

Increase the Efficiency and Quality of Your Cleaning and CCTV Operations

CUES  
**TruVue**



## TruVue

OPERATION and  
MAINTENANCE MANUAL  
P/N JC940, Revision 1: 121714



*Includes a protective sun shade,  
mounting tripod, and charger!*

"The Standard of the Industry"



800.327.7791  
salesinfo@cuesinc.com  
www.cuesinc.com





## CHAPTER 1 - Introduction

---

Introduction .....	1
--------------------	---

## CHAPTER 2 - Equipment Overview

---

Equipment Overview .....	2
--------------------------	---

## CHAPTER 3 - System Set-Up and Installation

---

Electrical and Physical Connections .....	3
Mounting the Transmitter in the Truck .....	4
Attaching The TRUVUE Control Unit To The Tripod .....	5
Powering Up the TRUVUE System .....	5

## CHAPTER 4 - Operating the System

---

TRUVUE Pairing Procedure .....	6
Battery Diagnostic Display .....	7
Charging the TRUVUE Systems .....	7
Battery/Charger Information .....	8
Understanding the Fuel Gauge .....	8
Battery Replacement Instructions .....	9

## APPENDICES

---

CUES Standard 12-month Warranty .....	12
CUES Material Return Policy .....	13
CUES Parts & Service .....	15
Record of Revisions .....	16



**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.

Care was taken in the design of this product and in the production of this document and related materials. However, **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 the use of the products or the information contained in this document. Specifications may change without notice.

All rights are reserved. No part of this publication may be reproduced, stored in any information system, or transmitted by any means, manual, electronic, or mechanical without the prior written permission of **CUES**®.

We would be pleased to hear from you. If you see any errors or desirable extensions or improvements, please write us at the following address, C/O Operator's Manuals:

**CUES**® Corporate Office 3600 Rio Vista Avenue Orlando, Florida 32805

### *More locations to serve you!*

**CUES**® Corporate Office  
3600 Rio Vista Avenue  
Orlando, Florida 32805  
800-327-7791  
407-425-1569 FAX

8am - 6pm EST M-Fri

**CUES**® Atlanta  
3755 Industrial Ct.  
NW, Suite 14  
Suwannee, GA 30024  
770-945-8674  
770-945-9604 FAX

8am - 5pm EST M-Fri

**CUES** West  
1943 S. Augusta Ct.  
Ontario, CA 91761  
909-923-2001  
909-923-2091 FAX

7AM - 6PM PST M-Fri

**CUES**® Northern California  
640 Eubanks Court, Suite C  
Vacaville, CA 95688  
Phone: 866-358-CUES  
Fax: 707-449-0260

8:00AM - 5PM PST M-Fri

**CUES**® MidWest  
2325 Parklawn Drive, Suite K  
Waukesha, WI 53186  
Phone:: 262-717-3165  
Fax: 262-717-3167

7AM – 4PM CST M-Fri

**CUES**® Canada  
1675 Sismet Rd., #2  
Mississauga, Ontario  
Canada L4W 1P9  
905-238-9178  
905-238-5018 FAX

8AM - 5PM EST M-Fri

**CUES**® toll free hot line for  
Customer Service and ordering parts:  
800-854-CUES (800-854-2837)

Copyright © 2013 by **CUES**®

All rights reserved. No part of this publication covered by the copyright hereon may be reproduced or used in any form by any means - graphic, electronic, or mechanical, including photocopying, recording, taping, or information storage and retrieval systems - without the expressed written permission of **CUES**®. Violators will be prosecuted.

Styles and specifications are subject to change without notice.

First version published in 2004. Printed in the United States of America.

## 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.
- 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

CUES stresses the use of appropriate safety equipment during system operations. Recommended minimum safety equipment includes, but is not limited to the following:

- **Safety Goggles**
- **Work Gloves**
- **Steel Toe Boots**
- **Hard Hats**
- **Flashlights**
- **Safety Lines**
- **Gas Detectors**
- **Respirator**
- **First Aid Kit**
- **Ventilating 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.*



## TRUVUE

The CUES TRUVUE Video Transmission System enables the Jet Truck operator to remotely view real time video generated from the CCTV Inspection System up to 1500 ft. away, avoiding the potential for unintended collisions between the jet nozzle and the CCTV inspection camera. The CUES TRUVUE works with all manufacturer's video inspection systems, requiring only an available video output and AC power.

