAMP11 HELP SCREEN?
   GXP HELP SCREEN?
2. FIELD ENTRY HELP SCREEN?

<ENTER> to all screens
STATUS LINE - displays the action to be
performed in each field.
    
```

Press F1 at any time to access the HELP screen.

KEYS FOR ALL SCREENS

```

===== CUES KEYS FOR ALL SCREENS =====

<F1> ----- TO HELP INDEX SCREEN
<CTRL><F2> ----- CLEAR COMMENT FIELDS
<CTRL><F4> ----- CLEAR FREE FORMAT SCN
<CTRL><F5> ----- CLEAR INSP. SETUP SCN
<CTRL><F6> ----- CLEAR ALARM
<CTRL><F7> ----- TOGGLE MUTE/UNMUTE
<CTRL><F10> ----- DEFAULT COMMENT SET

<CTRL><ALT><t> --- DISABLE/ENABLE TITLER
<CTRL><ALT><s> --- DISABLE/ENABLE STATUS
<CTL><ALT><UPARROW> SPEAKER VOLUME UP
<CTL><ALT><DNARROW> SPEAKER VOLUME DOWN
<CTRL><ALT><+>---- LOG SCREEN

<ESCAPE> previous screen
    
```

KEYS FOR ALL SET UP SCREENS

```

== CUES KEYS FOR ALL SET UP SCREENS =

<ENTER> - SELECT ACTION/HILIGHT NEXT FLD
<UPARROW> --- PREV SELECTION/FIELD
<DOWNARROW> - NEXT SELECTION/FIELD
<LEFTARROW> - MOVE CURSOR LEFT
<RIGHTARROW> MOVE CURSOR RIGHT
<DELETE> ---- DELETE AT CURSOR
<BACKSPACE> - DELETE LEFT OF CURSOR
<CTRL><DELETE> - CLEAR ENTRY
<TAB> ----- HIGHLIGHT NEXT FIELD
<SHIFT><TAB> HIGHLIGHT PREVIOUS FIELD
<SPACEBAR> -- TOGGLE TWO SELECTIONS
<CTL><ALT><INSERT> - RESTORE SCREEN
<INSERT> - TOGGLE OVERWRITE/INSERT

<ESCAPE> previous screen
    
```

KEYS FOR RUN-TIME SCREEN1

```

=== CUES KEYS FOR RUN-TIME SCREEN1 ==

<SHIFT><F1> ---- TOGGLE COMMENTS ON/OFF
<SHIFT><F2> ---- TOGGLE OBSERVATN ON/OFF
<SHIFT><F3> ---- TOGGLE INCLINE ON/OFF
<SHIFT><F4> ---- TOGGLE ARROW ON/OFF
<SHIFT><F5> ---- TOGGLE TITLE ON/OFF
<SHIFT><F6> ---- TOGGLE DATE ON/OFF
<SHIFT><F7> ---- TOGGLE TIME ON/OFF
<SHIFT><F8> ---- TOGGLE MANHOLES ON/OFF
<SHIFT><F9> ---- TOGGLE PRESSURE ON/OFF
<SHIFT><F10> --- TOGGLE DISTANCE ON/OFF
<F11> ----- TOGGLE TRANS SPD ON/OFF
<CTRL><F11> --- TOGGLE DIRECTION ON/OFF
<CTRL><F12> ---- TOGGLE LENGTH ON/OFF
ARROW-LF/RT ---- MOVE FIELDS/ARROW LF/RT
ARROW-UP/DN ---- MOVE FIELDS/ARROW UP/DN

<ESCAPE> previous menu
    
```

KEYS FOR RUN-TIME SCREEN2

```

=== CUES KEYS FOR RUN-TIME SCREEN2 ==

<F1> --- TO/FROM HELP SCREENS
<F2> --- TO/FROM EQUIPMENT CONFIGURATION
<F3> --- TO/FROM FREE-FORMAT SCREEN
<F4> --- TO/FROM FREE-FORMAT W/RUN SCRN
<F5> --- TO/FROM INSPECTION SETUP SCREEN
<F6> --- TO/FROM DISPLAY SETUP SCREEN
<F7> --- TO/FROM DIAGNOSTICS MENU SCREEN
<F8> --- TO/FROM REMINDER SETUP SCREEN
<F9> --- TO/FROM COMMENT DEFINITION SCRN
<F10> -- TO CONFIGURE REELS SCREEN
<CTRL><i>- ZERO INCLINATION
<CTRL><p>- ZERO PRESSURE
<CTRL>-<d>/<z>- PRESET/ZERO DISTANCE
<SHIFT><HOME> HOME FIELDS
<SHIFT><INSERT>TOGGLE ALL FIELDS ON/OFF

