

# INSTALLATION MANUAL

REARVIEW SAFETY SOLUTION PROVIDER

## HCS-700



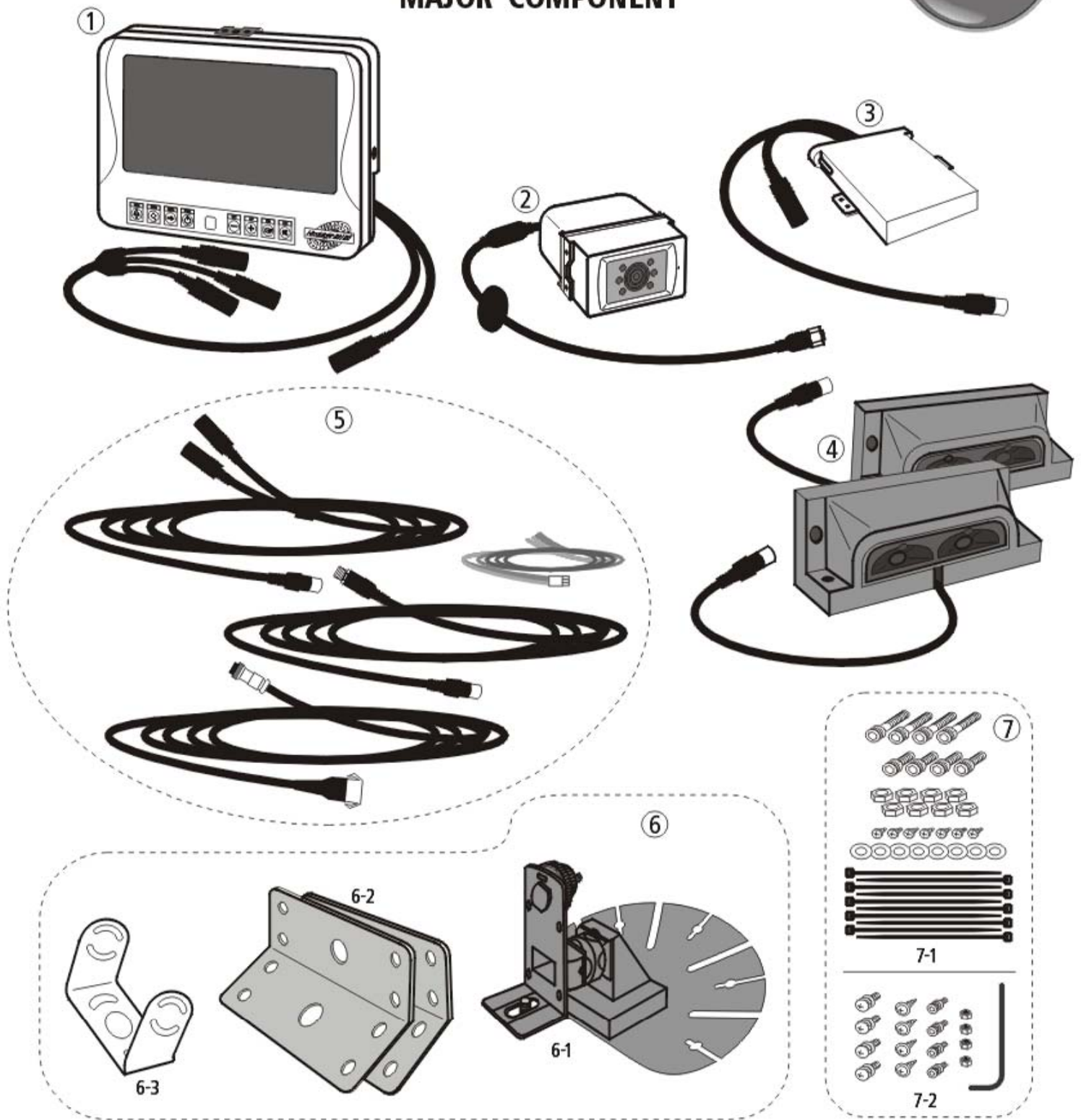
*Hindsight 20/20*<sup>®</sup>

Professional Value<sup>™</sup>

# INDEX

<b>1. Discription &amp; Features</b> .....	<b>2 ~ 5</b>
<b>2. Specification</b> .....	<b>6</b>
<b>3. Monitor Features</b> .....	<b>7 ~8</b>
<b>4. Camera Features</b> .....	<b>9 ~10</b>
<b>5. Detector Features</b> .....	<b>11</b>
<b>6. System Configuration</b> .....	<b>12 ~ 13</b>
<b>7. System Comprehension</b> .....	<b>14</b>

