

VisionSystems

Safe-T-Scope™ 7" Rearview Backup Camera System

INSTALLATION/USER'S MANUAL
STSK7565



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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 or the monitor. 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 $-13^{\circ}\sim+158^{\circ}$ F, and operating temperature is $-5^{\circ}\sim+149^{\circ}$ 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.



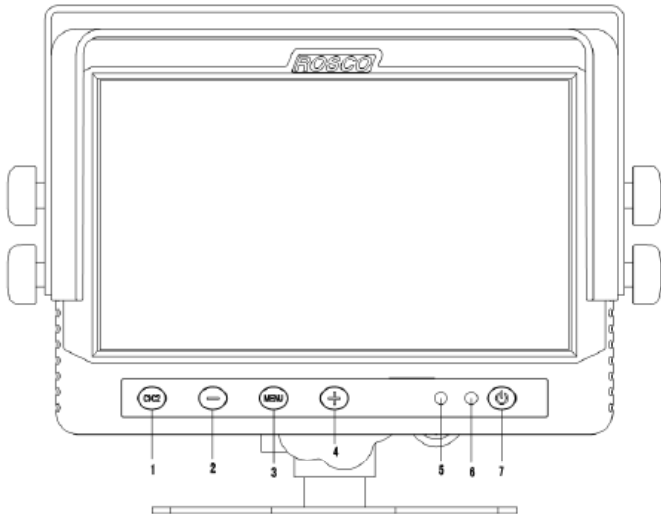
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

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



 **Warning!**

1. High voltages exist within the monitor. Opening of monitor case is unsafe, and never necessary for operating purposes.
2. In case of any 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 and voiding of warranty.



1. "C1/C2": Switch from camera 1 to camera 2
2. "-": Reduce the volume or adjust the menu setting lower
3. "Menu": Access and exit the display menu
4. "+": Increase the volume or adjust the menu setting higher
5. Light sensor
6. Red/Green light: It will be red when in stand-by state and will be green when working
7. "Power": Turn the system on/off

COLOR BACKUP CAMERA SYSTEM STSK7565

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

STSC150 CAMERA

- 360,000 pixel image sensor
- 0.5 Lux sensitivity (18 IR-LED)
- Auto White Balance (AWB)
- 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 IP69K rating
- Wind deflector reduces buildup of dirt on lens

STSM250 TFT LCD COLOR 7" MONITOR

- Menu button for Picture, System and Options
- Camera 1/ Camera 2
- Power/stand-by switch
- Built-in speaker
- Backlit buttons
- Auto-dim

CONTENTS OF COMPLETE SYSTEM

1 Camera

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

1 Monitor

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

INSTALLATION INSTRUCTIONS

IMPORTANT: For typical rear-view installation, the rear camera MUST be connected to the power harness at the connector marked “REVERSE”

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

STSC150 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 (e.g. 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)

STSM250 MONITOR

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

STSH320 CAMERA EXTENSION CABLE

1. The camera to cable connection is waterproof. 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.)

IMPORTANT: For typical rear-view installation, the rear camera MUST be connected to the power harness at the connector marked “REVERSE”

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. Monitor: 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. 7.)
2. 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. When connecting the cables check to make sure to match the directions of the arrows on the 13-pin connectors (male to female.)
3. For typical rear-view installation, connect the camera extension cable from the rear view camera to the harnesses connector marked REVERSE.
4. For multi-camera installations, be sure to mark each extension cable properly and connect to the appropriate harness connector marked C1 or C2. Bundle excess cable together using a cable tie or electrical tape.
5. 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.
6. Camera: Drill a 13mm (0.5in) 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.
7. Feed as much cable as possible into vehicle and clamp securely. This reduces the possibility of it being hooked or snagged.
8. Keep all cables away from HOT, ROTATING, and ELECTRICALLY NOISY components.
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 is loading and unloading. For other specialty vehicles, please check applicable code and regulations prior to installation.
10. Always consult your dealer when fitting an electrical or electronic equipment to a vehicle fitted with a CAN-bus or multiplex system.

IMPORTANT : For installations requiring multiple cameras, or for installations not requiring typical rear-view images, please refer to the wiring diagram (Fig.7) and the particular vehicle's electrical schematic for selection of proper power and trigger connection points.

FUNCTIONS AND OPERATION

MONITOR

1. POWER

When the ignition is switched on, the monitor will be in standby mode (steady red light, no image will be on the screen), waiting for trigger signal.

When a trigger wire is energized by 12v power (steady green light, such as backup lights turning on), the image captured by the selected camera will appear on the monitor.