<ESCAPE> previous menu
    
```

KEYS FOR RUN-TIME SCREEN3

```

=== CUES KEYS FOR RUN-TIME SCREEN3 ==

<CTRL><f> ----- TOGGLE FONT RENDERINGS

There are two ways to input observations
either <ENTER> and
use arrow keys to see stored comment fields,
or input a code
and it will display the comment. After
either,<ENTER>will save
the observation. These work for FreeFormat
w/RunTime also.

<ENTER> ----- TO ENTER COMMENTS MODE
ARROW UP/DN - DISP. PREV/NEXT COMMENT
<ENTER> ----- SAVE THIS COMMENT
<A-Z> ----- INPUT CODE/GET COMMENT
<ENTER> ----- SAVE THIS COMMENT

<ESCAPE> previous menu
    
```


CUES K2/K3 SCREEN OPERATIONS: HELP MENU

Instructions for using the K2/K3 system are included in the HELP menu, which is accessible by pressing the F1 button at any time. The K2/K3 HELP system includes all of the information in Chapter 2 of the printed user manual.

KEYS FOR FREE-FORMAT SCREEN

```

== CUES KEYS FOR FREE-FORMAT SCREEN =

<ENTER> ----- CARRIAGE RETURN/LINE FEED
<UPARROW> --- MOVE CURSOR UP
<DOWNARROW> - MOVE CURSOR DOWN
<LEFTARROW> - MOVE CURSOR LEFT
<RIGHTARROW> MOVE CURSOR RIGHT

<DELETE> ---- DELETE SELECTION AT CURSOR
<BACKSPACE> - DELETE LEFT OF CURSOR
<TAB> ----- SPACE TO NEXT TAB STOP
<CTRL><b> --- BEGIN TEXT BLOCK SELECTION
<CTRL><c> --- COPY SELECTED TEXT BLOCK
<CTRL><x> --- CUT SELECTED TEXT BLOCK
<CTRL><v> --- PASTE SAVED TEXT BLOCK
<CTRL><f> --- TOGGLE FONT RENDERINGS

<ESCAPE> previous menu
  
```

KEYS FOR FREE-FORMAT WITH RUN SCREEN

```

=== CUES FREE FORMAT W/RUN SCREEN ===

<CTRL><f> ---- TOGGLE FONT RENDERINGS
<UPARROW> ---- MOVE RUN-TIME GROUP UP
<DOWNARROW> -- MOVE RUN-TIME GROUP DOWN
<LEFTARROW> -- MOVE RUN-TIME GROUP LEFT
<RIGHTARROW> - MOVE RUN-TIME GROUP RIGHT
<SHIFT><F2> -- TOGGLE OBSERVATION ON/OFF
<SHIFT><F4> -- TOGGLE ARROW ON/OFF

<ESCAPE> previous menu
  
```

CUES GXP HELP

```

===== CUES GXP HELP =====

<CTRL><f> ----- TOGGLE FONT RENDERINGS
<ALT><CTRL><g> - TO/FROM EQUIPM CONFGRTN
<F1>          --- HELP

<ESC>        --- MAIN MENU
  
```

- Press **<CTRL><f>** to cycle through the font renderings. There are four selections: **EBW, HBW, WWB, BBW**. The three letters are abbreviations for the background color, outline color and character color used for the text that is overlaid on the video display. **E** refers to external, meaning that the video is passed through (transparent). **W** refers to white, **B** refers to black and **H** refers to half-tone.
- Press **<ALT><CTRL><g>** to move to/from the Equipment Configuration screen.
- Press **<F1>** to display the GXP Help screen.
- Press **<ESC>** to move to the main menu.

CUES LAMP II HELP

```

===== CUES LAMP II HELP =====

The following hot keys are only valid
when the LAMP II Transporter/Camera are
being used.

