Instruction Manual

Safety Camera System for Forklifts with 5" Display

RVS-577FW
TABLE OF CONTENTS

Introduction ........................................... 03
Safety Information ...................................... 04-06
Before Beginning Installation ......................... 07-08
In The Box ........................................... 09
Wiring .................................................. 10-11
Monitor Introduction .................................... 12
Splicing ............................................... 13
Monitor Dimensions .................................... 14
Monitor Specifications .................................. 15
Camera Specifications .................................. 16
Troubleshooting ....................................... 17
Warranty ............................................... 18
Disclaimer ............................................ 19
NOTE!

*Please read all of the installation instructions carefully before installing the product. Improper installation will void manufacturer’s warranty.*

**Congratulations** on purchasing a Safety Camera System!

With this manual you will be able to properly install and operate the unit.

This system is intended to be installed as a supplement aid to your standard rear view mirror that already exists in your vehicle. The system should not be used as a substitute for the standard rear view mirror or for any other mirror that exists in your vehicle.

In some jurisdictions, it is unlawful for a person to drive a motor vehicle equipped with a TV viewer or screen located forward of the back of the driver’s seat or in any location that is visible, directly or indirectly, to the driver while operating the vehicle.
Please read the entire manual and follow the instructions and warnings carefully. Failure to do so can cause serious damage and/or injury, including loss of life. Be sure to obey all applicable local traffic and motor vehicle regulations as it pertains to this product. Improper installation will void manufacturer’s warranty.

**USAGE:**

- The system is designed to help the driver safely detect people and/or objects helping to avoid damage or injury. However, you the driver, must use it properly. Use of this system is not a substitute for safe, proper or legal driving.

- Never back up while looking at the monitor alone. You should always check behind and around the vehicle when backing up, in the same way as you would if the vehicle did not have the system. If you back up while looking only at the monitor, you may cause damage or injury. Always back up slowly.

- The system is not intended for use during extensive back-up maneuvers or backing into cross traffic or pedestrian walkways.

- Please, always remember, the area displayed by the system is limited. It does not display the entire panorama that is behind you.
INSTALLATION:

- Electric shock or product malfunction may occur if this product is installed incorrectly.

- Use this product within the voltage range specified. Failure to do so can cause electronic shock or product malfunction.

- Take special care when cleaning the monitor.

- Make sure to firmly affix the product before use.

- If smoke or a burning smell is detected, disconnect the system immediately.

- Where the power cable may touch a metal case, cover the cable with friction tape. A short circuit or disconnected wire may cause a fire.

- While installing the Rear View System be careful with the wire positioning in order to avoid wire damage.

- The Rear View System should only be used when the vehicle is in reverse.

- Do not watch movies or operate the monitor while driving; as it may cause an accident.

- Do not install the monitor where it may obstruct drivers view or obstruct an air bag device.

- Dropping the unit may cause possible mechanical failure.
If you have questions about this product, contact:

Rear View Safety
1797 Atlantic Avenue
Brooklyn, NY 11233
Tel: 1.800.764.1028

IN NO EVENT SHALL SELLER OR MANUFACTURER BE LIABLE FOR ANY DIRECT OR CONSEQUENTIAL DAMAGES OF ANY NATURE, OR LOSSES OR EXPENSES RESULTING FROM ANY DEFECTIVE PRODUCT OR THE USE OF ANY PRODUCT.
Before drilling please check that no cable or wiring is on the other side of the wall. Please clamp all wires securely to reduce the possibility of them being damaged while vehicle is in use. Keep all cables away from hot/moving parts and electrical noisy components.

We recommend doing a benchmark test before installation to insure that all components are working properly.

Step 1: Choose the monitor and camera locations.

Step 2: Install all cables in vehicle, when necessary a 0.8 (20mm) hole should be drilled for passing camera cable through vehicles walls. Install split grommets where applicable.

Step 3: Once all cables and wiring have been properly routed, perform a system function test by temporarily connecting the system.
Warning!

1. *This monitor is high voltage. Only professionals should open the monitor's case.*

2. *Do not watch the video while driving unless you are monitoring the rear view camera display.*
In The Box

1 x Color Waterproof Forklift Camera
1 x 5.6" TFT LCD Digital Color Monitor with Universal Mount
1 x 33' Camera Cable
1 x U-Bracket
1 x Flushmount
1 x Remote Control
1 x Power Harness
1 x 4 Pin to 5 Pin Adapter
1 x Screw Kit for Installation
**Power Harness**

- To power the system connect the power (RED) 12V+ wire to ignition power and the ground (BLACK) wire to chassis ground.