2. Pressing the power switch will change the monitor status from standby to steady-on. Steady-on mode status will show camera view depending on user selection.

3. Volume +/-

Adjust Speaker Volume

These buttons are also used to adjust the values within selected setting of menu option.

4. 'MENU' Button (See p.8)

Press the MENU bottom to open on screen options.

Press Menu to cycle through choices and +/- to change your settings.

5. C1/C2

Switches from Camera 1 to Camera 2 and vice-versa

****NOTE:** The reverse camera (C2) has selectable back up grid when triggered.

HOW TO SET YOUR MONITOR TO YOUR REQUIREMENTS

**NOTE: On-screen menu commands should only be selected when monitor is in Steady-on (green light) mode.
Never change settings while operating vehicle.**

Press the MENU button **once** to set desired **brightness**.

Press +/- to **increase/reduce** the brightness.

Wait 3 seconds to exit setup mode.

Press the MENU button **twice** to set desired **contrast**.

Press +/- to **increase/reduce** the contrast.

Wait 3 seconds to exit setup mode.

Press the MENU button **three times** to set desired **color**.

Press +/- to **increase/reduce** the color.

Wait 3 seconds to exit setup mode.

Press the MENU button **four times** to set desired **tint**.

Press +/- to **increase/reduce** the tint.

Wait 3 seconds to exit setup mode.

Press the MENU button **five times** to set desired **language**.

Press +/- to select **English/ French/ Spanish**.

Wait 3 seconds to exit setup mode.

Press the MENU button **six times** to **reset**.

Press +/- to **restore factory defaults**.

Wait 3 seconds to exit setup mode.

Press the MENU button **seven times** to set **CAM1**.

Press +/- to select **Normal/Mirror** mode.

Wait 3 seconds to exit setup mode.

Press the MENU button **eight times** to set **CAM2**.

Press +/- to select **Normal/Mirror** mode.

Wait 3 seconds to exit setup mode.

Press the MENU button **nine times** to set **Vertical**.

Press +/- to **flip image**.

Wait 3 seconds to exit setup mode.

Press the MENU button **ten times** to set **Dimmer**.

Press +/- to select **Auto/ Day/ Night**.

Wait 3 seconds to exit setup mode.

Press the MENU button **eleven times** to set **Scale**.

Press +/- to select **On/Off**.

Wait 3 seconds to exit setup mode.

Press the MENU button **twelve times** to set **Scale Adjustment**.

Press - to change selected line.

Press + to adjust position of line.

Wait 3 seconds to exit setup mode.

SPECIFICATIONS

STSC150 CAMERA

PICK-UP DEVICE	CMOS
TV SYSTEM	NTSC
PICTURE ELEMENTS	626(H) x 586(V) NTSC
SENSING AREA	4.08mm x 3.1mm
IMAGE SIZE	1/4 inch
SYNCHRONIZATION	INTERNAL
HORIZONTAL RESOLUTION	420 TV LINES
REQUIRED ILLUMINATION	0.5 LUX MINIMUM/F1.2
SIGNAL TO NOISE RATIO	MINIMUM 48dB(AT AGC OFF)
POWER SUPPLY	12Vdc
POWER CONSUMPTION	1.8W(AT 12Vdc)
CURRENT CONSUMPTION	MAX. 120mA
LENS ANGLE	110°(D), 88°(H),66°(V)
OPERATION TEMPERATURE	-5°F to +158°F (-20°C to 70°C)
STORAGE TEMPERATURE	-40°F to +176°F (-40°C to 80°C)
WEIGHT	0.4Kg (0.9lbs)
DIMENSIONS (W x H x D)	3.7 x 2.7 x 3.4in (95 x 70 x 86mm)