<ALT><F10> ---- TOGGLE LATERAL DISTANCE
<ALT><CTRL><v> - TOGGLE VIEW MAIN/LAMP II
<ALT><d> ----- PRESET LATERAL DISTANCE
<ALT><z> ----- ZERO LATERAL DISTANCE

The following only work with the Micro
Pan & Tilt
<SHUTTER>+<DPAD +/-> Raise/Lower floods
<IRIS>+<DPAD +/-> Raise/Lower spots

<ESCAPE> previous menu
  
```

CUES TEST CONTROLLER HELP

```

===== CUES TEST CONTROLLER HELP =====

The following hot keys are only valid
on the Test Controller screen.
  
```

```

<CTRL><ALT><j>- SAVE XPORT JOYSTICK OFFS
  
```

- Press **<CTRL><ALT><j>** to save the values of the gamepad transporter analog sticks. The negatives of these values will then be added to all gamepad transporter analog stick values until the next power cycle of the system. This feature is to be used only if the gamepad's analog sticks are exhibiting 'creep', whereby when at rest, there values are not close enough to zero.

CUES CUTTER HELP

```

===== CUES KEYS FOR CUTTER =====

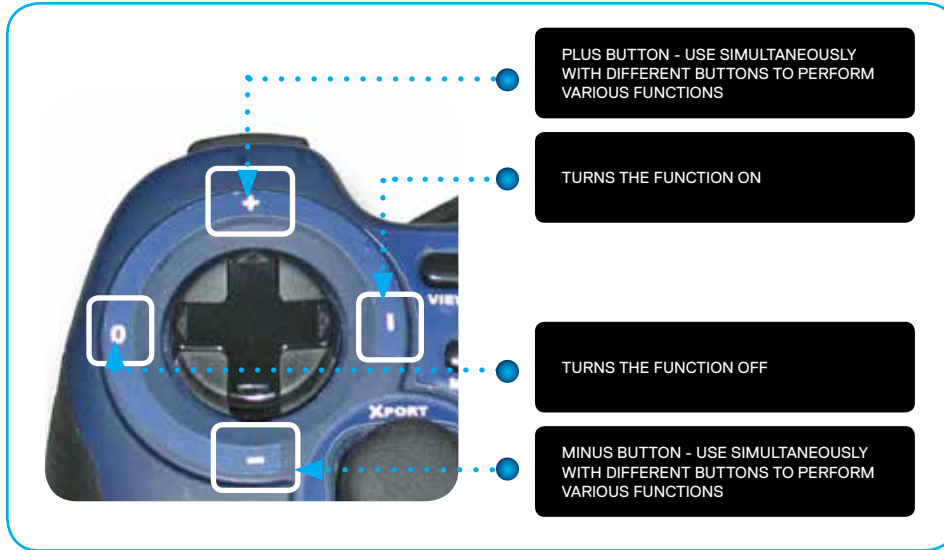
Left joystick vert : UP/DN CUT
Right joystick horz : CCW/CW CUT
Right joystick vert:FWD/REV CUT DRV
IRIS+DPAD +/- : Raise/lower UP/DN CUT
SHUTTR+DPAD +/- : Raise/lower CCW CUT
FOCUS+DPAD +/- : Raise/lower FWD/REV CUT
LIGHTS+DPAD +/- :Raise/lower flood lgts
LIGHTS+DPAD 0/1 : Raise/lower spot lgts
DIAGNOSTICS+DPAD +/- : Pan up/down
ZOOM+DPAD +/- Focus near/far
Right joystick button : Pan home
VIEW : Toggle camera view
LIFT : Toggle btwen cut/drive on FWD/REV
F11 : Toggle display of cut speed %

