

Vision Systems

Safe-T-Scope™ 5" Rearview Backup Camera System

INSTALLATION/USER'S MANUAL
STSK5665



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● **WARNING**

1. To prevent electrical shock, **DO NOT OPEN THE MONITOR CASE.**
There are dangerous voltages inside the monitor. There are no user serviceable parts inside.
2. Avoid exposing monitor to water, rain, moisture etc. It is NOT waterproof. Any moisture inside the monitor could cause extensive damage.
3. Do not disassemble the camera. This voids the warranty.
Disassembling the camera will compromise the waterproof seal.

● **STORAGE**

1. Do not expose the monitor to excessive heat or cold. The storage temperature of this machine is -13°F to 176°F, and operating temperature is 14°F to 140°F.
2. Do not store or operate in humid environments.

● GENERAL

1. This system is intended for use in automotive applications. Power source should be an automobile storage battery (12V/24V).
2. Make sure all cables are connected properly. Improper cable connections may damage the monitor. Remove the cable connection when you do not intend to use the unit for a long period of time
3. Please install this system according to the instructions in this manual.
4. Connect the system to an ignition switched power source. Connection to an unswitched battery source will reduce battery life.



This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference.
- (2) This device must accept any interference received, including interference that may cause undesired operation.



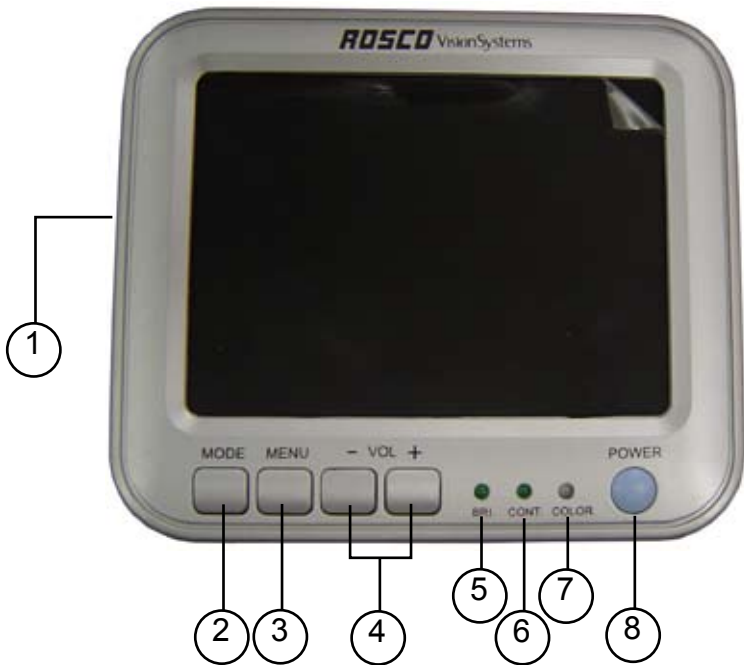
E13

Warning!

1. High voltage is within the monitor and opening of enclosure is only allowed to professionals.
2. Do not watch video while driving.

Special Notice

A few highlights or dark spots may occur on the LCD screen. It is a very common phenomenon to the active matrix display technology, and never necessarily means any defects or faults. Never try to repair this machine by yourself. In case of any fault or failure, please turn off the display at once, and notify our company or the corresponding dealer. The monitor is made up of many precise electronic components. Any disassembly or modification may lead to damage or broken.



