# ROSCO®

## VISION SYSTEMS

# SAFE-T-SCOPE®

*BACKUP CAMERA SYSTEMS*



# STSM244
## 7" WINDSHIELD MIRROR MONITOR
## INSTALLATION/USER MANUAL

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# STSM244 SAFE-T-SCOPE® 7" WINDSHIELD MIRROR MONITOR

Rosco Vision Systems introduces a revolutionary new camera system for commercial vehicles. The new Safe-T-Scope® STSM244 utilizes a windshield-mounted  mirror with an integrated 7" LCD monitor to display the rear-view image when the vehicle shifts into reverse. Additional inputs for left and right cameras are also featured. The 7" wide-angle monitor allows the driver to see obstructions behind the vehicle, and the monitor brightness automatically adjusts between day and night modes. The STSM244 complies with FCC (USA) guidelines.

The STSM244 monitor has the capability for use with three cameras. Contact your Rosco dealer to discuss camera purchasing options.

**NOTE**

• Please read this manual carefully before using the product.
• This system is intended as an aid to safe driving operation.
• Drivers must always use extreme caution when operating a
  vehicle.
• Specifications subject to change without prior notice.
• Keep all cables AWAY from rotating and electrically noisy
  components.
• Make sure all cables are fastened properly to prevent wire
  chafing, kinks, cuts, etc.

⚠️ WARNING

• To prevent electrical shock, DO NOT
  OPEN MONITOR CASE.

• Avoid exposing monitor to water, rain,
  moisture etc.

• Do not disassemble the monitor.
  This voids the warranty.