<ESCAPE> previous menu
  
```

CUES LOGITECH GAME PAD FUNCTIONS

WHEN USING A CUES TRANSPORTER/CAMERA

(If using a LAMP II OR CURRAHEE CUTTER, refer to Quick Card P/N's LM912 & CK912)



CUES LOGITECH GAME PAD FUNCTIONS

WHEN USING A CUES TRANSPORTER/CAMERA

(If using a LAMP II OR CURRAHEE CUTTER, refer to Quick Card P/N's LM912 & CK912)

WHILE PRESSING THE IRIS BUTTON, SIMULTANEOUSLY PRESS THE PLUS / MINUS BUTTONS TO OPEN/CLOSE THE IRIS

WHILE PRESSING THE SHUTTER BUTTON, SIMULTANEOUSLY PRESS THE PLUS OR MINUS BUTTONS TO SHUTTER FAST/SLOW TO ENABLE VISIBILITY IN LOW-LIGHT CONDITIONS

WHILE PRESSING THE FOCUS BUTTON, SIMULTANEOUSLY PRESS THE PLUS OR MINUS BUTTONS TO FOCUS THE CAMERA NEAR/FAR. ALSO, PRESS THE FOCUS BUTTON AND THE "ON" BUTTON SIMULTANEOUSLY TO AUTO-FOCUS

WHILE PRESSING THE ZOOM BUTTON, SIMULTANEOUSLY PRESS THE PLUS OR MINUS BUTTONS TO ZOOM THE CAMERA IN/OUT



USE THE JOYSTICK TO MOVE THE TRANSPORTER. PRESS TO STOP THE TRANSPORTER.

USE THE JOYSTICK TO MOVE THE CAMERA. PRESS TO MOVE THE CAMERA TO THE HOME POSITION.

WHEN MOVING THE JOYSTICKS, NO VOLTAGE WILL BE APPLIED UNTIL THE OPERATOR HAS MOVED THE JOYSTICK APPROXIMATELY 20% AWAY FROM THE CENTER. THIS MAKES IT SO THAT THE TRANSPORTER DOESN'T HAVE ANY VOLTAGE APPLIED UNTIL THE OPERATOR ACTUALLY WANTS TO MOVE THE TRANSPORTER.

CUES LOGITECH GAME PAD FUNCTIONS

WHEN USING A CUES TRANSPORTER/CAMERA

(If using a LAMP II OR CURRAHEE CUTTER, refer to Quick Card P/N's LM912 & CK912)

WHILE PRESSING THE REEL BUTTON, SIMULTANEOUSLY PRESS THE PLUS OR MINUS BUTTON TO MOVE THE REEL FASTER / SLOWER SPEED

PRESS THE REEL AND "ON" BUTTONS SIMULTANEOUSLY FOR PAYOUT MODE

PRESS THE REEL AND "OFF" BUTTONS SIMULTANEOUSLY FOR RETRIEVE MODE



WHILE PRESSING THE LIGHTS BUTTON, SIMULTANEOUSLY PRESS THE PLUS OR MINUS BUTTON TO ILLUMINATE THE EXTERNAL LIGHTS BRIGHTER OR DIMMER

PRESS THE LIGHTS AND ON / OFF BUTTONS TO TURN THE INTERNAL LIGHTS ON/OFF

PRESS IN COMBINATION WITH THE DPAD 1 TO TURN CRUISE CONTROL ON
 PRESS IN COMBINATION WITH THE DPAD 0 TO TURN CRUISE CONTROL OFF
 PRESS IN COMBINATION WITH THE DPAD + TO RAISE THE CRUISE CONTROL VOLTAGE
 PRESS IN COMBINATION WITH THE DPAD - TO LOWER THE CRUISE CONTROL VOLTAGE

PRESS TO DISPLAY THE INTERNAL DIAGNOSTICS SYSTEM.

XBOX 360 CONTROLLER FUNCTIONS

The Xbox 360 Controller functions are identical to those of the Logitech Gamepad, aside from the exceptions shown below.



1. 'GUIDE' button: To turn the controller on, press and hold down this button until the ring of LEDs around it begin flashing. The flashing will stop, and the LED in the top-left quadrant will remain lit when the controller is connected to the system.
2. The two 'CONNECT' buttons (one on the wireless receiver and one on the controller): To connect the controller to the system, perform the following steps. NOTE: This is only necessary if the ring of LEDs around the 'GUIDE' button are flashing continuously.
 - a. Make sure that the wireless receiver is plugged into a USB port on the K2/K3 and its LED is lit.
 - b. Press and hold down the 'CONNECT' button on the wireless receiver until its LED begins flashing.
 - c. Press and hold down the 'CONNECT' button on the controller until the ring of LEDs around the 'GUIDE' button start spinning. The controller is connected to the system when the LEDs stop spinning, flash a few times, and the one in the top-left quadrant remains lit.

Several wired and wireless controllers will work with the system and may be available in a critical situation from a local electronics vendor, such as a Radio Shack, Best Buy or Walmart. However, only controllers purchased through CUES will have labels and are guaranteed to have been tested with the system.