STSM250 MONITOR

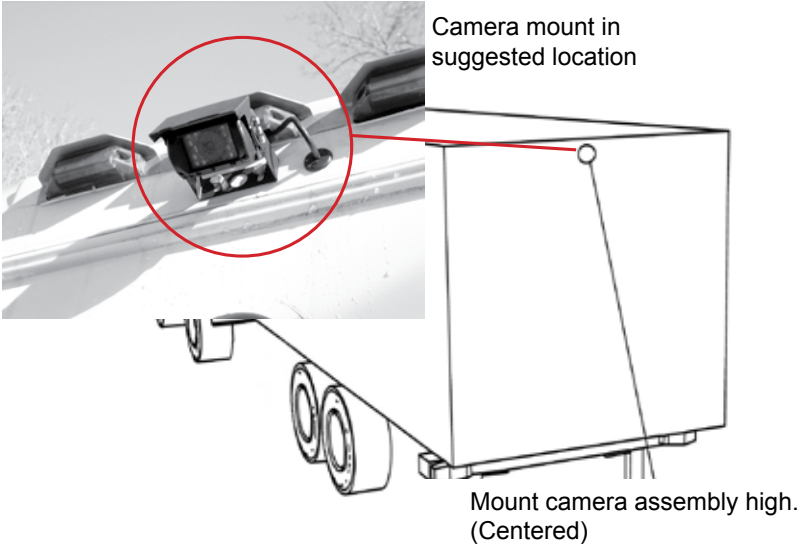
SCREEN 7.0 inch	COLOR TFT-LCD
ANGLE	70°(TOP), 50°(DOWN), 70°(LEFT/RIGHT)
POWER CONSUMPTION	6W/500mA MAXIMUM
POWER SOURCE	12-32Vdc
TV SYSTEM	NTSC
VIDEO INPUT/OUTPUT	COMPOSITE VIDEO SINGLE 1VP-P 75 OHM
RESOLUTION	800(H) x 480(V)
CONTRAST	500:1
BRIGHTNESS	300cd/m2
OPERATING TEMPERATURE	-5°F to +149°F (-20°C to 65°C)
STORAGE TEMPERATURE	-13°F to +158°F (-25°C to 70°C)
WEIGHT	0.4Kg (0.9lb)
OUTER DIMENSIONS (W x H x D)	7.2 x 5 x 1in (183 x 127 x 26mm)

DISCLAIMER

The use of the STSK7565 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

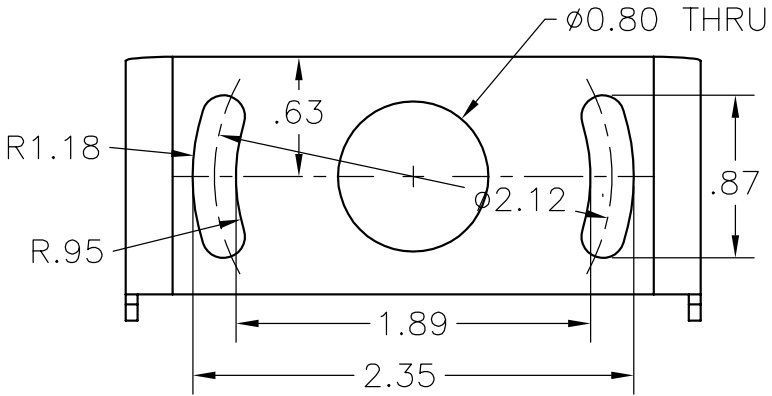
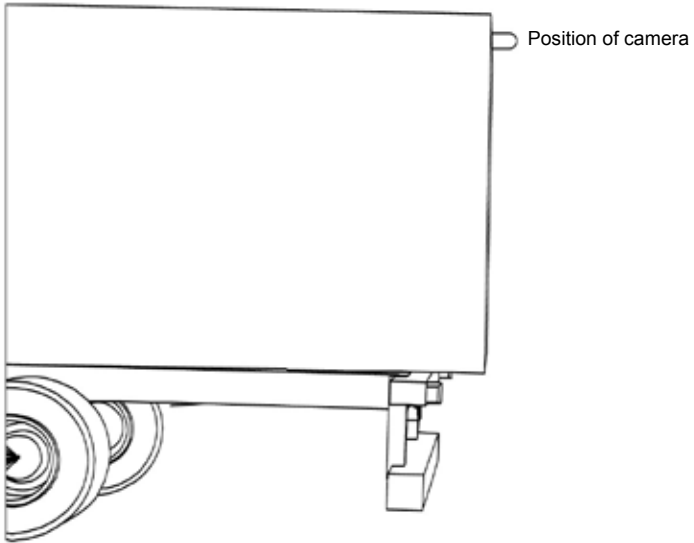
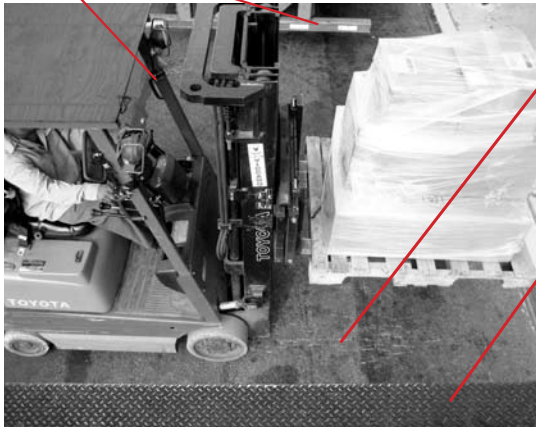


