

CYL-V

SINGLE CAMERA

AUTOMOTIVE HD VIDEO RECORDER



USER'S MANUAL

DV301 & DV302

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CYL-V

Rosco's CYL-V allows recording of exterior video and vehicle travel data. Mounted on the windshield, CYL-V captures a wide-angle view of the road as seen by the driver. The Recorder is capable of capturing audio inside the vehicle, although this feature may be disabled through software configuration.

- Photo Capture
- Driver Event Button
- Date & Time Stamp
- Includes a Micro SD card
- Full HD Video Recording
- Security Lock with Two Keys
- 3 Megapixel CMOS Camera
- Continuous Recording
- Event Logging
- Audio Recording
- Parking Surveillance
- G-force Sensor
- Options (purchased separately)
 - GPS Mapping
 - Smartphone App (thru Wi-Fi)

Data is recorded in a continuous loop, with oldest video erased by more recent video. The compact system can hold hours of data before any over-writing takes place. CYL-V contains a G-force sensor, which may be configured to create a digital "event". Events are specific driving files containing instances when the vehicle exceeds certain G-force values, such as those exceeded during harsh turns, panic braking, and rapid acceleration. These event files are marked and placed in a special folder on the SD card. Additionally, the driver has the ability to mark a standard driving file as a "Driver Event", and have that file placed into the special event folder as well. Some CYL-V units are also supplied with an optional internal GPS antenna which enables capture of vehicle location, speed, and direction. In those units, files containing "Speed" events will also be placed in the events folder. All the data is stored in proprietary files located on the removable Micro SD card which may ONLY be reviewed by using Rosco's proprietary CYL-V Player software on any Windows PC. The software is provided at no additional cost to the end-user, and there are no follow-up fees for use or updating of the CYL-V Player by authorized users. Critical videos may be converted to standard media-player formats for legal or administrative action.

Security: CYL-V is a commercial grade product designed to be used in a variety of applications. The Security Lock discourages unauthorized removal of the SD card. Installation via hard-wire connection to a vehicle's electrical system discourages tampering and provides parking mode recording capability up to 3 hours after the ignition has been shut off. Rosco's CYL-V Recorder is designed to provide error-free recording. The state-of-the-art hardware components and software programs are specifically designed for recording and storage of High Definition video. Rosco recommends the use of high-quality micro SD cards, and we will periodically issue a list of recommended storage media. CYL-V is a Full HD Digital Drive Recorder with the most advanced technology.

SAFETY INSTRUCTIONS

To ensure proper operation please read this User Manual before installation and operation. Failure to follow this safety notice may cause a malfunction and will void the warranty.



DO NOT:

- Clean recorder with any liquids
- Insert foreign materials into the CYL-V device
- Attempt to disassemble, repair or modify the product
- Use cables or Micro SD cards that are not provided by or recommended by Rosco.

IMPORTANT

DO NOT REMOVE THE MICRO SD CARD WHILE CYL-V RECORDER IS POWERED, Wait until all LED's are off before moving the Micro SD card.

PACKAGE CONTENTS

RECORDER UNIT



CYL-V Recorder Unit

MOUNTING BRACKET & CABLE



Windshield Mounting Bracket with Power Cable & Power Module

ACCESSORIES



USB Data Cable



Micro SD Card with PC Adaptor



Keys



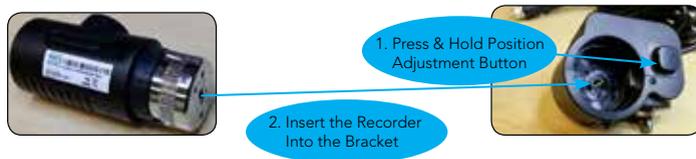
Set-Screws

PARTS IDENTIFICATION



#	DESCRIPTION	#	DESCRIPTION
1.	Driver Event Button	7.	Status LED'S (PWR, GPS, Wi-Fi)
2.	Photo Button	8.	Mounting Bracket
3.	Micro SD Card Slot	9.	Mounting Bracket With Cable
4.	Reset Button	10.	Position Adjustment Button
5.	Mini USB Power Slot	11.	Power Cable Module
6.	Microphone	12.	Mounting Surface With Tape

IMPORTANT: While pressing the position adjustment button, insert the recorder into the bracket, aligning the mini USB power source in the bracket with the mini USB power slot in the recorder



WIRING

Electrical systems vary from vehicle to vehicle. Please refer to your vehicle's manual for details prior to installing a CYL-V recorder.