The controllers that will work with the K2/K3:

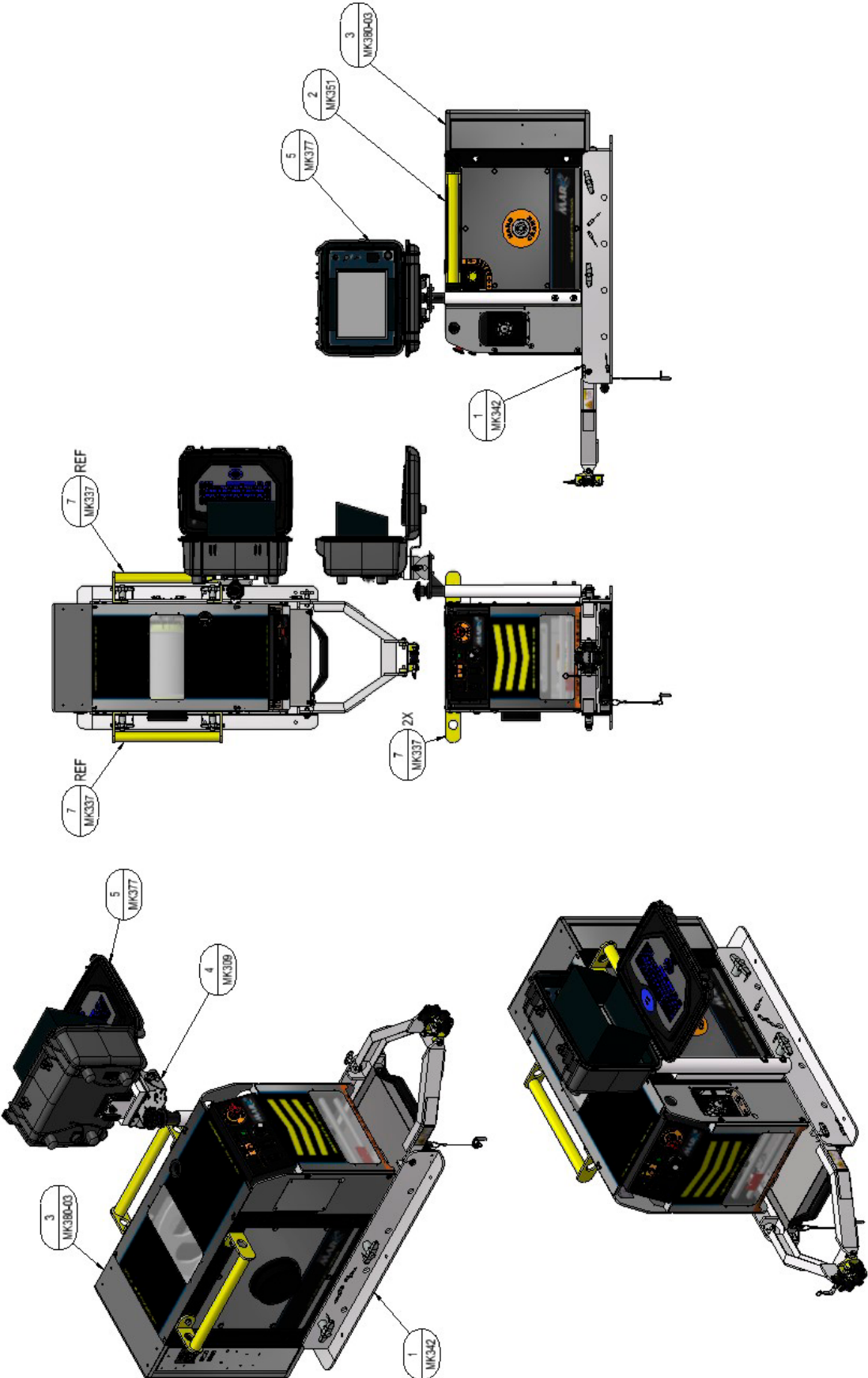
- Wired Logitech Dual-Action
- Wired Logitech RumblePad 2
- Wired Microsoft Xbox 360
- Wireless Logitech RumblePad 2
- Wireless Microsoft Xbox 360
- Logitech Wireless F710
- Logitech Wired F310

Note that this also gives the priority that controllers are given, in the event that more than one is connected to the K2/K3 at a time. (It's common for customers to have both a wireless and a wired controller available. If the batteries go dead on the wireless, the wired controller can still control the transporter, camera and lights). The system will read the highest priority controller if more than one is connected at a time. Every two seconds the system detects if any controller has been connected or disconnected and determines which controller should be read from.

PARTS & OPTIONAL EQUIPMENT

Part Number	Description
MK351	Reel Assembly
MK380	PCU Assembly
MK377	Display Case
MK309	RAM Telepole Mount for Display Case
MK342	Soft Mount for Reel
EC2384-xxxH	Cable, 8 Cond, 1 Coax, Yellow
MK337	Handle
MK673	Test Cable
MK322	Desktop Keyboard, USB
MK369	Display Case Mount for Desktop
MK315	Remote Interconnect
MK211	Wall Mount Bracket for Extension Cable
TR1987	Portable Cart - Call for information
MK371	Laptop Mount - Call for information
MK618	A/V Cable - Call for information
	System Cables - See system wiring page

MARK3 SYSTEM COMPONENTS



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CUES STANDARD 12 MONTH WARRANTY

CUES (“CUES”) warrants that all parts, components, and equipment manufactured by CUES shall be free from defects in material and workmanship under normal use and service for which it was intended for a period of twelve (12) months from the date of shipment of materials by CUES to the purchaser. CUES’ obligation under this warranty is limited, at CUES’ option, to replacing or repairing, free of charge, any defective materials returned, freight prepaid, to the CUES designated service facility. For all warranty claims, the materials must be returned in accordance with CUES Material Return Policy.

Major items of equipment, such as vehicles, generators, etc., furnished, but not manufactured by CUES, will be covered only under the warranty of the third party manufacturer of such equipment. Expendable parts, such as light bulbs, fuses, connectors, etc., are excluded from this warranty.

Purchaser must notify CUES of a breach of warranty not later than the last day of the warranty period; otherwise, such claims shall be deemed waived.

CUES does not warrant the materials to meet the requirements of the safety codes of any federal, state, municipal or other governmental or administrative jurisdiction. Purchaser assumes all risk and liability whatsoever resulting from the use of its products, whether used singly or in combination with other products, machines or equipment.

This Warranty shall not apply to any materials, or parts thereof, which have; (a) been repaired or altered by anyone other than CUES without CUES’ written consent; (b) been subject to misuse, abuse, negligence, accident, or damage; (c) not been installed or operated in accordance with CUES’ printed instructions, or; (d) been operated under conditions exceeding or more severe than those set forth in the specifications of design tolerance of the equipment.

