ROSCO®
VISION SYSTEMS

REARVIEW MIRROR/MONITOR COMBO BACKUP CAMERA SYSTEM

INSTALLATION/USER'S MANUAL

STSK4532 with Bumper Bullet Camera (P/N:STSC106)

STSK4533 with License Plate Camera (P/N:STSC112)

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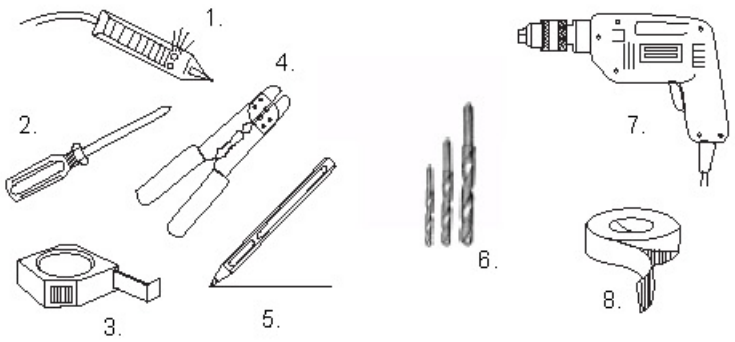
MOR-VISION™ REARVIEW MIRROR/MONITOR COMBO BACKUP CAMERA SYSTEM

Rosco Vision Systems introduces a revolutionary new backup camera system for small to medium vehicles. MOR-Vision™ utilizes an interior rearview mirror to display a 4.3" LCD monitor when the vehicle shifts into reverse. This monitor allows the driver to see behind the vehicle for added convenience and safety. The camera has an advanced CMOS lens sensor able to process excellent images under dark and light conditions. The camera has a 170° diagonal field of vision giving superb coverage behind the vehicle and complies with the latest NHTSA 49 CFR Parts 571 and 585 (RIN 2127-AK43).

General Technical Specifications:

Power Supply:	12VDC
Power Consumption:	1 Watt
Current Draw:	<2000 mA
Video Input:	composite video; 1 Vp-p@75 impedance
Operating Temp:	-5°F to 150°F(-20°C to 65°C)
Monitor Dimensions:	11" W x 3" H x 1.5" D



1. Wire Tester
2. Phillips Screwdriver
3. Tape Measure
4. Wire Stripper
5. Pencil
6. 31 mm /1.25" hole saw /step drill bit, 5/16 drill bit
7. Drill
8. Tape

COMPONENT LIST - STSK4532

QTY	P/N	DESCRIPTION
1	STSC106	Wide angle color bullet camera
2	STSM230	Back up camera mirror/monitor includes: P/N STSM231MO 4.3" clip on color mirror/monitor P/N STSK4530/PHAR monitor power harness
3	STSH343	Backup camera extension harness, 33FT
4	STSH373	4 - Pin to RCA adapter
5	CON1048	Male - Male RCA adapter
6	STSH374	Power adapter for STSH373

Notes:
- Please read this manual carefully before using the product.
- This system is intended as an aid to safe reverse operation. Drivers must always use extreme caution when operating a vehicle.
- Specifications subject to change without prior notice.

Warning:
- To prevent electrical shock, **DO NOT OPEN MONITOR CASE**.
- Avoid exposing monitor to water, rain, moisture etc.
- Do not disassemble the camera. This voids the warranty. Disassembling the camera will compromise the waterproof seal.

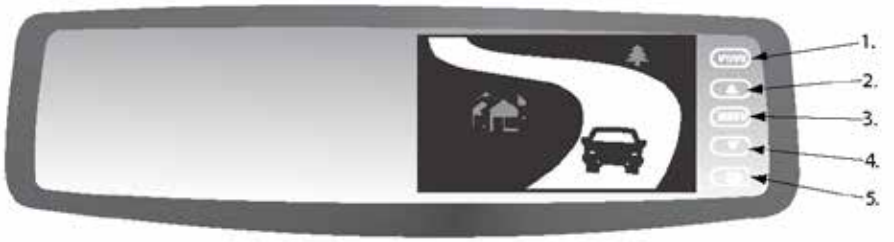
COMPONENT LIST - STSK4533

QTY	P/N	DESCRIPTION
1	STSC112	License plate camera
2	STSM230	Back up camera mirror/monitor includes: P/N STSM231MO 4.3" clip on color mirror/monitor P/N STSK4530/PHAR monitor power harness
3	STSH343	Backup camera extension harness, 33FT
4	STSH373	4 - Pin to RCA adapter
5	CON1048	Male - Male RCA adapter
6	STSH374	Power adapter for STSH373

Notes:
- Please read this manual carefully before using the product.
- This system is intended as an aid to safe reverse operation. Drivers must always use extreme caution when operating a vehicle.
- Specifications subject to change without prior notice.

Warning:
- To prevent electrical shock, **DO NOT OPEN MONITOR CASE**.
- Avoid exposing monitor to water, rain, moisture etc.
- Do not disassemble the camera. This voids the warranty. Disassembling the camera will compromise the waterproof seal.