# COMPONENT LIST AND DESCRIPTION - STSM244

STSM244MO          7" LCD Monitor

STSM244PHAR        Power harness - 13-pin connector, 3 channel, 4-pin inputs

STSDF1003          Mounting kit for STSM244 monitor

## MONITOR INSTALLATION

The STSM244 7" Windshield Mirror Monitor is designed to attach to the windshield button of the vehicle. An additional windshield button is included with the STSM244, if necessary. The standard mount STSDF1003 is compatible with many common vehicle models. Please contact your Rosco dealer for alternative mounting options.
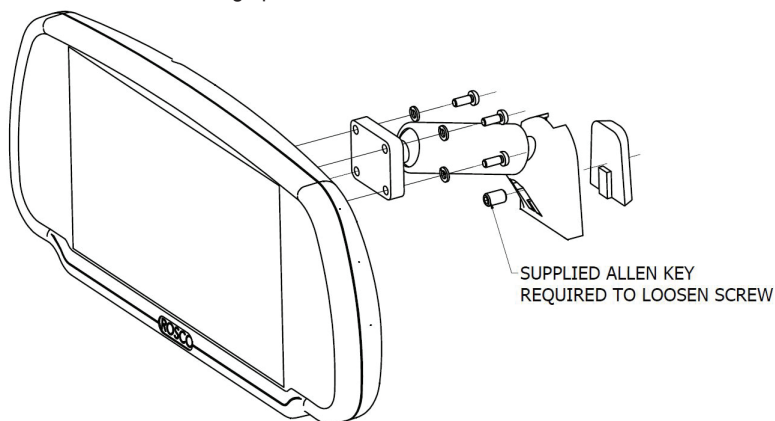
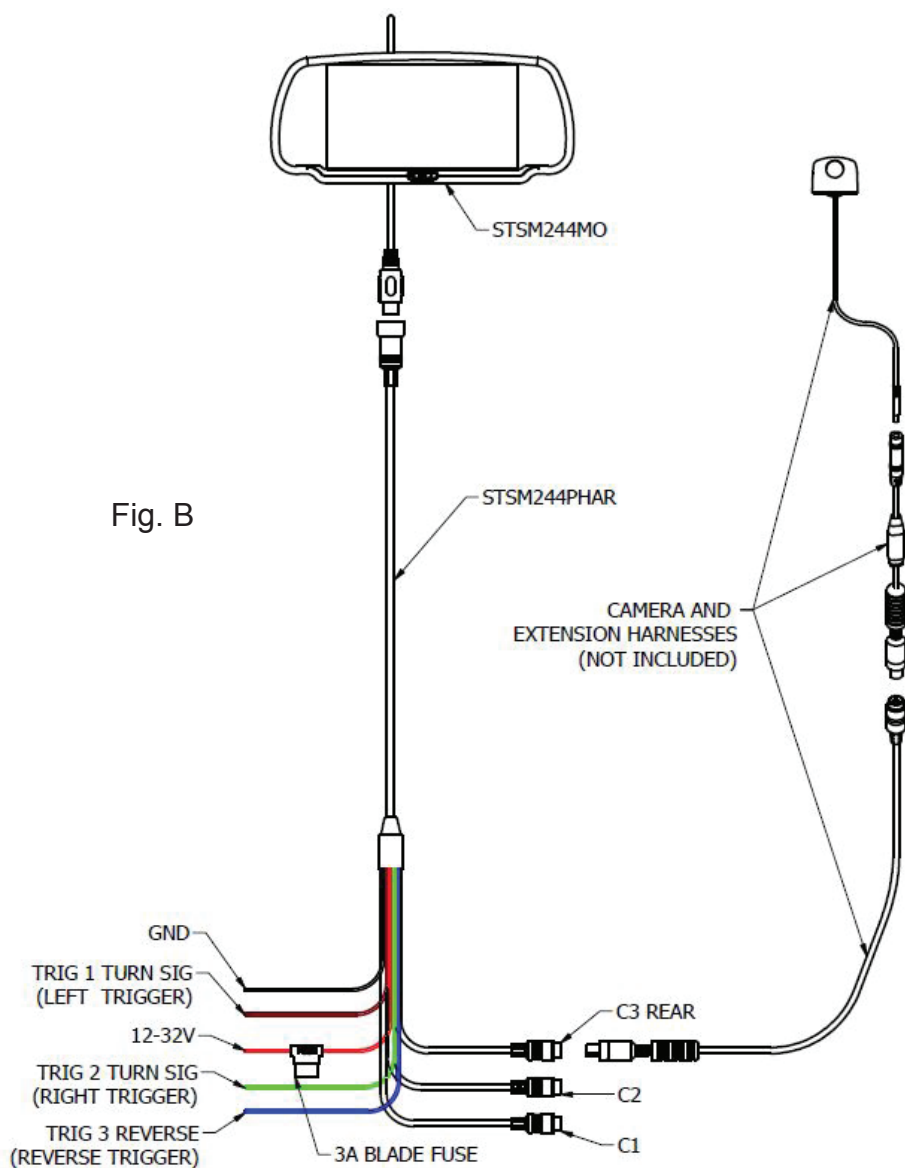SUPPLIED ALLEN KEY
REQUIRED TO LOOSEN SCREW

Fig. A

## WIRING INSTRUCTIONS

- Once the monitor is mounted, if necessary, drill a 1" diameter hole near the monitor through which to pass the monitor cable and 13-pin connector. Be sure to clear any obstacles before drilling holes.
- Connect the black wire of the power harness to chassis ground. Connect the red wire to an ignition switched accessory (ex. radio) power source and ensure that the power source can provide operating current above 2 A.
- Connect the blue trigger wire to the vehicle's reverse signal circuit. Do NOT connect trigger to any constant power source. Similarly, trigger wires can be connected to the vehicle's left & right turn signal circuit to get the view of the blind spot while turning left/right. See wiring diagram on the opposite page.
- Connect a rear camera to C3 Rear. Left and right cameras can also be connected. See wiring diagram on the opposite page.
- Connect the monitor's 13-pin connector to the power harness' 13-pin connector. Make sure the arrows on both connectors are aligned and pointing towards each other.
- All connections should be completely hidden from the vehicle operators. The harness should be tied/clamped to a rigid structure or rigid existing vehicle harness.
- Adhere to a 2 inch bend radius for all cables to prevent damage.