This is the preferred installation of CYL-V instruction for commercial and other fleet vehicles. The CYL-V Power Cable includes important voltage regulation and safety circuits which are necessary for proper operation of CYL-V Recorder. NEVER use power cables other than those supplied with CYL-V. Make sure ignition is off during installation.



1. Prepare all the parts necessary for installation.

2. Find the location of the fuse box in the vehicle. Identify the fuses for connection of the RED POWER wire and the YELLOW IGNITION. Identify appropriate location for installation of the Power Module in the vehicle.



3. After determining that Power Module location is appropriate, make the following connections:

- Connect the BLACK WIRE (GROUND -) to chassis ground.
- Connect the RED WIRE (POWER +) to a constant - powered. Source which will remain live after the ignition is turned OFF.
- Connect the YELLOW wire (IGNITION) to an ACC power source. (NOTE: it is very important to select a connection point which has zero voltage when the vehicle ignition turns to OFF. See further details on next page.)



4. Identify approximate CYL-V Recorder location on windshield. Confirm sufficient cable length available to reach from windshield location to the under-dash connection to Power Module. Remove the A-Pillar cover and route the cable as needed.



5. Connect the Power Module to Power Cable.

EXAMPLE: Ground Wire connected to the vehicle chassis ground

WIRING

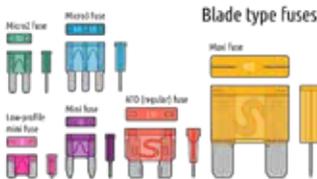
IMPORTANT NOTE FOR INSTALLER

The CYL-V Power Module contains three wires **red, black, and yellow**. The yellow wire is intended to trigger Parking Surveillance by sensing the moment when the driver shuts the ignition. Parking Surveillance provides recording at lower frame rate for a pre-selected time period. Parking Surveillance options are noted in the Configuration menu. In situations where a manager chooses not to utilize this option, it is still recommended to wire the system properly, and use the Configuration choices to disable the option within the software.

Installers should make certain that the yellow wire is secured to the vehicle fuse block at a terminal which will be at a zero-voltage state when the vehicle ignition key is OFF. A typical location on a fuse block would be the ACC port for cigarette-lighter power. Zero-voltage state should be verified using a voltmeter prior to installation.

CYL-V's power module includes an internal circuit to protect against high current or voltage spikes. We do, however, recommend that a professional installer provide an Add-A-Circuit Fuse Holder, or similar type of Fuse Holder, with a 2A fuse for additional protection. Please refer to the vehicle manual and fuse block schematic to identify appropriate fuse holders and best locations for CYL-V power/ignition/ground wire connection points.

Add-A-Circuit Fuse Holder Assembly & Parts (Example Photos)



Two Add-A-Fuse Holders Assembled on CYL-V Power and Ignition Wires



ATM Add-A-Fuse- Kit



ATC Fuse Tap



Fuse Tap Kit for ATO Fuses

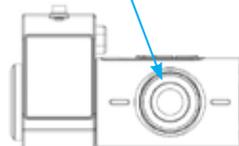


ATC Mini Fuse Tap

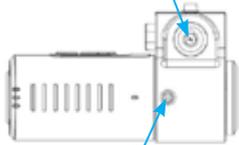
MOUNTING



Adjust Camera Lens for Best Viewing Angle



Press & Lock the Push Lock



Tighten Set Screw

- Determine CYL-V Recorder location on windshield. **Typically** the Recorder is mounted behind and slightly below the mirror. Different vehicle/windshield \ combinations allow many other acceptable mounting locations (see alternate CYL-V location at left). The goal is always to minimize forward-viewing obstruction while enabling optimal recorded images. CYL-V Recorder should be level both vertically and horizontally.
- Clean the windshield glass with commercial glass cleaner. Make sure that the recorder key lock is in the unlocked position. Peel off the adhesive pad, mount the Bracket/Recorder assembly onto the windshield at the selected location and then carefully press the assembly onto the windshield, holding it in place with pressure for one minute.
- While pressing and holding the position adjustment button, rotate the recorder within the bracket to make sure that the camera lens is facing straight.
 - Turn the vehicle ignition on, Red LED will come on, indicating Power to recorder. After a moment, same LED will turn green, indicating active recording.
 - Allow Recorder to run for five minutes. Turn the vehicle ignition off and confirm the LED is off, indicating that no power is going to the Recorder. Note: Recorder is preconfigured at the factory without parking mode.
- Remove camera from bracket and connect the USB cable to PC or laptop, review video to confirm camera views.
- If you configured your CYL-V to activate parking surveillance mode:
 - After ignition is turned off, a Green LED will stay on to indicate parking surveillance is on.
 - Green LED will shut off when parking surveillance mode times out.
- Upon verification of camera position and angle, return the Recorder to vehicle, reinsert the Recorder into the Mounting Bracket. Lock the Recorder into place, and tighten the Lock Screw. This will maintain the camera angle for later Recorder removals and re-mounting.