## MAJOR COMPONENT



## Discription

- ① 7" TFT LCD MONITOR (197×139×32)
- ② CCD CAMERA (IR LED TYPE) - 1 Units (Standard), 2~3 Units (Option)
- ③ SONAR MODULE (67×69×16)
- ④ DETECTOR (130×48×45) - 2 Units
- ⑤ CABLE - Detector Cable : 50'×1 / Power Cable : 40'×1 / Camera cable : 50'×1 / Power ext. : 15'×1
- ⑥ BRACKET - 6-1. Monitor Bracket × 1 / 6-2. Detector Bracket × 2 / 6-3. Camera Bracket × 1



# INSTALLATION MANUAL

## For the Hindsight 20/20 R (Model HCS-700, CS-700)

### GENERAL

Hindsight 20/20® Helps You Avoid Backing Accidents.

The use of Hindsight 20/20® does not relieve the driver of any responsibility for safe vehicle operation. It is an aid and entirely supplemental to good driving procedure.

### PRODUCT SUMMARY

#### Product Characteristics

Self-monitoring, self-diagnostic system.

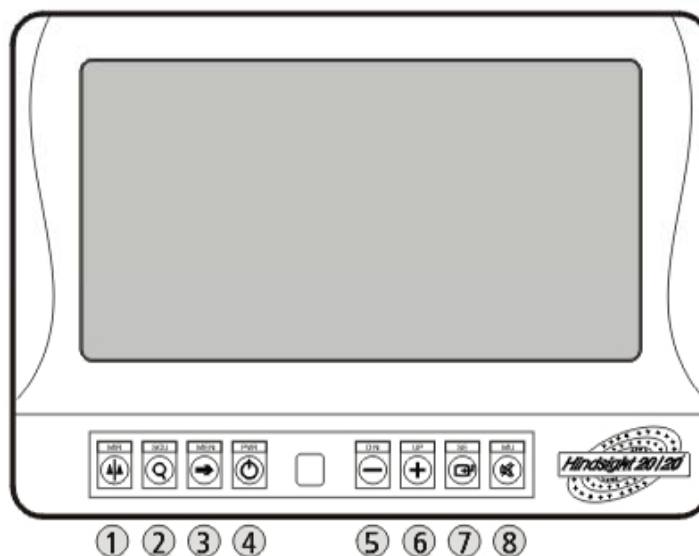
Unhampered by rain, snow, frost, fro or darkness.

Provides supplemental protection against most backing accidents.

Volume control allows a choice of sound levels.

### Operation

#### A. LCD SCREEN OPERATION



1. MIR---Mirror feature, change of orientation/adjustable picture (left and right).  
Only operates after activating the power switch to ON.

2. SOU--- Source feature, 3 ch optional switch for camera.  
Pushing SOU button selects the left, right, or the rear camera.  
Only operates after activating the power switch to ON.



3. MEN--- Menu feature, OSD control.
  - =BRIGHT: Set range (25-27)
  - =CONTRAST: Setrange (23-27)
  - =HUE: Set range (0-5)
  - =SATURATION (40)
  - =VOLUME: Set range (15-21)
4. PWR--- Normal (In case left, right, or rear trigger, not activated) driver may manually activates on/off from the monitor.
5. DN--- Volume down/Menu scroll
6. UP--- Volume up/Menu scroll
7. SE---Select feature, Menu off
8. MU---Mute Feature, Audio Off and ON.

#### B. Normal Off Operation.

ACC ON or start Engine key ON, the monitor maintains OFF while trigger input on hold status.

#### C. Normal ON Operation

Monitor screen/Menu OSD can be adjusted.