Front view

1. Mini Switches - Turns mirror function on and off for Camera 1
2. Reduces the brightness to prevent glare. Switching the monitor to day mode or night mode.
3. Menu - Switches to setup mode. (See p.8 for options)
4. Volume +/- & Menu Control - Increases & Decreases Volume & Adjust Menu settings
5. Brightness Control
6. Contrast Control
7. Color - Indicates dimming status & Tint Control - LED is lit orange if the monitor is operating in day mode, green if night
8. Power Switch - Switches Monitor from Stand-by to Steady-on

COLOR BACKUP CAMERA SYSTEM

STSK5665

INTRODUCTION

Please read this manual thoroughly. This manual contains instructions to make the installation of the camera and monitor easier. The color backup camera system is a supplement to standard rear-view mirror systems, and will provide additional rear-view vision when installed and maintained properly. It is not intended in any way to be a substitute for careful and cautious driving. All applicable traffic laws and motor vehicle safety regulations must still be obeyed.

FEATURES

STSC108 CAMERA

- CMOS Camera
- <1 Lux sensitivity (18 IR-LED)
- Field of view 110° Diagonal
- Back Light Compensation (BLC)
- Automatic electronic iris provides a clearer, more consistent image in low and bright light
- Compact and lightweight design installs easily into most vehicles
- Waterproof/dustproof IP69 rating
- Wind deflector reduces buildup of dirt on lens

STSM212 TFT LCD COLOR 5" MONITOR

- Menu Control for Picture, System and Options
- One Camera
- Power/stand-by switch
- Powerful built-in speaker
- Day/Night Mode

CONTENTS OF COMPLETE SYSTEM

1 Camera

with Accessories - Mounting Bracket w/ hardware
- Wind Deflector
- 65' Camera extension cable

1 Monitor

with Accessories - "Duckfoot" universal bracket for surface-mounting of monitor on dashboard or headliner, including adhesive pad
- Power / Video / Audio Distribution harness.

INSTALLATION INSTRUCTIONS

Note: The following instructions are for typical rear-view application.

STSC108 CAMERA

1. Attach camera bracket close to rear marker lights, centered on vehicle (see Fig. 1). Attachment point must be sturdy enough to support camera and bracket.
2. We do not recommend mounting the camera near the lower area of the vehicle (ex: bumper). This reduces the view of the camera and increases the chance of physical damage to the camera.
3. Attach camera to bracket using screws provided. Adjust angle as indicated in Fig. 2. (Use rear bumper and back of vehicle as a reference point.)
4. Wind deflector may be installed. This deflector is designed to reduce the buildup of dust, dirt and moisture on the camera lens. (See Fig.3)

STSM212 MONITOR

1. Attach monitor inside vehicle in a location convenient to the driver (ex: center of dash, overhead, or flush-mounted in dash).
2. Attach the "duckfoot" bracket to the dashboard or to the headliner using self-tapping screws and/or adhesive pad.
3. Fasten monitor to "duckfoot" and adjust mounting angle to allow optimum driver viewing comfort. (See Fig. 4.)

CABLE

1. Be sure to position the cable properly. The male end attaches to the camera. The female end attaches to the power/video/audio distribution harness, typically located under the dashboard. (See Fig. 5.)
2. Do not run the cable over sharp edges or corners. Do not kink the cable. Keep the cable away from hot and rotating parts.
3. Fasten all cable runs, and secure all excess cable.

WIRING CAMERA AND MONITOR

1. Connect the red wire to an ignition switched accessory (ex: radio) power source, and connect the black wire to chassis ground. See wiring diagram for connections (See Fig. 5.)
2. Before drilling, be sure no cable or wire is on the other side. Be sure to drill a 20mm (0.8in) diameter hole only.
3. Feed as much cable as possible into vehicle and clamp securely. This reduces the possibility of it being hooked or snagged.
4. Keep all cables away from HOT, ROTATING and ELECTRICALLY NOISY components.
5. Camera: Drill a 20mm (0.8in) diameter hole into vehicle body near the camera and bracket. Insert camera cable into vehicle (be careful not to kink cable) and fit grommet into hole. Apply sealant around grommet to increase resistance to water penetration. Connect camera to the camera extension cable which runs inside the vehicle.
6. Monitor: The monitor terminates in a 13-pin connector, which should be connected to the mating 13-pin receptacle end of the power/video/audio distribution harness.
7. For typical rear-view installation, connect the camera extension cable from the rear-view camera to the 4 pin connector.
8. The green wire is the REVERSE trigger wire. In typical rear-view installations, connecting this wire to the vehicle's backup light circuit will activate the rear-view image whenever the vehicle shifts into reverse.
9. **FUEL TANKERS & OTHER SPECIALTY VEHICLES:** All electrical equipment fitted to petroleum vehicles must be connected via battery master switch and must be isolated from the battery while the vehicle are loading and unloading. For other specialty vehicles, please check applicable code and regulations prior to installation.
10. Always consult your dealer when fitting any electrical or electronic equipment to a vehicle fitted with a CAN-bus or multiplex system.