This manual includes setup, operation, and maintenance instructions for the TRUVUE. The instructions in this manual are for the TRUVUE and related components only. If you're uncertain about your specific system or need more information, please call our Customer Service Department at 1-800-327-7791.





TRUVUE SYSTEM COMPONENTS			
ITEM #	DESCRIPTION	QUANTITY	P/N
1	Assembly, Control Unit, TruVue	1	JC340
2	Assembly, TriPod Adapter	1	JC341
3	TriPod, 6.25-11 Stud, Flat Head	1	HW2875
4	Kit, Wireless Video Transmitter, Truck Mount (not shown)	1	JC951





**TRUVUE BENEFITS**

- Jet Truck monitors pipe conditions in real time view identical to the CCTV Inspection operator's view. Keep your camera safe from a possible collision with the nozzle
- CCTV Truck can remain at one entry point while the Jet Truck can move from manhole to manhole, decreasing set up time and enabling the inspection of multiple cleaned pipe sections from one access point
- Easy to Use – set up within a few minutes
- Use for any operation where remote video monitoring is beneficial, including point repair and other rehabilitation processes

**TRUVUE STANDARD FEATURES**

- High resolution 8.4" LCD monitor mounted in weather proof case with protective sun shade
- Built in Lithium Iron Phosphate battery provides minimum 12 hours battery power
- Built in diagnostics to include display for voltage, amperage, charge/discharge indicator, percentage of charge, and bar graph displaying remaining charge
- Supplied with mounting tripod and battery charger



### MOUNTING THE TRANSMITTER IN THE TRUCK

Mount the transmitter, P/N JC951, to the truck/vehicle, per the instructions in P/N JC951-INST. Ensure the transmitter has an unobstructed view and is within reach of the video and power source.

- Plug the transmitter into the A/C power.
- Plug the video cable into an unused video output.

### CONNECTING THE TRUVUE SYSTEM

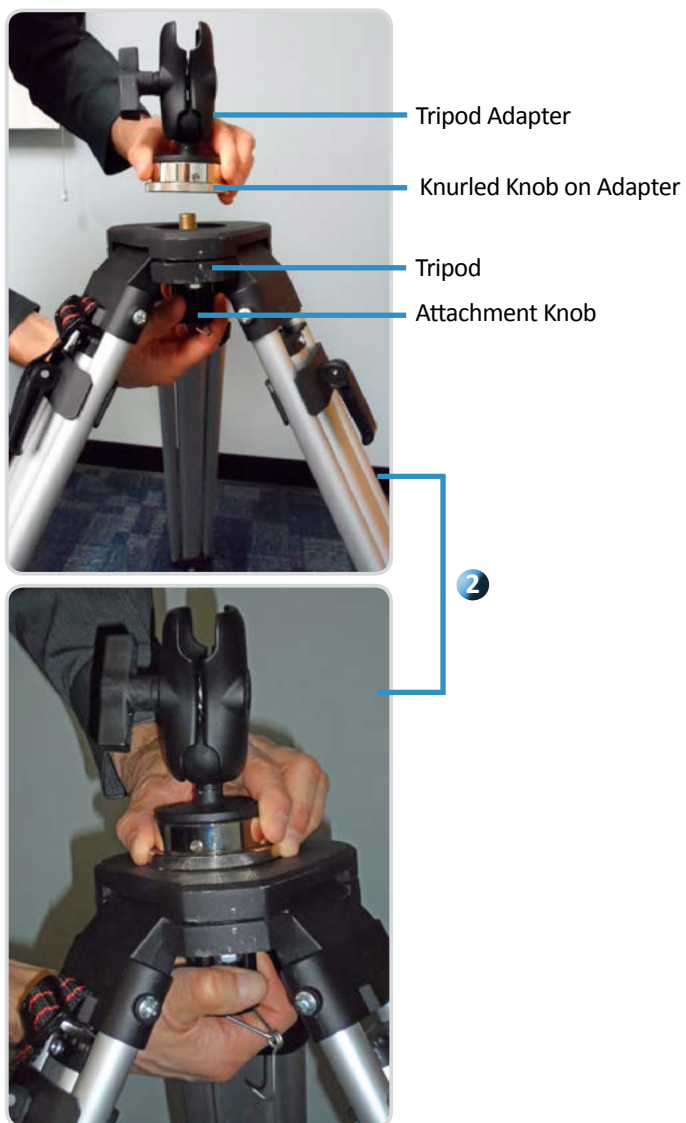
The CUES TRUVUE Wireless Display System includes a tripod, control unit, sun shade, and charger. To assemble the TRUVUE System, perform the following:

- 1 Expand/lengthen the legs on the tripod to the desired height/position.
- 2 Attach the Tripod Adapter to the tripod as shown. While holding the attachment knob at the bottom, turn the knurled knob at the top until secure.