- Monitor switch ON, with Source switch, monitor displays left, right, or+ rear camera.
- Screen switches to the camera where triggers an input.
- During NORMAL ON. Sonar Module will not activate, Sonar Module is powered only when Reverse Gear is activated.

#### D. Reverse ON Operation.

Only activates ON/OFF when reverse gear is triggered.

- Self Diagnosis features, the short beep and sonar OK on center bottom of the screen are system check notifying the system is functioning normally. In case of an error, ERROR will appear on the screen.

- NO SIG will appear on the screen if there are no objects within the Sonar Detection Zone.

- When Sonar signal detects an object, 4 steps alarm along with GRN, YEL, RED graphic bar, a screen displays the distance display of 1,2,3,4,5,9FT with left and right detection zone indicators.

1FT zone - RIGHT 1FT or LEFT 1FT and GRN, YEL, RED graphic bar blinks simultaneously.

= Steady beep activates.

2FT zone - RIGHT 2FT or LEFT 2FT blinks/ RED graphic bar blinks rapidly.

= 2FT alarm activates.

3FT zone - RIGHT 3FT or LEFT 3FT blinks/ YEL, GRN graphic bar blinks.

= 3FT alarm activates.

4FT zone - RIGHT 4FT or LEFT 4FT blinks/ YEL, GRN graphic bar blinks.

= 3FT alarm activates.

5FT zone - RIGHT 5FT or LEFT 5FT blinks/ GRN graphic bar blinks.

= 5FT alarm activates.

9FT zone - RIGHT 9FT or LEFT 9FT blinks/ GRN graphic bar blinks.



- Switching to the side cameras by operating NORMAL ON, and 10 seconds after automatically retreats to the rear camera (Sonar Module continues to detect objects).
- DN, UP adjusts VOLUME/MUTE button may operate.
- Reverse trigger OFF automatically switches back to NORMAL OFF.

#### E. LEFT or RIGHT Trigger Operation.

- Provision of left and right camera as an option, operating a turn signal triggers to the intended camera.
- Activating the left or right turn signal will automatically trigger the correspondent camera.
- After activating of de-activating the SIDE trigger, a screen turns ON/OFF within 2 seconds.
- When both REVERSE and SIDE are triggered, REVERSE have priority over SIDE.
- If SIDE triggers, the monitor displays NO SIG indicator when side cameras are not installed.

#### F. Camera System Operation Only (w/o Sonar Module).

- Sonar Module excluded from the system only operates the camera system.
- No SONAR related OSD is displayed.
- SONAR MODULE can be added to convert to Sonar-Camera integrated unit.
- Built in SONAR MODULE or separate SONAR MODULE is equally effective.



## SPECIFICATION

### I. MONITOR SPEC

- 7" wide TFT LCD Monitor
- Power input 10v ~ 30v DC
- Power consumption : 10w<
- VIDEO SYSTEM: NTSC/PAL, standard signal
- RESOLUTION: 270,000 pixels.
- SPEAK VOLUME: 8 , 0.2w
- OPERATION TEMPERATURE: -10°C ~ 60°C
- STORAGE TEMPERATURE: -30°C ~ 70°C