THIS WARRANTY AND THE OBLIGATION AND LIABILITIES OF CUES HEREUNDER ARE EXCLUSIVE AND IN LIEU OF (AND PURCHASER HEREBY WAIVES) ALL OTHER WARRANTIES, GUARANTEES, REPRESENTATIONS, OBLIGATIONS, OR LIABILITIES, EXPRESSED OR IMPLIED, ARISING BY LAW OR OTHERWISE, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, REGARDLESS WHETHER OR NOT OCCASIONED BY CUES’ NEGLIGENCE.

CUES SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE RESULTING, DIRECTLY OR INDIRECTLY, FROM THE USE OR LOSS OF USE OF THE MATERIALS, OR FOR SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES, ECONOMIC LOSSES, LOSS OF PROFITS, LOSS OF BUSINESS, OR LOSS OF BUSINESS OPPORTUNITY. Without limiting the generality of the foregoing, this exclusion from liability embraces Purchaser’s expenses for downtime or for making up downtime, damages to property, and injury to or death of any persons.

CUES neither assumes nor authorizes any person (including employees, agents, or representatives of CUES) to assume for it any other liability, guarantee, or warranty in connection with the sale or use of the materials, and no oral agreements, warranties, or understandings exist collateral to or affecting this warranty.

This warranty shall not be extended, altered, modified, or waived except by a written instrument signed by CUES.

To ensure the orderly return of CUES products from our customers and to assure proper credit and warranty replacements handled in a timely manner, CUES has implemented a MATERIAL RETURN AUTHORIZATION (MRA) SYSTEM. Please read and follow the instructions below to ensure your MRA is handled properly and efficiently:

1. Once it is determined that a CUES product needs to be returned, call the CUES Parts Department in Orlando at 1-800-327-7791.
2. CUES will provide an MRA number by phone and ask a few questions.
3. CUES will then mail or fax the MATERIAL RETURN AUTHORIZATION (MRA) FORM with the MRA number, or include it with the replacement parts, if applicable.
4. Follow all instructions on the MRA Form. Make 2 copies - one for your records and the other will be used as a packing list.
5. Place an MRA sheet in with the parts that are shipped back to CUES along with a copy of the original packing slip or invoice, if possible. Send only the parts originally agreed upon with your Parts Representative. Any deviations/changes will require an additional MRA.
6. Make sure to include a copy of the MRA form for a packing slip.
7. Write the MRA number on the outside of the box.
8. Please take care in packing the parts that are to be shipped back to CUES. Parts must be individually protected from each other and appropriate packing material must be used to prevent damage during shipping.
9. Freight on the material returned is to be prepaid by the customer. Depending on the warranty determination, CUES, at its' option, may credit freight charges both ways.
10. The parts must be returned to CUES within 5 days of receipt of the MRA for credit to be granted.

Under normal circumstances, a warranty determination can be made within 30 days, and if under warranty, the part will be replaced at no charge. A credit will be issued if you have already received a replacement part. No credits will be issued until CUES receives the defective part.

*******NOTE*******

CUES will not warrant look-alike parts sold by competitors and reserves the right to charge a restocking fee.

CUES shall not be liable for any loss or damage resulting, directly or indirectly, from the use of the materials, or for special, indirect, or consequential damages, economic losses, loss of profits, loss of business, or loss of business opportunity.