Fig. 2



Vehicles behind truck

Street



Rear Bumper

Typical monitor image of view from properly installed camera

Fig. 3

Optional wind deflector

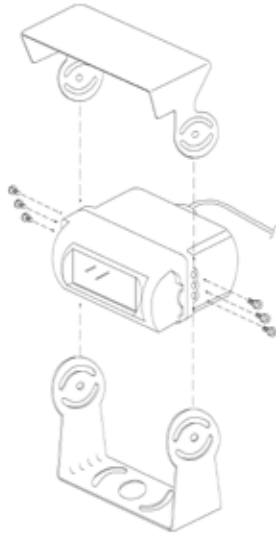


Fig. 4

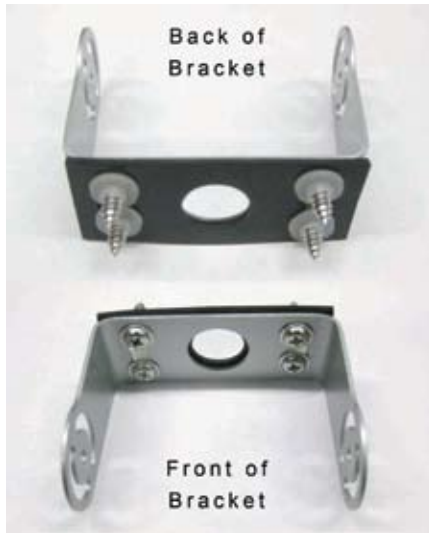
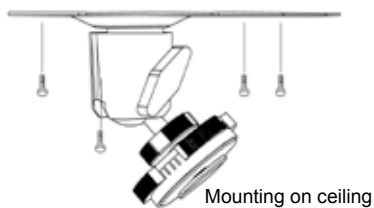


Fig. 5



Mounting on the dash, console etc.

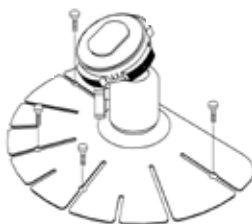
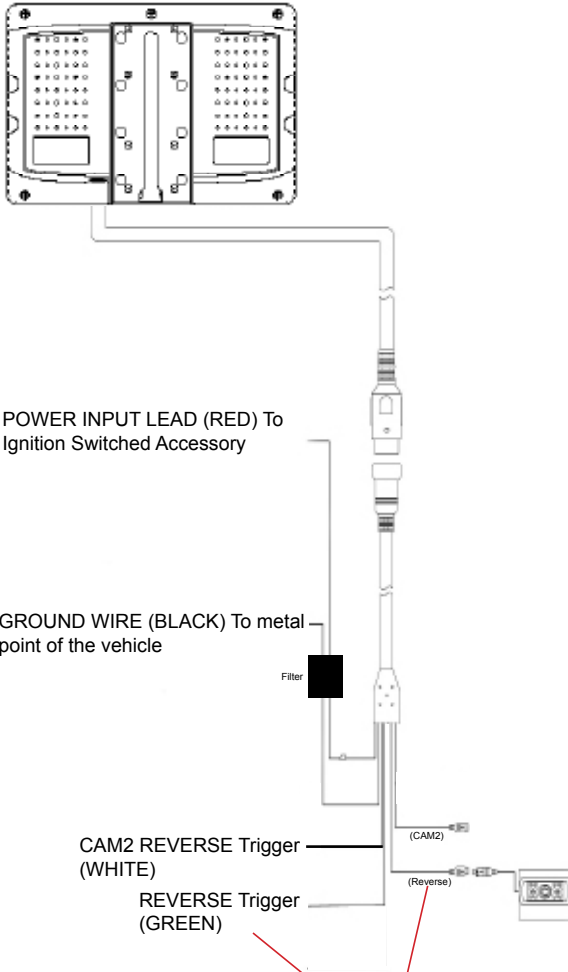


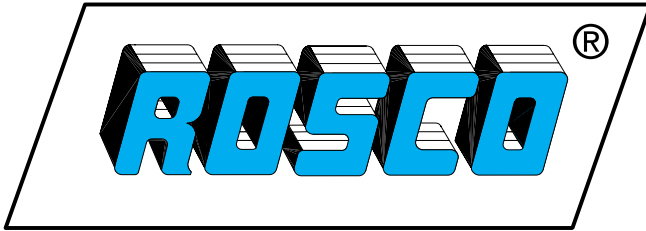
Fig. 6



Fig. 7



Note: For typical single camera 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 marked "REVERSE"



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ISO 9001:2000 FM 78496
QS 9000:March 1998 FM 78495
Printed in China

Lit. P/N: 04242012