FUNCTIONS AND OPERATION

MONITOR

1. MINI SWITCHES
Both mini switches activate the mirror function for the Camera.
2. POWER
If the monitor is switched off, press the "Power" switch, to switch the monitor on. the picture appears. Test if the mirror function is correctly set. The setting should be such that an obstacle behind the vehicle on the right also appears on the right in the monitor. Press the main switch "Power", to switch off the monitor. The picture disappears.
3. VOLUME +/-
You can set the volume to amplify or mute the noises transmitted by the camera. Press the "-" button to reduce the volume.
Press the "+" button to increase the volume.
4. 'MENU' Button (See)
Press the MENU button **once** to set desired **brightness**.
Press the MENU button **twice** to set desired **contrast**.
Press the MENU button **three times** to set desired **color**.
5. MODE
Switching the monitor to day mode or night mode.
When in night mode, the monitor darkens the image on the monitor to prevent glaring light that can distract the driver.
Press the main switch "MODE".
The monitor is switched from day mode to night mode or vice versa.
The LED "COLOR" is lit orange if the monitor is operating in day mode.
The LED "COLOR" is lit green if the monitor is operating in night mode.

HOW TO SET YOUR MONITOR TO YOUR REQUIREMENTS

NOTE: On-screen menu commands may only be selected when monitor is in Steady-on (green light) mode. When monitor is in standby mode, and activated by trigger signal, on-screen menu commands are disabled.

To set monitor to suit your requirements, proceed as follows:

- Press the "MENU" button once to set the desired brightness.
- The LED BRI. starts flashing.
- Press the "-" button to reduce the brightness.
- Press the "+" button to increase the brightness.
- Press the "MODE" button to exit setup mode.

- Press the "MENU" button twice to set the desired contrast.
- The LED CONT. starts flashing.
- Press the "-" button to reduce the contrast.
- Press the "+" button to increase the contrast.
- Press the "MODE" button to exit setup mode.

- Press the "MENU" button three times to set the desired color.
- The LED COLOR. starts flashing.
- Press the "-" button to reduce the tint.
- Press the "+" button to increase the tint.
- Press the "MODE" button to exit setup mode.

Note: You can reset the monitor to the factory settings for brightness, contrast, tint and volume.

To do this, proceed as follows:

- Press the "MENU" button once.
- The LED BRI. starts flashing.
- Press the "MODE" button.

SPECIFICATIONS

STSC108 CAMERA

PICK-UP DEVICE	CMOS 1/3 OV7949
TV SYSTEM	NTSC
PICTURE ELEMENTS	510(H) x 496(V) PAL 626(H) x 586(V) NTSC
SENSING AREA	0.232x0.165in (5.9mm x 4.2mm)
IMAGE SIZE	1/3 inch
SYNCHRONIZATION	INTERNAL
HORIZONTAL RESOLUTION	380 TV LINES
REQUIRED ILLUMINATION	0 LUX MINIMUM/F1.2
SIGNAL TO NOISE RATIO	MINIMUM 48dB(AT AGC OFF)
POWER SUPPLY	9V - 12Vdc
POWER CONSUMPTION	1.5W(AT 12Vdc)
CURRENT CONSUMPTION	MAX. 150mA
LENS ANGLE	110°(D),98°(H),82°(V)
OPERATION TEMPERATURE	-4°F to 149°F (-20°C to +65°C)
STORAGE TEMPERATURE	-22°F to 176°F (-30°C to +80°C)
WEIGHT	400g (0.88lb)
DIMENSIONS (W x H x D)	3.54 x 2.76 x 3.39in (90 x 70 x 86mm)