**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 vehicles are loading and unloading. For other specialty vehicles, please check applicable codes and regulations prior to installation.
- Always consult your dealer when adding any electrical or electronic equipment to a vehicle fitted with a CAN-bus multiplex system.

## WIRING DIAGRAM

Fig. B

STSM244MO

STSM244PHAR

CAMERA AND
EXTENSION HARNESSES
(NOT INCLUDED)

GND

TRIG 1 TURN SIG
(LEFT TRIGGER)

12-32V

TRIG 2 TURN SIG
(RIGHT TRIGGER)

TRIG 3 REVERSE
(REVERSE TRIGGER)

3A BLADE FUSE

C3 REAR

C2

C1

For camera options, contact your Rosco dealer.

# CAMERA INSTALLATION

### EXAMPLE CAMERA INSTALLATION

(Camera not included with monitor)

1. Select a high and centered location at the rear of the vehicle to mount the camera.

**IMPORTANT:** When selecting this location is is highly recommended that the image transmitted by the camera show the rear bumper and area behind the vehicle.

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.
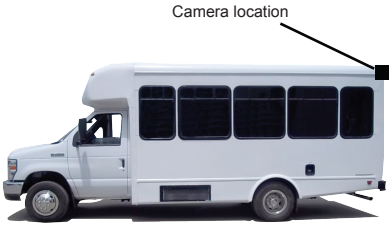
3. Once the location for the camera is chosen, drill the mounting hole to the inside of the vehicle using a 5/16 drill bit. Be sure to clear any obstacles before drilling the hole.

4. Attach the provided 3M double-sided tape to the back of the camera.

5. Insert camera wire through the newly drilled hole and mount securely in place.

6. To finalize the camera installation, hand-tighten the provided 5/16 nut to the back of the camera on the inside of the vehicle.
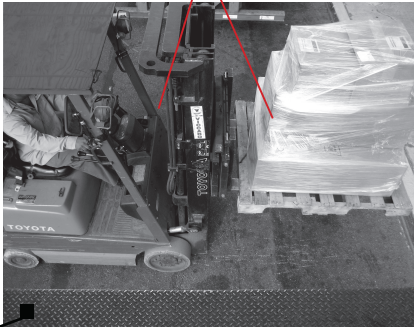
Fig. C

Camera location

Mount the camera high and centered on the rear of the vehicle.

Camera location

Obstructions behind truck

Vehicle bumper

Typical view of a properly installed camera.

# MONITOR FUNCTIONS AND OPERATIONS

**i** **IMPORTANT:** It is recommended that the menu buttons only be operated when the vehicle is in park or neutral.

**1. & 3. ^ / v   VOLUME/MENU SETTING ADJUST BUTTONS**
Decrease/Increase audio volume when no menu is open.
Use these buttons to sort through the menu tabs when no menu parameter is highlighted.
Decrease/increase the value for a particular menu parameter.

**2. MENU SETTING AND PAGE TOGGLE**
Brings up the monitor settings menu. Press the button again to scroll through the various settings on a menu page and to access the camera settings menu page (see following page).