*The control unit can be rotated/positioned based on your needs!*

\*\* TRUVUE includes a control unit, sun shade, tripod, and charger. The system can be used with or without the tripod.



### ATTACHING THE TRUVUE CONTROL UNIT TO THE TRIPOD

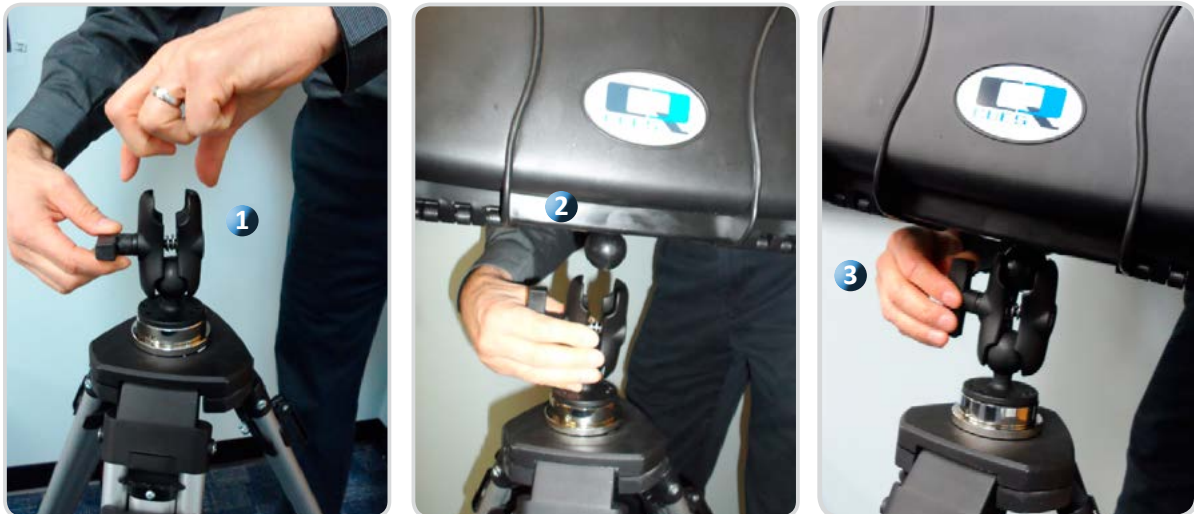
Attach the TRUVUE Control Unit to the Tripod Adapter per the following steps:

- 1 Loosen the coupler until wide enough to accept the ball mount located at the bottom of the control unit.
- 2 Insert the ball mount into the coupler.
- 3 Hold the control unit in the desired position and tighten the knob until secure.

### POWERING UP THE TRUVUE SYSTEM

To turn the system ON, perform the following:

- 4 Press the power button. The button will illuminate in a blue color and the screen will turn ON.
- NOTE: If the system does not turn ON, it might be necessary to charge the battery.



**TRUVUE PAIRING PROCEDURE**

When using TRUVUE, the wireless receiver and its corresponding transmitter must be “paired” to each other.

- 1 When pairing commences, a message will be displayed on the screen. When complete, a picture will be visible on the screen and the pairing light will remain lit.
- 2 If the pairing procedure fails, a message will be displayed on the screen. The pairing will fail if the TRUVUE did not receive a signal from the truck.



1. When using TRUVUE, the wireless receiver and its corresponding transmitter must be “paired” to each other. Once paired, they will remain so and “remember” each other, even while powered down.
2. Make sure both devices are powered up (note: on the truck-mounted transmitter, the “POWER” LED will only light for a second or two after power-up).
3. Press and hold the “PAIR” button on one device (transmitter or receiver) until the “LINK” LED begins flashing; this should take approximately 1 second (note: on the truck mounted transmitter, the LED labeled “POWER” LED functions as the “LINK” indicator).
4. Repeat the above step on the other device (corresponding receiver or transmitter).
5. Within 60 seconds the pairing should be established. If the pairing is successful, the “LINK” LEDs on both devices will remain on.
6. If pairing has failed, the on-screen display on the monitor connected to the receiver will show “PAIRING FAILED”. If pairing fails, check power to both devices and/or move them closer together or into line-of-sight if necessary.