IMPORTANT: Installation should only be done when windshield is at room temperature. Allow 2-4 hours for adhesive bond to cure properly before operating vehicle.

OPERATION

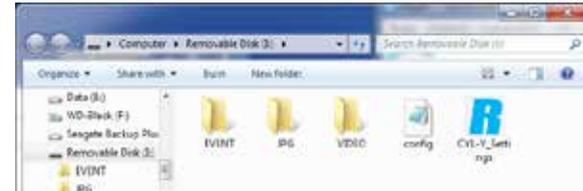
- With a new (blank or pre-configured) or freshly configured Micro SD Card inserted into the Recorder, turn vehicle ignition on. The "PWR" LED will be red and three beeps will be heard, indicating the Recorder is receiving power and initializing. After a few seconds, the "PWR" LED will change from red to green, indicating the recorder is functioning normally and recording.
- For GPS - equipped units, note that vehicle position information may not be immediately available, as it can take several seconds or longer (up to five minutes) for the internal GPS antenna to acquire satellite signals and begin logging vehicle location data. Blue "GPS" LED will light when satellite acquisition is successful.
- If you hear continuous beeping after ignition on, there may be a failure of the Micro SD card or a device malfunction. Shut off the ignition, remove the Recorder from the Mounting Bracket, and remove the Micro SD card. Using a PC, check to see if the Micro SD card can be properly read, and its files viewed using the CYL-V Player program.
- If the card cannot be read, or accessed by the PC, then the card is defective and it should be replaced. If so, insert a new Micro SD card into the Recorder and start driving. If beeping continues, there is possibly a hardware failure, refer to Troubleshooting in this manual. If beeping occurs while driving, simply press the red Driver Event Button to silence, but it is important to investigate the reason for beeping as soon as the vehicle returns to base.
- Parking Mode – when parking mode is off, Recorder will shut off a few seconds after ignition is off. When parking mode is on, Recorder will continue recording at a significantly reduced frame rate, and will shut off totally at the end of the pre-configured parking mode time period.
- When Recorder power is off, all LEDs will be dark, and it is safe to remove the Micro SD card.
- Video files may be played by either of the following two methods:
 - Remove the SD card and insert the card into a PC or laptop
 - Connect the data cable from the Recorder to a PC or laptop

Alarms & Alerts:

- Power ON/OFF: three beeps
- Photo Snapshot: single beep
- GPS position on: single beep
- Event Recording (Panic, G Sensor, over speed): two beeps
- Time setting via configuration tool: two beeps
- SD card error or no Card: beep sound continues and it can be disabled by pressing Driver Event Button for 5 seconds and shut-down the device safely take out the SD card and check the card.

CYL-V CONFIGURATION

Computer Preparation – insert Micro SD card into a Windows7 or Windows8 PC or laptop, open the drive containing the Micro SD card. You will see the following folders.



Recommended: Create a folder on PC, copy & paste the above three CYL-V files from Micro SD Card into the new folder for future use.



CYL-V Recorder is supplied with a factory default configuration, see below for specific default settings. If the factory default settings are acceptable, there is no need to do anything further. Simply insert the Micro SD card into the Recorder, and begin driving.

If configuration settings need to be changed, insert Micro SD card into a PC or laptop, and click on the config. exe file in the SD card.

The "CYL-V Configuration" screen will pop-up. Select and modify settings as desired.

IMPORTANT: Changes in Configuration settings will only be accepted after clicking on the "OK (Save)" button.