### II. CAMERA SPEC

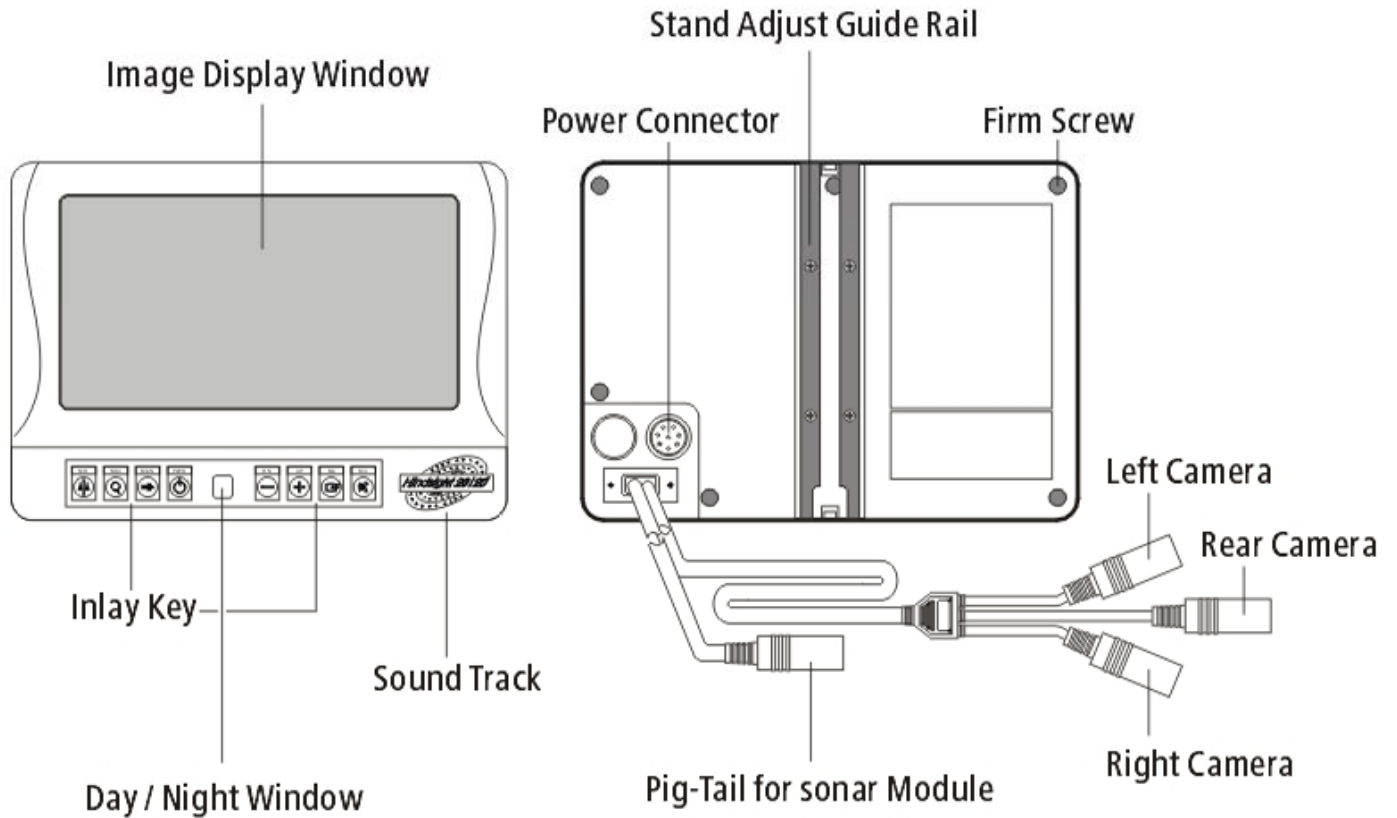
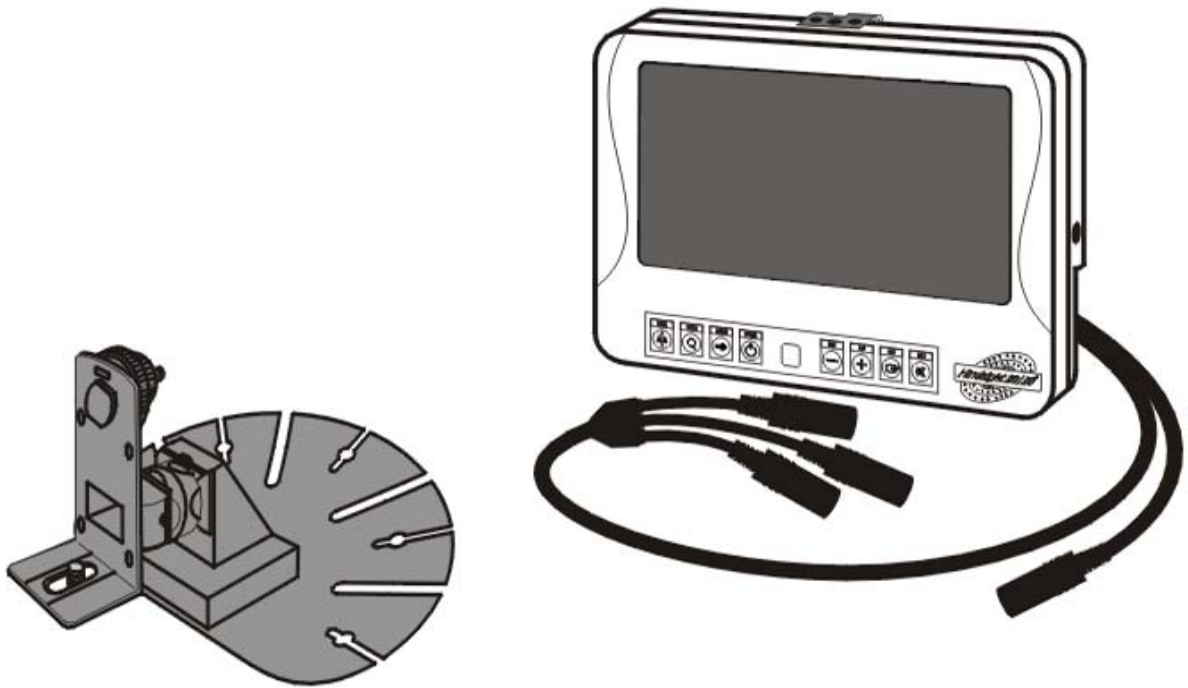
- 1/3" COLOR CCD SENSOR
- AUTO IRIS
- SIGNAL FORMAT: NTAS OR PAL
- PICTURE ELEMENT;270,000(NTSC), 290,000(PAL)
- SYNCHRONIZATION:INTERNAL SYNC
- RESOLUTION:380TV LINES
- MIN ILLUMINATION:0.1 LUX/IR ON 0 LUX
- S/N RATIO:48 dB
- VIDEO OUT:750 OHM 1Vp\_p, COMPOSITE SIGNAL
- AUDIO OUT:6000HM, 50m V
- OPERATING TEMPERATURE: -30Deg c ~ -60Deg c