### BATTERY DIAGNOSTIC DISPLAY

The Battery Diagnostic Display contains the following data:

- 1 VOLTAGE
- 2 CURRENT
- 3 BATTERY CHARGE INDICATOR
- 4 PERCENT CHARGED
- 5 DS / CH FOR DISCHARGING OR CHARGING

### CHARGING THE TRUVUE SYSTEM

The TRUVUE System is designed to operate for 12+ hours. If the TRUVUE system does not turn ON, makes a beeping sound, or the battery charger indicator is low or not displayed, it might be out of power. To charge the TRUVUE System, perform the following:

- 6 Plug in the battery charger as shown.

System charge times:

3 hours = 90% Charged

6 hours = Fully Charged

If a CH is displayed, the system is charging.

If a DS is displayed, the system is discharging.



### GENERAL BATTERY/CHARGER INFORMATION

- The TRUVUE wireless display unit uses a 12.8 volt LiFePO4. This type of battery does not exhibit “memory” like NiCad batteries, so there is no need to completely drain the battery before recharging.
- Charge only with supplied charger. The LED on the charger will be RED while charging and change to GREEN when charging is complete. The charge time for a fully discharged battery is about 6-8 hours. Partial charges are acceptable with no harm to the battery.
- The allowable temperature range for battery operation is 0 to 45°C (32 to 112°F) for charging and -20 to 60°C (-4 to 140°F) for discharging.
- The system run time with a fully charged battery is about 12.5 – 13.5 hours when the battery is new. The battery capacity will slowly diminish as the battery ages and the battery should be replaced when the run time is significantly shortened (this should be after about 12,000 hours of usage).
- The system will automatically shut off when the battery reaches its low limit to prevent over-discharging.
- A battery “fuel gauge” is provided to monitor the current state of the battery and provide an estimate of the remaining battery capacity.