DESCRIPTION OF CONFIGURATION OPTIONS

Video Resolution	720p(30fps) 720p (60fps) 1080p (30fps)	Depending on the size of memory card and video quality \ preference.Default setting is 720p at 30 frames per second
Recording Time per Minute	1 minute	The video recording time is fixed for one minute per file
Recording Mode	Normal	Continuous recording from ignition-on to ignition-off at full frame rate. If events occur during driving, an event file will be created and placed in an Event folder. Non-event normal files will be placed in a Normal folder. When Micro SD card is full, oldest files will be replaced by newest files.
	Event Only	This option only saves files created when pre-configured speed,G-sensor, or Driver Button events. When Micro SD card is full, oldest Event files will be replaced by newest Event files.
Parking Mode	OFF 1 HOUR 2 HOUR 3 HOUR	When parking mode is configured, and when ignition is OFF, CYL-V will record at a lower frame rate of 1fps. When parking mode is set to OFF, CYL-V will stop recording as soon as the ignition is OFF. Green LED will remain lit while Parking Mode is active

G SENSOR LEVEL	SETS THE X, Y AND Z SENSITIVITY (FROM 0.1G UP TO 4.0G)		
Audio Recording	Turn audio ON or OFF		
Time Zone Setting	Sets the correct time zone and daylight savings time where applicable		
DST Mode	Auto manual		
DST Start/stop	Set up dates to start and stop DST time		
Date Stamp	Stamp dates in the video file recording		
Vehicle Number Stamp	Stamp vehicle number in the video file recording		
Speed Stamp	Stamp speed in the video file recording		
Speed Limit Event	Turn on/off the speed limit. When on, do not leave blank, enter a value		
Vehicle Number Set	Enter desired vehicle number (up to 9 digits: 0-9, A-Z, Space)		
Wi-Fi SSID	Set up SSID only for DV303, DV304 models with Wi-Fi option		
Wi-Fi Password	Set up Wi-Fi password		
Firmware Version	Indicate the current firmware version installed in the CYL-V recorder		

VIDEO RESOLUTION OPTIONS		64GB	32GB	16GB
		(OPTIONAL BY USER)	(OPTIONAL BY USER)	(COMES WITH UNIT)
1080p (30fps)	Normal - Recording Time	9.9	5.0	2.5
	Event Only - # of Events	416	208	103
720p (60fps)	Normal - Recording Time	11.8	5.9	2.9
	Event Only - # of Events	495	248	123
720p (30fps)	Normal - Recording Time	13.9	7.0	3.5
	Event Only - # of Events	586	293	145

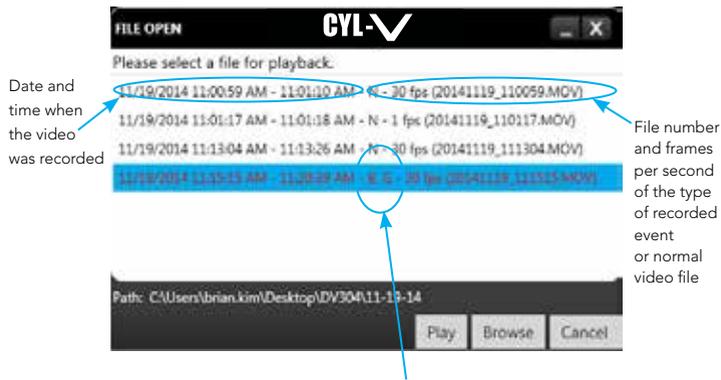
CYL-V PLAYER



NAME	DESCRIPTION
A	Video Playback Screen
B	Playback Point
C	Record Time
D	Google Map*
E	G-force Graph
F	Previous File
G	Previous Frame
H	Next Frame
I	Next File
J	Playback Controls
K	Volume Control
L	Mute
M	Open Files
N	Cyl-V Settings
O	Export Files
P	Pop-up Map Screen
Q	Full Screen View
R	Brightness Control

*** For CYL-V Recorders supplied with GPS option.**

1. To playback video, click the icon () in the player screen and if no .mov files appear, click "Browse" button in the below pop-up screen.
2. Select "Computer" then "Removable Disk" where the recorded data is stored and click "OK" button to see a list of video files recorded in the SD card folder
3. Select and double click a ".MOV" file or click "Play" button to playback video



Displays the type of recorded events
(G: G-SENSOR, B: Driver Button Event,
S: Over Speed Event, N: Normal Video)

EVENT TYPE	DESCRIPTION
Speed Event	S: Indicates when the vehicle exceeds pre-configured speed limit
Button Event	B: Indicates activation of Driver Event Button
G-Sensor Event	G: Indicates when vehicle experienced sudden acceleration, deceleration or rapid side-to-side movement
Normal	N: Indicates when a normal, non-event file is recorded
Parking Event	P: Indicates Parking Mode Events when vehicle is parked

While reviewing the contents of a Micro SD card using a PC or laptop, it is also possible to change configuration settings from within the Player program. Simply click on the System Setup configuration icon () located at the lower right corner of the player screen. The following window will then appear, within which all configuration changes may be entered.