STSM212 MONITOR

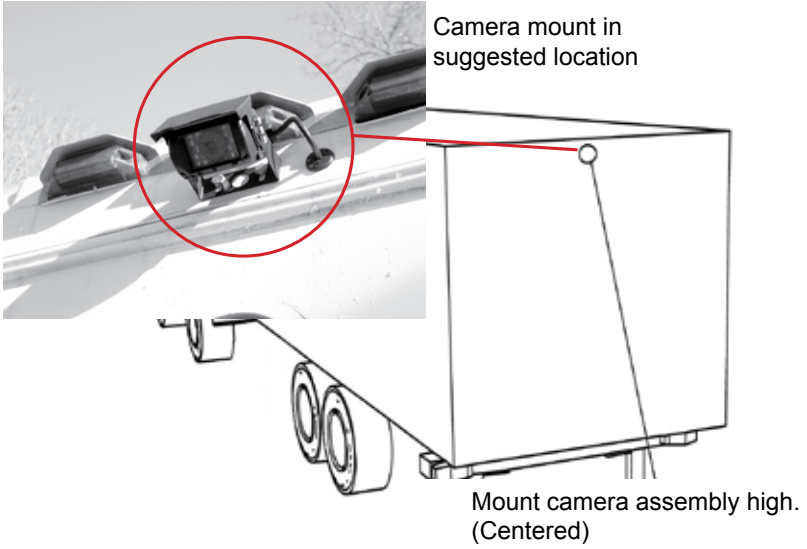
SCREEN 5.0 inch (128mm)	COLOR TFT-LCD
VIEWING ANGLE	50°(LEFT/RIGHT), 15°(TOP), 35°(DOWN)
POWER CONSUMPTION	10W/560mA MAXIMUM
POWER SOURCE	12-28Vdc
TV SYSTEM	PAL/NTSC
VIDEO INPUT/OUTPUT	COMPOSITE VIDEO SINGLE 1VP-P 75 OHM
RESOLUTION	960(H) x 234(V)
CONTRAST	350:1
BRIGHTNESS	200cd/m ²
OPERATING TEMPERATURE	14°F to 140°F (-10°C to +60°C)
STORAGE TEMPERATURE	-13°F to 176°F (-25°C to +80°C)
WEIGHT	330g (0.728lb)
OUTER DIMENSIONS (W x H x D)	5.67 x 4.88 x 1.06in (144 x 124 x 27mm) (without flush mount)

DISCLAIMER

The use of the STSK5665 Vehicle CCTV system should not in any way be used as a substitute for careful and cautious driving. Always obey traffic laws and motor safety regulations must always be adhered to.

Specifications subject to change without any notice.