**4. SELECT BUTTON**
Scroll through camera channels. If no camera is connected, the display will be blue.

**5. POWER ON/OFF**
Turns the LCD on or off. The default state of the LCD is OFF when power is connected. The monitor will display any triggered input regardless of LCD power status.
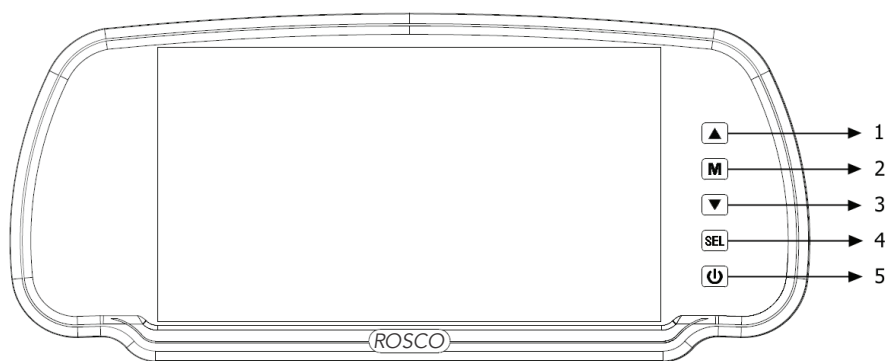
```
                                      ▲   →  1
                                      M   →  2
                                      ▼   →  3
                                     SEL  →  4
                                      ⏻   →  5

              ROSCO
```
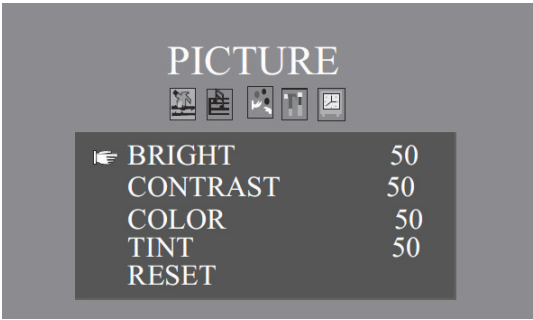
Fig. D

# MONITOR SETTINGS AND MENU

**i** NOTE: Press the **M** button to enter the menu and the **^** or **v** button to change pages.

**MENU SETTINGS PAGE 1: PICTURE**

Press the **M** button (see preceding page) to access this menu. Press **M** again to scroll through the lists of parameters. At an individual parameter (text will turn red when selected), press **^** or **v** to adjust the settings of each parameter.

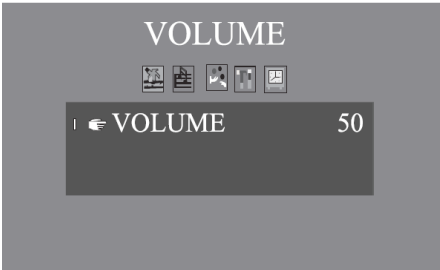| Parameter | Options |
|---|---|
| BRIGHT | 1~100. Default Auto, Daytime, and Nighttime = 50. |
| CONTRAST | 1~100. Default Auto and Daytime = 50, Nighttime = 45. |
| COLOR | 1~100. Default = 50. |
| VOLUME | 1~100. Default = 50. |
| TINT[1] | 1~100. Default = 50. |
| RESET | Resets all settings back to factory default |
| DAY MODE / NIGHT MODE denotes whether the monitor is applying daytime brightness or night-time brightness, depending on the light sensor or the AUTO DIM setting in the OPTION menu page. | |

1. TINT only appears when the monitor is receiving a signal from the camera.

## PICTURE

| BRIGHT | 50 |
|---|---|
| CONTRAST | 50 |
| COLOR | 50 |
| TINT | 50 |
| RESET | |

**MENU SETTINGS PAGE 2: VOLUME**

This menu allows the user to adjust the audio from the camera.

| Parameter | Options |
|---|---|
| VOLUME | 1~100. Default = 50. |

## VOLUME

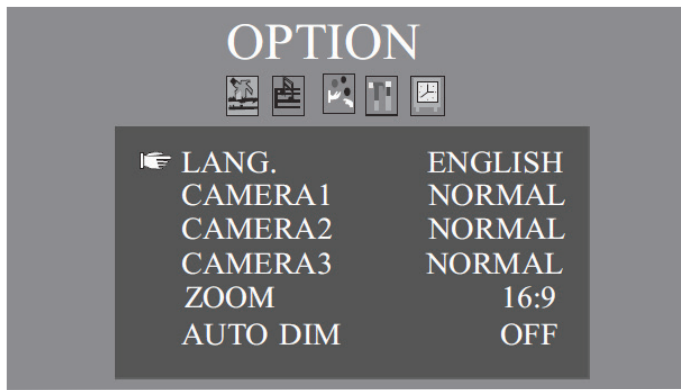| VOLUME | 50 |
|---|---|

# MONITOR SETTINGS AND MENU

> **i** NOTE: Press the **M** button to enter the menu and the **^** or **v** button to change pages.