Without limiting the generality of the foregoing, this exclusion from liability embraces purchaser's expenses for downtime or for making up downtime, damages to property, and injury to or death of any persons.

CUES neither assumes nor authorizes any person (including employees, agents, or representatives of CUES) to assume for it any other liability, guarantee, or warranty in connection with the sale or use of the materials, and no oral agreements, warranties, or understandings exist collateral to or affecting this warranty. This warranty shall not be extended, altered, modified, or waived except by a written instrument signed by an authorized CUES representative.

CUES MATERIAL RETURN AUTHORIZATION

Cust #:	Name:	Contact:	Date: 4/21/2004
Original SO #: N/A	SO Orig:	Dated:	New SO #:
Return For:	Reason:	Territory	Prod. Ref. Cd: 51200
S.O. To Be Credited:			
Orig:			
Explanation:			

Items Returned	
1	
2	
3	
4	
5	
6	

To ensure your MRA is handled properly and efficiently, please follow the instructions below.

1. Ship parts back within five (5) business days of receiving your MRA number. Parts ordered in error are subject to a restocking fee.
2. Send only the parts originally agreed upon with your customer service representative. Any deviations will require an additional MRA.
3. Make a copy of this sheet and keep the original for your records. Use the copy as a packing slip.
4. Write the MRA number on the outside of the box.
5. Parts must be individually protected from each other (original packaging would be best) and appropriate packing material must be used to prevent against damage during shipping.

Note: If parts are not well protected and arrive at our facility damaged in any manner, we will automatically reject them and return them to you without credit.

PARTS WILL BE RETURNED TO CUSTOMER AT CUSTOMER EXPENSE WITHOUT AN MRA NUMBER DOCUMENTED ON BOX. CUES IS NOT RESPONSIBLE FOR SHIPMENT FROM CUSTOMER TO CUES.

Use this section as a Packing Slip.

Please remember to write the
MRA number on the box.

MRA #: XXXX

Return To:

Cues
 3600 Rio Vista Avenue
 Orlando, Fl. 32805
 (407) 849-0190
 FAX (407) 425-1569
 WATS 800-327-7791

CUES PARTS & SERVICE

At CUES, we realize your return on investment is directly related to daily production in the field. By stocking the largest inventory of OEM equipment in our industry, CUES strives to ship all parts orders on the same day or within 24 hours after receipt of the order.

Whether you need a camera or a fuse, CUES will quickly process and ship your order in accordance with your schedule requirements! Our experienced parts professionals can help you with parts identification, shipping methods, equipment operation questions, and connect you to the correct specialist for troubleshooting!

CUES offers four convenient stocking locations that contain a large assortment of parts, finished products, portable, and truck mounted systems. Texas, Arizona, Oklahoma and Louisiana customers can be serviced by our local dealerships. Contact us at your most convenient stocking location! For authorized dealer locations, log onto our website at www.cuesinc.com.

Parts can be ordered via phone or facsimile! For operating hours, contact information, and locations, log onto our website at www.cuesinc.com. Contact us at your most convenient stocking location! Log onto our website at www.cuesinc.com to view the CUES Parts Department & Dealers hours & locations.

CUES Parts Department: Parts turnaround is normally within 24 hours after receipt of order. Please note that special shipping arrangements can be made at the time of the order. All return shipments received at CUES freight collect will be refused upon delivery unless previously authorized by CUES personnel. Normal operating hours are 8am to 5pm, EST., Phone: 800-327-7791, Fax: 800-831-1184.