- These are the only wires needed to power the entire system and all the cameras. Each camera can be seen at any time by simply pressing the power button and using the V1/2 button to toggle.

- The three positive trigger wires (WHITE-CH1, BROWNCH2, BLUE-CH3) each represent one channel and will turn on their channel when the trigger wire is energized with 12V.

- "Camera 3" is the designated backup channel. To have the backup camera come on when you go into reverse, connect the BLUE wire to reverse power (or any power source that comes on only in reverse).

- The other channels can similarly be triggered (i.e. side cameras can be triggered by the turn signals etc.)

- To automatically have camera and monitor turn ON when vehicle activates, simply twist BLUE positive trigger 12V+ to Red Power line 12V+ and wire to ignition power.
Wiring

1. DC 12V-24V
2. Ground
3. Port #3 (Blue)
4. Port #2 (Brown)
5. Port #1 (White)
MONITOR INTRODUCTION

- To turn on the monitor, press “ON” button.
- To adjust brightness, press “MENU” 1 time and use arrows
- To adjust contrast, press “MENU” 2 times and use arrows
- To adjust saturation, press “MENU” 3 times and use arrows
- To adjust sharpness, press “MENU” 4 times and use arrows
- To adjust volume, press “MENU” 5 times and use arrows
- To change language, press “MENU” 6 times and use arrows
- To activate rotate image option, press “MENU” 7 times and use arrows.
- To adjust distance grid, press “MENU” 8 times and use arrows
- To adjust grid position, press “MENU” 9 times and use arrows
- To activate day/night option, press “MENU” 10 times and use arrows
- To reset your system, press “MENU” 11 times and use arrows
- To view images on other cameras, press “CAMERA SELECTION” 1 time for camera one, 2 times for camera two and 3 times for camera three.
Splicing

1. Red - Power (+)
2. Yellow - Video
3. Green - Mirror / Normal Imaging
4. White - Audio
5. Black - Ground (-)

Remote

- Power
- Toggle Video
- Toggle Selection
- Menu
- Toggle Mirror/Normal Image
Monitor Dimensions

- 5" TFT LCD Digital Color Display
- Built-in speakers for audio
- Adjustable distance grid lines for backing up reference
- 3 channel video inputs - Supports 3 cameras
- Innovative back-lit buttons illuminate in the dark
## Monitor Specifications

<table>
<thead>
<tr>
<th>Type</th>
<th>TFT LCD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screen Size</td>
<td>5.6&quot;</td>
</tr>
<tr>
<td>Dot Resolution</td>
<td>800 X 3 (RGB) X 480</td>
</tr>
<tr>
<td>Display Format/Contrast</td>
<td>16:9 / 500:1</td>
</tr>
<tr>
<td>Display Brightness</td>
<td>400cd/m²</td>
</tr>
<tr>
<td>Viewing Angle</td>
<td>U:50° D:60° L/R:70°</td>
</tr>
<tr>
<td>Video Input</td>
<td>3 channel</td>
</tr>
<tr>
<td>Video Source</td>
<td>1Vp-p, 75Ω</td>
</tr>
<tr>
<td>Power Supply</td>
<td>DC 12V-24V (+/- 10%)</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>5W</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-30°C ~ +80° C</td>
</tr>
<tr>
<td>Video System</td>
<td>Auto NTSC/PAL</td>
</tr>
<tr>
<td>Overall Dimensions</td>
<td>5&quot; (L) x 5&quot; (H) x 1&quot; (D)</td>
</tr>
<tr>
<td>Weight</td>
<td>400G</td>
</tr>
<tr>
<td>Vibration Rating</td>
<td>5G</td>
</tr>
<tr>
<td>Dot Pitch</td>
<td>154.08 (H) X 86.58 (V)</td>
</tr>
<tr>
<td>Sync System</td>
<td>Internal</td>
</tr>
</tbody>
</table>
## Camera Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensor</td>
<td>1/4&quot; CMOS ASX340CS</td>
</tr>
<tr>
<td>TV System</td>
<td>PAL / NTSC</td>
</tr>
<tr>
<td>Effective Pixels</td>
<td>640 x 480 Pixels</td>
</tr>
<tr>
<td>Sensing Area</td>
<td>4.077mm x 3.136mm</td>
</tr>
<tr>
<td>Scanning System</td>
<td>2:1 Interlace</td>
</tr>
<tr>
<td>Sync System</td>
<td>Internal</td>
</tr>
<tr>
<td>Resolution</td>
<td>420 TV Lines</td>
</tr>
<tr>
<td>Horizontal Sync Frequency</td>
<td>15.625 kHz / 15.734 kHz</td>
</tr>
<tr>
<td>Vertical Sync Frequency</td>
<td>50 Hz / 60 Hz</td>
</tr>
<tr>
<td>Video Output</td>
<td>1.0Vp-p, 75Ω</td>
</tr>
<tr>
<td>Gamma Correction</td>
<td>0.45</td>
</tr>
<tr>
<td>AGC</td>
<td>Auto</td>
</tr>
<tr>
<td>S/N Ratio</td>
<td>Better than 46dB</td>
</tr>
<tr>
<td>White Balance</td>
<td>Auto</td>
</tr>
<tr>
<td>Electronic Shutter</td>
<td>Auto: 1/60 (NTSC) / 1/50 (PAL) ~ 1/100,000 Seconds</td>
</tr>
<tr>
<td>BLC</td>
<td>Auto</td>
</tr>
<tr>
<td>Operation Frequency</td>
<td>2400-2483.5MHZ</td>
</tr>
<tr>
<td>Line of Sight Range</td>
<td>50m</td>
</tr>
<tr>
<td>Receiving Sensitivity</td>
<td>-89dBm</td>
</tr>
<tr>
<td>Video Codec</td>
<td>MPEG4</td>
</tr>
<tr>
<td>Frame Rate</td>
<td>PAL: 25f/s NTSC: 30f/s</td>
</tr>
<tr>
<td>Transmission Power</td>
<td>20dBm</td>
</tr>
<tr>
<td>Spread Spectrum</td>
<td>FHSS</td>
</tr>
<tr>
<td>Delay</td>
<td>120ms</td>
</tr>
<tr>
<td>RF Bit Rate</td>
<td>4Mbps</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-20°C ~ 70°C, RH 95% MAX</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-30°C ~ 80°C, RH 95% MAX</td>
</tr>
<tr>
<td>Power Supply</td>
<td>DC 10 ~ 32V</td>
</tr>
<tr>
<td>Waterproof Rating</td>
<td>IP69K</td>
</tr>
<tr>
<td>Viewing Angle</td>
<td>45°</td>
</tr>
</tbody>
</table>