HOW TO OPERATE DISPLAY



Display Operation

1. V1/V2 - Switches video feed from channel 1 to channel 2.
2. "Up" - Menu selection control.
3. Menu - Switches to setup menu.
4. "Down" - Menu selection control.
5. Power - Switches monitor from Standby to Steady on.

How To Set Your Monitor
On-screen menu commands may be selected pressing the MENU button while the mirror/monitor is on.

Brightness
Contrast
Saturation
Hue
Sharpness
4:3/16:9
Reset

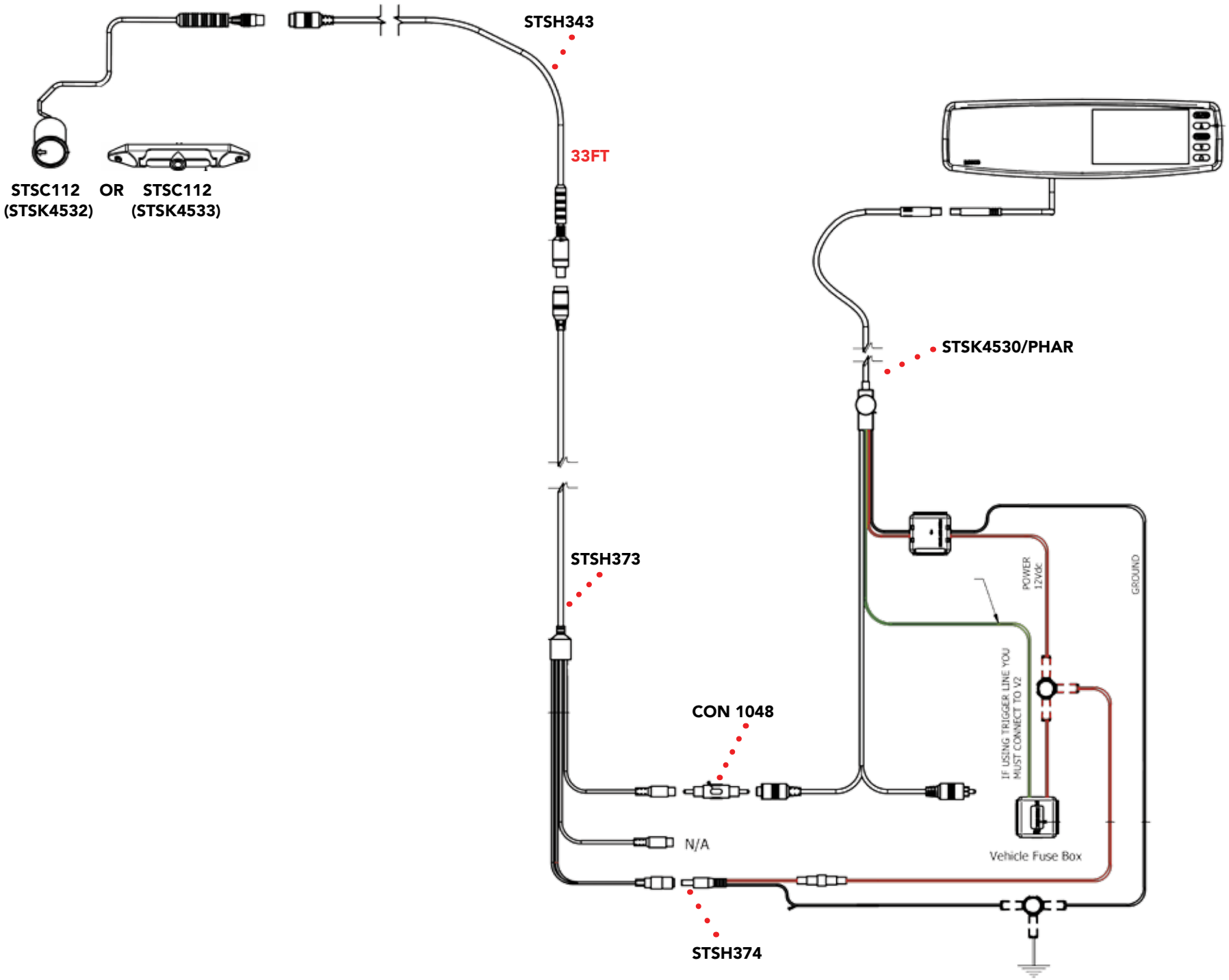
IMPORTANT: The rearview mirror/monitor is not intended to be used for prolonged periods of time. Therefore the monitor stays off until triggered by the reverse circuit.