CUES Service Depot: Service turnaround is normally 72 hours or less upon receipt at our depot, excluding weekends and holidays. All return shipments received at CUES freight collect will be refused upon delivery unless previously authorized by CUES personnel. Normal operating hours are 8am to 5pm, EST., Phone: 800-327-7791.

<p>CUES @ Corporate Office 3600 Rio Vista Avenue Orlando, Florida 32805 800-327-7791 407-425-1569 FAX</p> <p>8am - 6pm EST M-Fri</p>	<p>CUES @ Atlanta 3755 Industrial Ct. NW, Suite 14 Suwanee, GA 30024 770-945-8674 770-945-9604 FAX</p> <p>8am - 5pm EST M-Fri</p>	<p>CUES West 1943 S. Augusta Ct. Ontario, CA 91761 909-923-2001 909-923-2091 FAX</p> <p>7^{AM} - 6^{PM} PST M-Fri</p>	<p>CUES @ Northern California 640 Eubanks Court, Suite C Vacaville, CA 95688 Phone: 866-358-CUES Fax: 707-449-0260</p> <p>8:00^{AM} - 5^{PM} PST M-Fri</p>
<p>CUES @ MidWest 2325 Parklawn Drive, Suite K Waukesha, WI 53186 Phone:: 262-717-3165 Fax: 262-717-3167</p> <p>7AM - 4PM CST M-Fri</p>	<p>CUES @ Canada 1675 Sismet Rd., #2 Mississauga, Ontario Canada L4W 1P9 905-238-9178 905-238-5018 FAX</p> <p>8^{AM} - 5^{PM} EST M-Fri</p>	<p>CUES Northwest 1000 NW Commerce Ct., Suite B Estacada, OR 97023 Phone: 1.800.432.1549 ext: 403 Fax: 909-923-2051</p>	

RECORD OF REVISIONS

This Record of Revision page is designed to allow the manual user to determine the Engineering/Manufacturing level to which the manual is written. As engineering changes to the hardware and/or software are made at CUES, necessary information in the manual will be revised to reflect those changes. The latest change level and the rationale for any change(s) will be explained in tabular format on this page to allow the manual user to be better equipped should the need arise to call CUES regarding technical information.

Original Manual	Revision	Change Description
MARK3	110416	Initial release.
	013018	Removed the new DVR instructions, other miscellaneous DVR changes required; added a note to refer to the DVR-USB Operating Appendix, P/N EC2978-APP, (located at the back of this manual) for operating instructions.
	091020	Updated various drawings and instructions to match current configuration.

Innovation for over **50** Years

CUES is the world's leading manufacturer of closed circuit television video (CCTV) inspection, rehabilitation, pipe profiling equipment and asset inspection/decision support software. For over 50 years, **CUES** has provided innovative pipeline inspection technology and solutions to enable accurate condition assessment and proactive maintenance programs for buried infrastructure.

In addition to inspection equipment, **CUES** also designs, manufactures, and sells a broad range of pipeline rehabilitation and profiling equipment. These include chemical grouting systems for sewer line pipe joints capable of using a wide variety of grouting products. **CUES** also manufactures lateral reinstatement cutting systems which enable the reinstating of laterals in mainline sewers after they have been relined with any of a wide variety of liner materials. Pipe profiling is accomplished via Laser for Sonar based systems.

CUES has the most locations and dealers available to serve you! To find a local **CUES** facility, find the operating hours for a particular location, or to contact us at your most convenient stocking location, please log onto our website at www.cuesinc.com or call the **CUES** Corporate Headquarters in Orlando, Florida for more information.