NOTE: Click "SAVE" button when you complete the change.

For CYL-V recorders equipped with the GPS option, map coordinates are stored and synchronized with Google Maps. To use this function, the PC must have an internet connection. The G-Force sensor detects changes in directional forces affecting the vehicle. The CYL-V Player displays G-force data in a graphical format, and creates Events when those forces exceed supervisor-set values.

VEHICLE	X, Y, Z AXIS
School Bus	0.8, 0.8, 1.4
Shuttle Bus	0.8, 0.8, 1.4
Coach Bus	0.8, 0.8, 1.4
Truck	1.4, 1.4, 2.2
Van	0.8, 0.8, 1.0
Sedan	0.8, 0.8, 1.0

KEY

- X-AXIS:** LEFT/RIGHT MOTION
- Y-AXIS:** FRONT/BACK MOTION
- Z-AXIS:** UP/DOWN MOTION

Note: X, Y, Z axes are 0 when vehicle is stationary. Using the Player configuration screen, adjust the G-sensor values for each X, Y, Z axis. This is a trial-and-error effort, since different types of vehicles will react differently under various road conditions. The values represent a range (+ or -) around 0 gravity. Under normal driving conditions for automobile, settings of X= 0.8g, Y= 0.8g, Z= 1.0g are recommended as being sufficient to identify driver-behavior issues while being high enough to avoid most unnecessary Event-marking caused by potholes or normal braking. Please see the above chart for suggested settings appropriate for a variety of commercial vehicles.

MICRO SD CARD

- Your CYL-V recorder is provided with a Micro SD card.
- The Micro SD card is preconfigured with factory default settings (see pages 9 -10)
- If desired, configuration settings may be changed to accommodate a fleets specific requirements.
- Do Not Use Micro SD Card for any other purpose. Using the Micro SD Card for any other purpose will cause damage or losing important video files in the card.**

At least once per year, format the Micro SD Card using PC program to prevent Micro SD Card errors from occurring over a long period of time. Note that upon formatting the Micro SD Card, all existing operating and data files will be deleted. Be sure to perform a backup of any important video files and configuration prior to reformatting. After formatting, you may insert the Micro SD card into CYL-V. The Recorder will automatically write the current configuration file to the SD card. The "CYL-V Player" program does not automatically re-install onto the Micro SD Card. If desired, it may be added manually by copying and pasting from another location. A new Data folders will be created on the reformatted Micro SD Card and new Data files will be created as driving resumes.

Consult Rosco or your authorized Reseller for Micro SD Card compatibility. Not all Micro SD Cards work with CYL-V unit. The following is a list of approved Micro SD Cards which may be purchased from Rosco. This list may be periodically updated without notice.

MEMORY SIZE	
16GB	Sandisk Ultra SDHC Class 10, Transcend SDHC Class 10
32GB	Sandisk Ultra SDHC Class 10, Transcend SDHC Class 10
64GB	Sandisk Ultra SDHC Class 10, Transcend SDHC Class 10

TROUBLESHOOTING

	PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
Power	LED display is off No chime heard upon starting vehicle.	No power to recorder	Check the power cable connections
LED Display	LED lights are off but beep sounds heard upon starting vehicle.	System is in unknown state or malfunction	Remove CYL-V Recorder from the bracket and press "Reset" button for few seconds and check again or insert a brand new or formatted blank SD card and power up again to recover
Event	Green LED is constantly blinking and constant beeping	Constant Events and chimes due to bumps or potholes	Increase G-Sensor settings based on your vehicle needs
Speed	Green LED is constantly blinking and constant beeping	Speed limit set too low	Increase Speed limit setting through device configuration based on your vehicle needs
GPS	GPS LED (Blue) remains unlit while driving	GPS antenna is not able to acquire satellite signal due to weather condition	Relocate CYL-V mounting base to position on windshield with line-of-sight to sky
SD card Error	Constant beeps	SD error, no SD card,not recording video files	Remove and properly insert SD card into slot or reformat or replace SD card
Playback	Blurry video or no video image	Camera/lens problem	Make sure Camera/lens is clean and clear of obstructions and not damaged
Playback	No audio	Improper audio setting in CYL-V Player (mute) or configuration error	Configuration - set audio recording check mark to "ON". Player - adjust volume control slider as desired or unmute. Check speaker settings on PC.