### Rear View Safety
Troubleshooting

Monitor Displays Blue Screen & Displays No Signal

- Do a hard reset, unplug all cables and power cables leave out for 1 minute and then reconnect them
- Check to ensure that the connection to the camera is tight
- Verify camera cable is plugged into port labeled Backup Camera trigger on power harness is put to power 12v+

If the problem still persists, verify that alternate ports work. If alternate ports do not work, remove Blue Trigger wire from 12V+ and select alternate channels.

Monitor Will Not Power-Up (no backlight on power button)

- Check fuse
- Check 12v+ to monitor
- Check ground connection

No Image On Screen

- Verify camera is on correct camera input
- Verify cable is connected to monitor
- Verify camera is connected to cable
- Connect known working camera and cable to monitor
- Verify Blue trigger is receiving power
ONE YEAR WARRANTY
REAR VIEW SAFETY, INC. WARRANTS THIS PRODUCT AGAINST MATERIAL DEFECTS FOR A PERIOD OF ONE YEAR FROM DATE OF PURCHASE. WE RESERVE THE RIGHT TO REPAIR OR REPLACE ANY SUCH DEFECTIVE UNIT AT OUR SOLE DISCRETION. REAR VIEW SAFETY, INC. IS NOT RESPONSIBLE FOR A DEFECT IN THE SYSTEM AS A RESULT OF MISUSE, IMPROPER INSTALLATION, DAMAGE OR MISCONSTRUCTION OF THE ELECTRONIC COMPONENTS. REAR VIEW SAFETY, INC. IS NOT RESPONSIBLE FOR CONSEQUENTIAL DAMAGES OF ANY KIND.

THIS WARRANTY IS VOID IF: DEFECTS IN MATERIALS OR WORKMANSHIP OR DAMAGES RESULT FROM REPAIRS OR ALTERATIONS WHICH HAVE BEEN MADE OR ATTEMPTED BY OTHERS OR THE UNAUTHORIZED USE OF NONCONFORMING PARTS; THE DAMAGE IS DUE TO NORMAL WEAR AND TEAR, THIS DAMAGE IS DUE TO ABUSE, IMPROPER MAINTENANCE, NEGLECT OR ACCIDENT; OR THE DAMAGE IS DUE TO USE OF THE REAR VIEW SAFETY, INC. SYSTEM AFTER PARTIAL FAILURE OR USE WITH IMPROPER ACCESSORIES.