Fig. 1



Camera mounting hole pattern

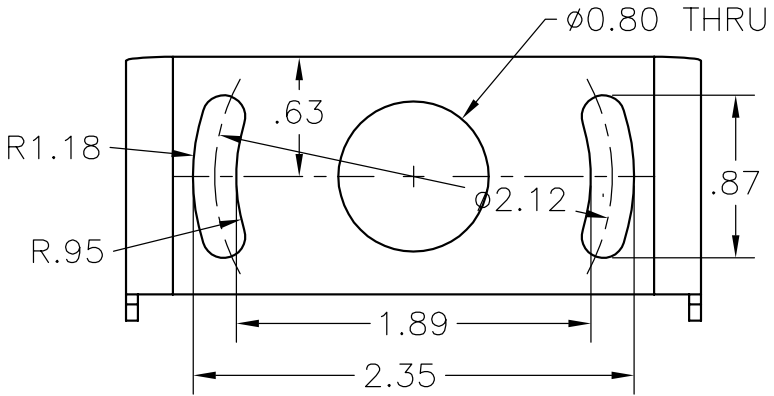
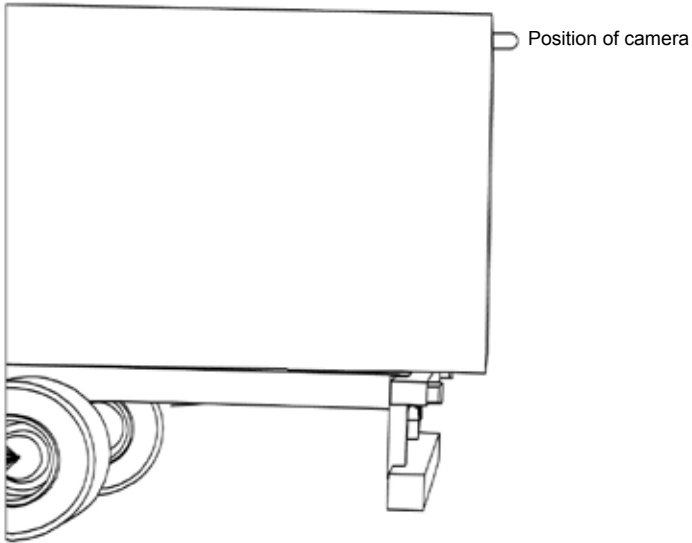


Fig. 2



Vehicles behind truck

Street



Rear Bumper

Typical monitor image of view from properly installed camera

Fig. 3

Optional wind deflector

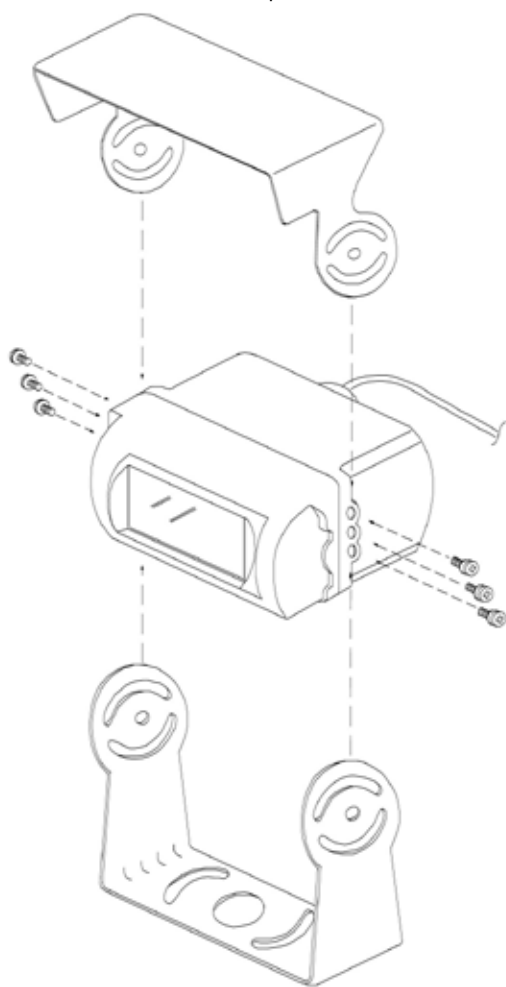
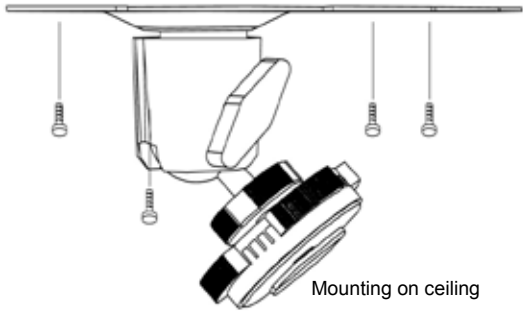


Fig. 4



Mounting on the dash, console etc.