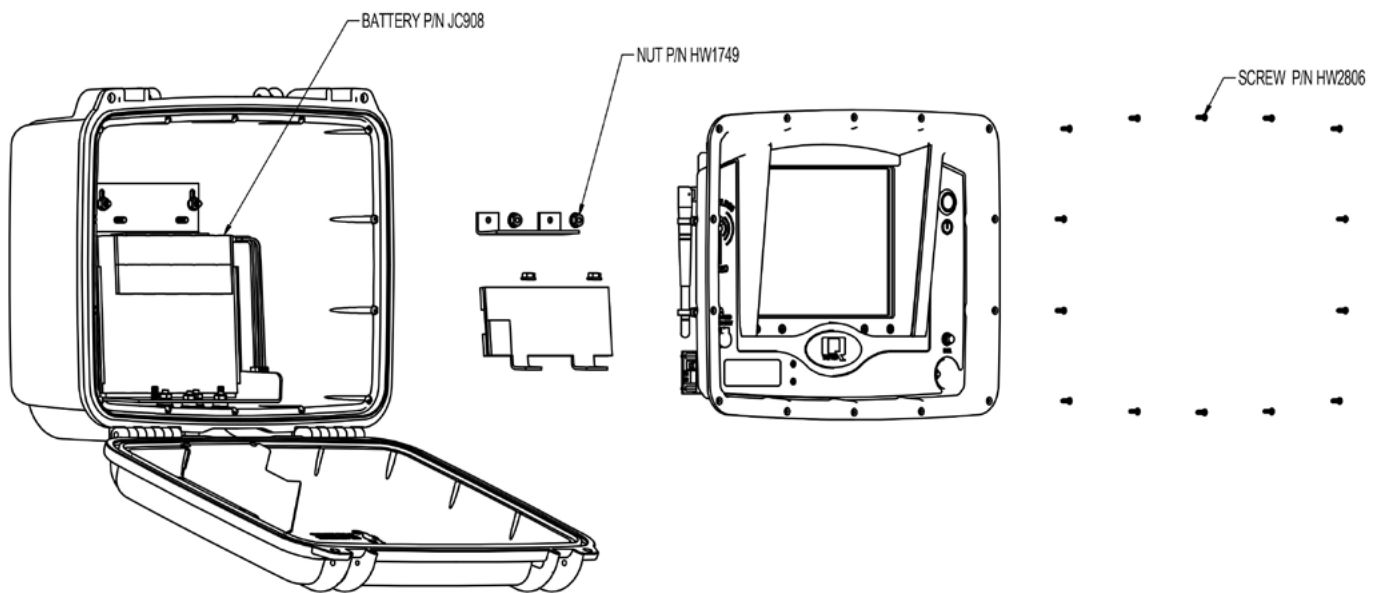
### UNDERSTANDING THE FUEL GAUGE

- The fuel gauge shows the following information:
  - Battery voltage – should run between 13.3 down to 12.5V during normal operation.
  - Battery current – should indicate between .6A and .8A while in operation; during charging, it will start at about 3.0A, then slowly drop to 0A.
  - Status – charging (CH) or discharging (DS).
  - Remaining battery capacity – both in bar graph and percentage form. At 0%, an alarm sounds to warn that it is time to recharge the battery.
- Keep in mind, the remaining battery capacity is an estimate and is only accurate to about 10% of the capacity that has been used.
- Under most circumstances, when the battery is nearing 0-10%, the gauge will err on the low side (the actual remaining capacity will be somewhat higher than what is displayed on the meter); this will prevent a false sense that more battery capacity remains than is actually available.
- The system can usually still be run for a while after the meter shows 0% and alarm sounds. The remaining time depends on the voltage reading displayed on the meter: at about 12.7V the battery should provide about another hour of usage; at 12.5V it should provide another ½ hour; below 12.1 volts, only a few minutes of battery life remain.
- To keep the battery and fuel gauge synchronized, the system should be allowed to fully charge (8+ hours) at least once every fourth or fifth charge.
- Under unusual circumstances, the battery gauge may get out of sync and show less than 100% charge when the battery is actually fully charged (the charger shows a green “fully charged” indicator and the charge current on the gauge shows 0A). This will not affect available run time but will result in the meter showing 0% battery capacity when several hours of capacity still remain. To correct, allow the system to remain powered on after the gauge displays 0% until the gauge shows that the battery has dropped to less than 11.8V (it can also just be left on until it automatically shuts off). After fully recharging, the gauge should show 100% and be resynchronized with the battery.

**BATTERY REPLACEMENT INSTRUCTIONS**

Note: Step #1 is optional, but will significantly reduce the time needed to synchronize the battery gauge to the new battery. The new battery will arrive with a 40 - 80% charge and will not initially agree with the battery gauge.

1. Prior to removing the old battery, charge the viewer until the battery gauge reads at least 90% charge.
2. Remove the (14) screws holding the bezel in the case. CAUTION: Do not lose the o-rings that are installed on the screws. They will need to be replaced after the battery is replaced.
3. Remove the bezel from the case just enough to reach battery connector cable and unplug the cable from the circuit board.
4. Remove the (4) nuts holding the battery retainer brackets and remove the brackets.
5. Remove and replace the battery and perform the reverse of steps 2-4.
6. Turn the viewer ON and check the battery gauge. If the gauge reads a 90% charge or more, proceed to the next step. If the gauge reads less than a 90% charge, leave the viewer ON until the gauge reads less than 11.8 Volts (disregard any beeping sound) or until the viewer automatically shuts OFF. The discharge step can be performed during normal usage.
7. Fully charge the viewer until the charger light is GREEN. Verify that the battery gauge reads a 100% charge. If less than 100%, repeat Step #6 discharge and Step #7 charge.





To be added at a later date.

To be added at a later date.

## 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

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

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](http://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](http://www.cuesinc.com).

Contact us at your most convenient stocking location! Log onto our website at [www.cuesinc.com](http://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.

### *West Coast*

#### **For West Coast Customers:**

The parts and service depot is located at 1943 S. Augusta Court, Ontario, CA, 91761. Normal operating hours are 8am to 5pm, PST  
Phone: 800-544-8695

### *Canada*

#### **For Canadian Customers:**

The parts and service depot is located at 1675 Sismet Road, Unit 2 & 3, Mississauga, Ontario L4W1P9  
Phone: 905-238-9178.

## 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	Date	Change Description
TRUVUE	10/08/14	Initial preliminary release
	11/14/14	Added new battery instructions.
	12/17/14	Added main system component part numbers and descriptions.



## Contact **CUES**

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](http://www.cuesinc.com) or call CUES' Corporate Headquarters in Orlando, Florida for more information.

### **CUES Corporate Office**

3600 Rio Vista Avenue  
Orlando, Florida 32805  
Phone: 800-327-7791  
Fax: 407-425-1569  
Hours: 8AM - 6PM EST M-Fri  
Email: [salesinfo@cuesinc.com](mailto:salesinfo@cuesinc.com)  
[www.cuesinc.com](http://www.cuesinc.com)



**[www.cuesinc.com](http://www.cuesinc.com)**