MONITOR SPECIFICATIONS

STSM230

Screen Size	4.3" TFT LCD
Max Brightness	1,000/m² (before glass); 500cd/m² (after glass)
Contrast Ratio	350:1
Resolution	480 X 272
Input Voltage Range	8 -18V
Maximum Current Draw	260 ma
Video Input	Composite video
Display Format	NTSC/PAL (Auto Switching)
Operating Temperature °F (°C)	-4°F to 149°F (20°C to + 65°C)
Storage Temperature °F (°C)	-40°F to 176°F (20°C to + 65°C)
Shock and Vibration Rating	1G

WIRING DIAGRAM



CAMERA SPECIFICATIONS

STSC106

Image Device	1/4" CCD
Pixels	512 x 492
TV Lines	420
InfraRed LED's	6 High-Output
Night Vision Range	30 FT
Video Output	1.0 Vp-p, 75 Ohm
Dust\Water Rating	IP69K
Field of View	170°
Operating Temperature °F (°C)	-4°F to 176°F (-20°C to +70°C)
Storage Temperature °F (°C)	-40°F to 176°F (-40°C to +80°C)
Dimensions W x H x D	1.3 x 1.3 x 1.7 (35mm x 35mm x 44mm)

STSC112

Image Device	1/3" CCD
Pixels	512 X 582 Pixels / 512 x 492 Pixels
TV Lines	420 Lines
InfraRed LED's	4 High-Output
Night Vision Range	3-5m
Video Output	1.0 Vp-p, 75 Ohm
Dust\Water Rating	IP69K
Field of View	150°
Operating Temperature °F (°C)	68°F to 158°F (20°C to +70°C)
Storage Temperature °F (°C)	40°F to 176°F (-40°C to +80°C)
Dimensions W x H x D	7.50 x .26 x .57 (190.5mm x 6.5mm x 14.5mm

REARVIEW MIRROR INSTALLATION

1. Attach windshield mounting bracket to the back of STSM230 mirror/monitor. Be certain that the monitor is in the upright position when attaching the mounting bracket. (Figure 1)

2. Remove old rearview mirror from factory mirror-mount tab.

3. Mount rearview mirror/monitor securely to mounting tab by tightening screw. (Figure 2)

4. Route the 8-pin connector end of the power harness to the location of mirror monitor (preferably through the headliner and the vehicles A or B pillars).

5. Connect the power harness with the mating 8-pin receptacle end coming out of the mirror monitor.

IMPORTANT: Please be certain to match both guiding lines on each connector for a proper connection.

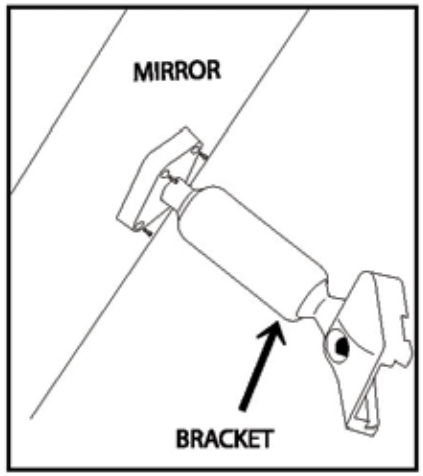


Figure. 1

CAMERA INSTALLATION STSC106

Figure 3

1. Find a flat centered location on your bumper. **(Figures 3)**

2. Make sure clearance behind camera location is unobstructed.

3. Using a 1.25" (31mm) hole saw (not included), carefully drill a hole in the surface. (See Figure 4)

Figure 4

4. Remove retaining rings from camera.

5. Place harness through hole until camera is flush. Do not run the cable over sharp edges or corners. Do not kink the cable. Keep the cable away from hot and rotating parts. **(See Figure 5)**

Figure 5

6. Replace retaining rings onto body of camera. **DO NOT TIGHTEN.**

7. Connect camera to extension harness. **(See Figure 6)**

Figure 6

8. Verify Camera Orientation by viewing image on monitor.

9. Tighten rings behind camera until completely snug.

10. Fasten all cable runs, and secure all excess cable.

CAMERA INSTALLATION STSC112

Figure 7

1. Locate rear license plate and remove screws. **(See Figure 7)**

2. Find suitable location to drill connector hole above/behind license plate.

3. Once the location is chosen, drill pilot hole to the inside of the vehicle using a 5/16 drill bit. Be sure to clear any obstacles before drilling hole. **(See Figure 8)** Push connector through hole.

Figure 8

5. Mount camera on license plate and use provided screws to mount license plate back into position. **(See Figure 9)**

6. Use supplied grommet to plug up drilled hole or use sealant to close and secure hole.

7. Connect camera to extension harness previously wired.

8. You have the option to change the camera angle. Two set screws located in the front of the camera may be loosened to adjust the camera angle. After the camera angle is adjusted just re-tighten the screws.

Figure 9

TESTING

How to Test:

1. Apply the parking brakes.
2. Turn Ignition on.
3. Shift into reverse gear.
4. Image should appear on the monitor.

Trouble Shooting

Problem	Solution
No video signal appears while reversing the vehicle.	Check all camera connections (ex. Power, Ground, AV1, AV2) Press AV1/AV2 button to change video inputs Check the rearview camera wiring and connection.
Video image is not sharp.	Clean the lens of the camera

Maintenance:

Always keep camera clear from dirt, snow, and mud. Clean camera with a soft towel and low pressure water.

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