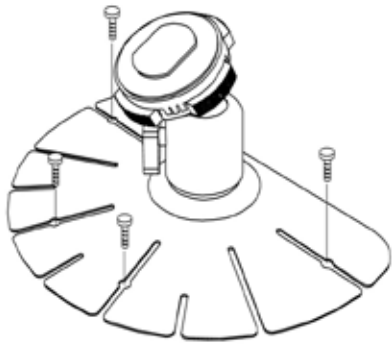
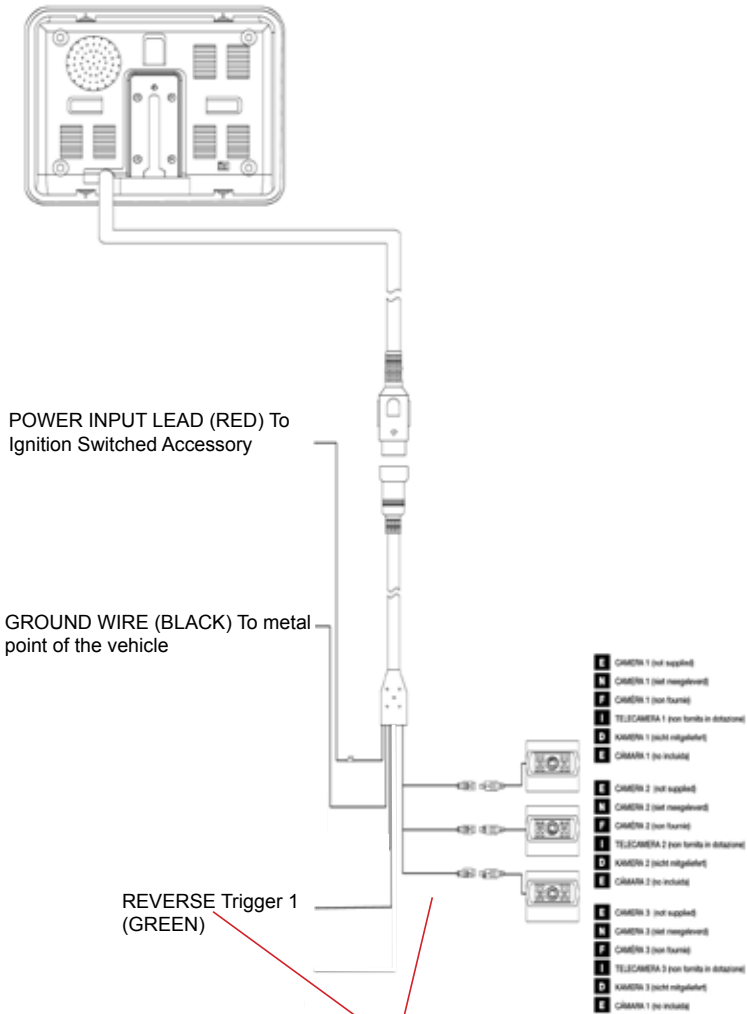
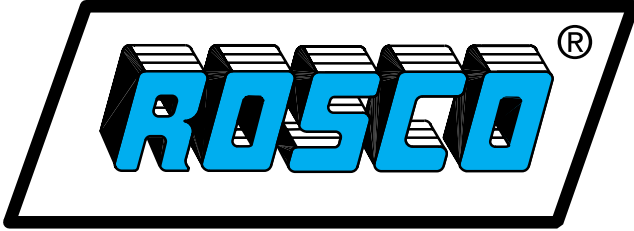


Fig. 5



Note: For typical installation, this trigger wire should be connected to the vehicle's "back up lights" circuit, and the rear-view camera should be attached to the connector as shown



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