**MENU SETTINGS PAGE 3: OPTION**

This menu allows the user to adjust the language, mirroring of the camera, aspect ratios, and the automatic dimming of the monitor.

| Parameter | Options |
|---|---|
| LANG | English, Dutch, French, Spanish, Portuguese, or Italian. Default = English. |
| CAM1 | Normal or Mirror. Default = Normal. |
| CAM2 | Normal or Mirror. Default = Normal. |
| CAM3 | Normal or Mirror. Default = Normal. |
| ZOOM | 16:9 or 4:3. Default = 16:9. |
| AUTO DIM[1] | Auto, Day, Night, or Off. Default = Auto. |
| This monitor is built for use as a backup system and the default setting Normal displays a conventional backup camera image. Setting MIRROR would un-mirror the image. It is suggested to leave default on NORMAL. | |

1. When altering picture in day/night mode, those values are saved for day/night mode until reset.
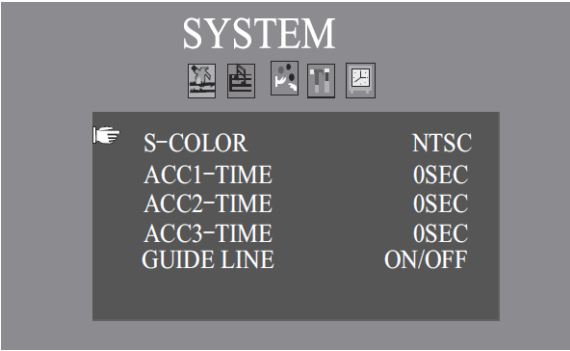
# MONITOR SETTINGS AND MENU

ℹ️ NOTE: Press the **M** button to enter the menu and the **^** or **v** button to change pages.

**MENU SETTINGS PAGE 4: SYSTEM**

This menu allows the user to alter color of image, set a shut-off delay, and add parking guidelines. ACC1, 2, and 3-Time delay shut-off of the monitor when power to the corresponding trigger is cut. GUIDE LINE adds parking guidelines to the monitor to give perspective on the objects behind the vehicle.

| Parameter | Options |
|---|---|
| S-COLOR[1] | Auto, NTSC, or PAL. Default = Auto. |
| ACC1, 2, and 3-TIME | 0~15 seconds. Default = 1 second. |
| GUIDE LINE[2] | On or Off. Default = Off. Only available when reverse trigger wire is activated. |
| ACC-TIME only works when the trigger is turned off, not the monitor. | |

1. Rosco cameras are formatted for NTSC. It is recommended to leave parameters as is.
2. The guideline parameter only appears on Camera 3 (Camera 3 - Rear, trigger 3) and if the monitor is reset, the guidelines are removed.



**MENU SETTINGS PAGE 5: PRESET**

This menu allows the user to adjust sleep mode. This parameter sets the duration of time the monitor stays on before turning off (with power still connected). The default for this setting is 0, meaning when the monitor is manually turned on it will remain on until it is turned off. It is recommended that this setting be changed to 10.

# STSM244 TECHNICAL SPECIFICATIONS

| PARAMETER | VALUE |
|---|---|
| Screen Size (Diagonal) | 7" |
| Dimensions (L x W x T) | 9.76" x 4.25" x 1.18" |
| TV System | NTSC |
| Video Inputs | 3 Inputs |
| Audio Inputs | 3, audio on all channels |
| Input Format | 4-pin |
| Trigger Inputs | 3 |
| Resolution | 800 x 480 pixels |
| Brightness | 700 cd/m$^2$ |
| Contrast | 450:1 |
| Voltage | DC 12V~32V |
| Maximum Current Consumption | 1,000mA |
| Viewing Angles Up/Down/Left/Right | 60° x 60° x 75° x 75° |
| Shock Rating | 2G |
| Vibration Rating | 6G |
| Operating Temperature | -4°F to 158°F (-20°C to 70°C) |
| Storage Temperature | -22°F to 176°F (-30°C to 80°C) |

# NOTES

# ROSCO
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