TECHNICAL SPECIFICATIONS

SENSOR	3 Megapixel 1/3" CMOS
LENS	Fixed Focus Lens
SHUTTER	Electronic Shutter
VIDEO RECORDING	1920 x 1080, 30 frame/sec 1280 x 720, 30 frame/sec 1280 x 720, 60 frame/sec
VIDEO COMPRESSION	H.264
AUDIO	Microphone and Buzzer
MEMORY	Micro SD Card up to 64GB
G SENSOR	Built-in 3-Axis G-Sensor
BUTTON	Driver Event Button
OPERATING TEMPERATURE	-20° C to +65° C
STORAGE TEMPERATURE	-40°C to +65°C
POWER	-12 Volt DC

DIMENSIONS	Recorder only: W 1.7" x L 3.7" x H 1.5" Recorder with bracket: W 2.4" x L 4.1" x H 2.5"
WEIGHT	Recorder unit only: 2.9 oz. (83 g) Power Cable & Bracket with lock: 9.9 oz. (280 g)
OPERATING CURRENT	Standby 80mA, Operating 220mA @ 12.8VDC
STANDARD COMPLIANCE	FCC CERTIFIED Part 15 Subpart B (Class A) EMC ANSI C63.4-2009

FEATURES AND BENEFITS

FEATURES	Separate User Manual			
	DV301	DV302	DV303	DV304
FULL HD VIDEO RECORDING	•	•	•	•
3 MEGAPIXEL CMOS CAMERA	•	•	•	•
CONTINUOUS RECORDING	•	•	•	•
EVENT LOGGING	•	•	•	•
AUDIO RECORDING	•	•	•	•
PARKING SURVEILLANCE	•	•	•	•
G-FORCE SENSOR	•	•	•	•
PHOTO CAPTURE	•	•	•	•
DRIVER EVENT BUTTON	•	•	•	•
SECURITY LOCK w/ 2 KEYS	•	•	•	•
DATE & TIME STAMP	•	•	•	•
MICRO SD CARD (16GB)	•	•	•	•
WI-FI			•	•
GPS		•		•

NOTES

NOTES

COMMERCIAL WARRANTY

We warrant that all ROSCO mirror, camera, sun visor, and electronic vision products are free from defects in workmanship and materials for a period of ONE (1) YEAR from the date of receipt of the product. During the warranty period, we agree to provide a replacement for (or at our option, repair) the ROSCO product and/or any one or more component parts of a ROSCO product which malfunctions under normal use and service.

Upon discovering a defect, the customer must contact ROSCO for a return authorization and then must return the product, and/or component part, together with proof of date of receipt of the product, to ROSCO INC. 144-31 91st Ave. Jamaica, New York 11435. The customer and not ROSCO will be responsible for the payment of all removal, installation and transportation charges for return of defective products or components to ROSCO. Transportation charges for such return must be prepaid. The repaired or replaced equipment will be returned to the customer with transportation charges prepaid by ROSCO. Replacement (or repaired) products and/or component parts are warranted only for the unexpired term of the original warranty.

This warranty does not cover defects caused by neglect, misuse, incorrect application, incorrect installation, water damage, vehicle wash facilities, alteration or repair in any manner outside ROSCO's factory. Damage caused by the return shipment due to inadequate packaging or mishandling will not be covered. If the alleged defect is due to any of these causes, the customer will be advised of the findings and asked what action is to be taken. If ROSCO is requested to repair the product, a repair charge estimate will be prepared and the customer's written permission (purchase order, repair, etc.) will be necessary to proceed with the repair of the product and/or component part. Transportation charges for such returns will be the responsibility of the customer.

This warranty may not be expanded by oral representation, written sales information, and drawings or otherwise. Repair or replacement is the exclusive remedy for defective products under this warranty. This warranty is expressly in lieu of all other warranties, including any implied warranty of merchantability or any implied warranty of fitness for a particular purpose on any ROSCO product. ROSCO shall not be liable for any consequential or incidental damages for breach of any express or implied warranty on any ROSCO product.



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