WARRANTY PERFORMANCE
DURING THE ABOVE WARRANTY PERIOD, SHOULD YOUR REAR VIEW SAFETY PRODUCT EXHIBIT A DEFECT IN MATERIAL OR WORKMANSHIP, SUCH DEFECT WILL BE REPAIRED WHEN THE COMPLETE REAR VIEW SAFETY, INC. PRODUCT IS RETURNED, POSTAGE PREPAID AND INSURED, TO REAR VIEW SAFETY, INC. OTHER THAN THE POSTAGE AND INSURANCE REQUIREMENT, NO CHARGE WILL BE MADE FOR REPAIRS COVERED BY THIS WARRANTY.

WARRANTY DISCLAIMERS
NO WARRANTY, ORAL OR WRITTEN, EXPRESSED OR IMPLIED, OTHER THAN THE ABOVE WARRANTY IS MADE WITH REGARD TO THIS REAR VIEW SAFETY, INC. REAR VIEW SAFETY, INC. DISCLAIMS ANY IMPLIED WARRANTY OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE AND ALL OTHER WARRANTIES IN NO EVENT SHALL REAR VIEW SAFETY, INC. BE LIABLE FOR ANY INCIDENTAL, SPECIAL, CONSEQUENTIAL, OR PUNITIVE DAMAGES OR FOR ANY COSTS, ATTORNEY FEES, EXPENSES, LOSSES OR DELAYS ALLEGED TO BE AS A CONSEQUENCE OF ANY DAMAGE TO, FAILURE OF, OR DEFECT IN ANY PRODUCT INCLUDING, BUT NOT LIMITED TO, ANY CLAIMS FOR LOSS OF PROFITS.
DISCLAIMER

REAR VIEW SAFETY AND/OR ITS AFFILIATES DOES NOT GUARANTEE OR PROMISE THAT THE USER OF OUR SYSTEMS WILL NOT BE IN/PART OF AN ACCIDENT OR OTHERWISE NOT COLLIDE WITH AN OBJECT AND/OR PERSON. OUR SYSTEMS ARE NOT A SUBSTITUTE FOR CAREFUL AND CAUTIOUS DRIVING OR FOR THE CONSISTENT ADHERENCE TO ALL APPLICABLE TRAFFIC LAWS AND MOTOR VEHICLE SAFETY REGULATIONS. THE REAR VIEW SAFETY PRODUCTS ARE NOT A SUBSTITUTE FOR REARVIEW MIRRORS OR FOR ANY OTHER MOTOR VEHICLE EQUIPMENT MANDATED BY LAW. OUR CAMERA SYSTEMS HAVE A LIMITED FIELD OF VISION AND DO NOT PROVIDE A COMPREHENSIVE VIEW OF THE REAR OR SIDE AREA OF THE VEHICLE. ALWAYS MAKE SURE TO LOOK AROUND YOUR VEHICLE AND USE YOUR MIRRORS TO CONFIRM REARWARD CLEARANCE AND THAT YOUR VEHICLE CAN MANEUVER SAFELY. REAR VIEW SAFETY AND/OR ITS AFFILIATES SHALL HAVE NO RESPONSIBILITY OR LIABILITY FOR DAMAGE AND/OR INJURY RESULTING FROM ACCIDENTS OCCURRING WITH VEHICLES HAVING SOME OF REAR VIEW SAFETY PRODUCTS INSTALLED AND REAR VIEW SAFETY AND/OR ITS AFFILIATES, THE MANUFACTURER, DISTRIBUTOR AND SELLER SHALL NOT BE LIABLE FOR ANY INJURY, LOSS OR DAMAGE, INCIDENTAL OR CONSEQUENTIAL, ARISING OUT OF THE USE OR INTENDED USE OF THE PRODUCT. IN NO EVENT SHALL REAR VIEW SAFETY AND/OR ITS AFFILIATES HAVE ANY LIABILITY FOR ANY LOSSES (WHETHER DIRECT OR INDIRECT, IN CONTRACT, TORT OR OTHERWISE) INCURRED IN CONNECTION WITH THE SYSTEMS, INCLUDING BUT NOT LIMITED TO DAMAGED PROPERTY, PERSONAL INJURY AND/OR LOSS OF LIFE. NEITHER SHALL REAR VIEW SAFETY AND/OR ITS AFFILIATES HAVE ANY RESPONSIBILITY FOR ANY DECISION, ACTION OR INACTION TAKEN BY ANY PERSON IN RELIANCE ON REAR VIEW SAFETY SYSTEMS, OR FOR ANY DELAYS, INACCURACIES AND/OR ERRORS IN CONNECTION WITH OUR SYSTEMS FUNCTIONS.
If you have any questions about this product, contact:

Rear View Safety, Inc.
1797 Atlantic Avenue
Brooklyn, NY 11233
800.764.1028

Better Cameras. Better Service. IT’S OUR GUARANTEE.