### III. SONAR DEVICE SPEC.

- |                         |                         |
|-------------------------|-------------------------|
| -Ultrasonic Frequency   | 40 KHz                  |
| -Ultrasonic Sensitivity | -78dB                   |
| -Input Voltage          | 110V-31V                |
| -Power Consumption      | 2.5W                    |
| -Operating Temperature  | -13°F~167°F(-25°C~75°C) |
| -Effective Range        | 9Feet (2.7 Meter)       |



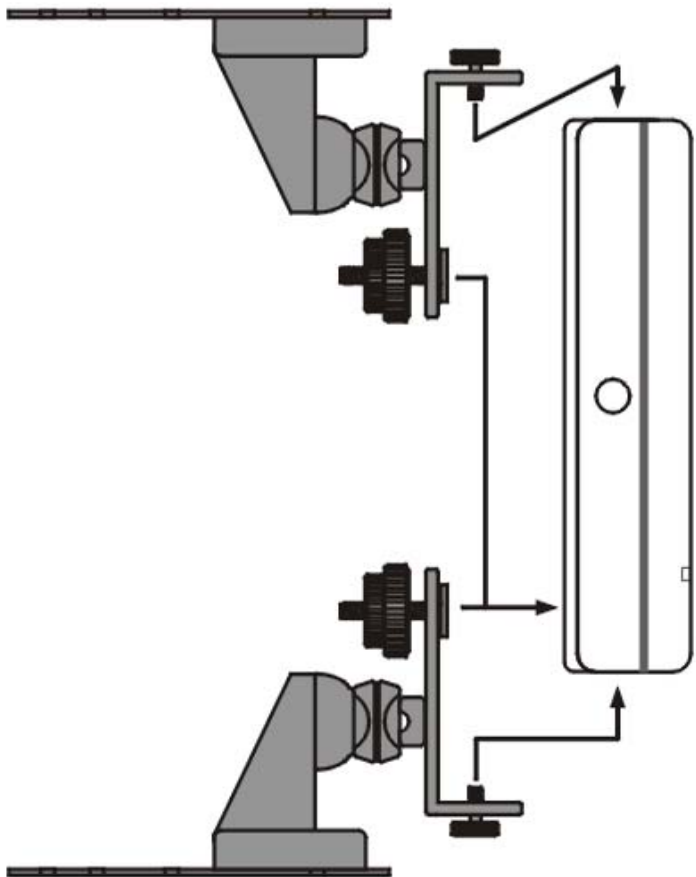
# MONITOR FEATURE



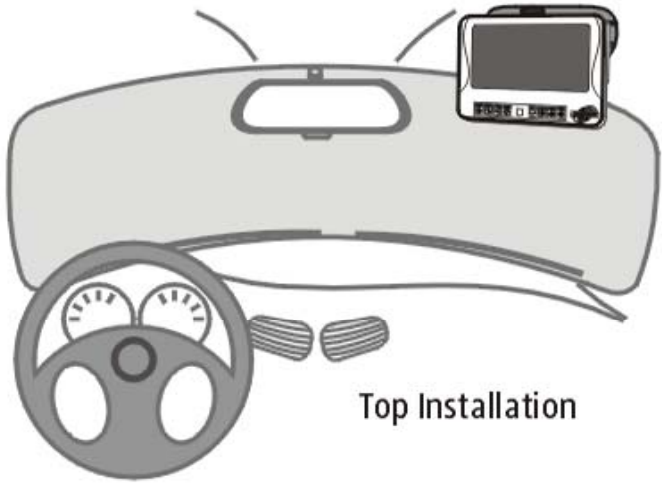
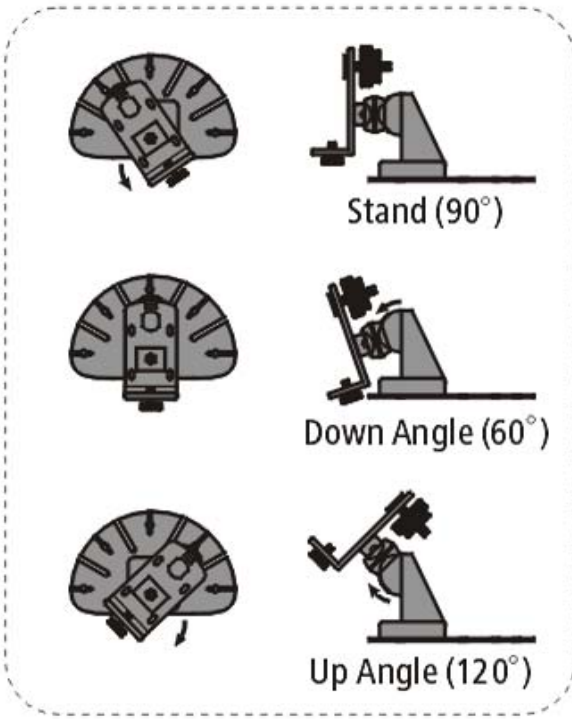




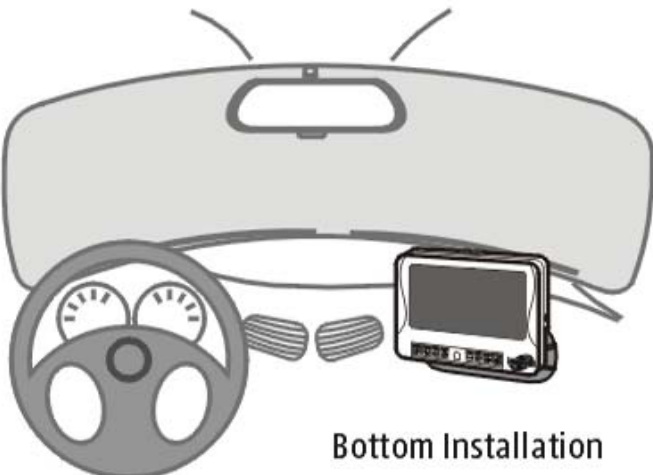
Top Installation View



Bottom Installation View



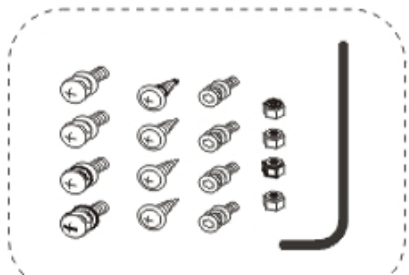
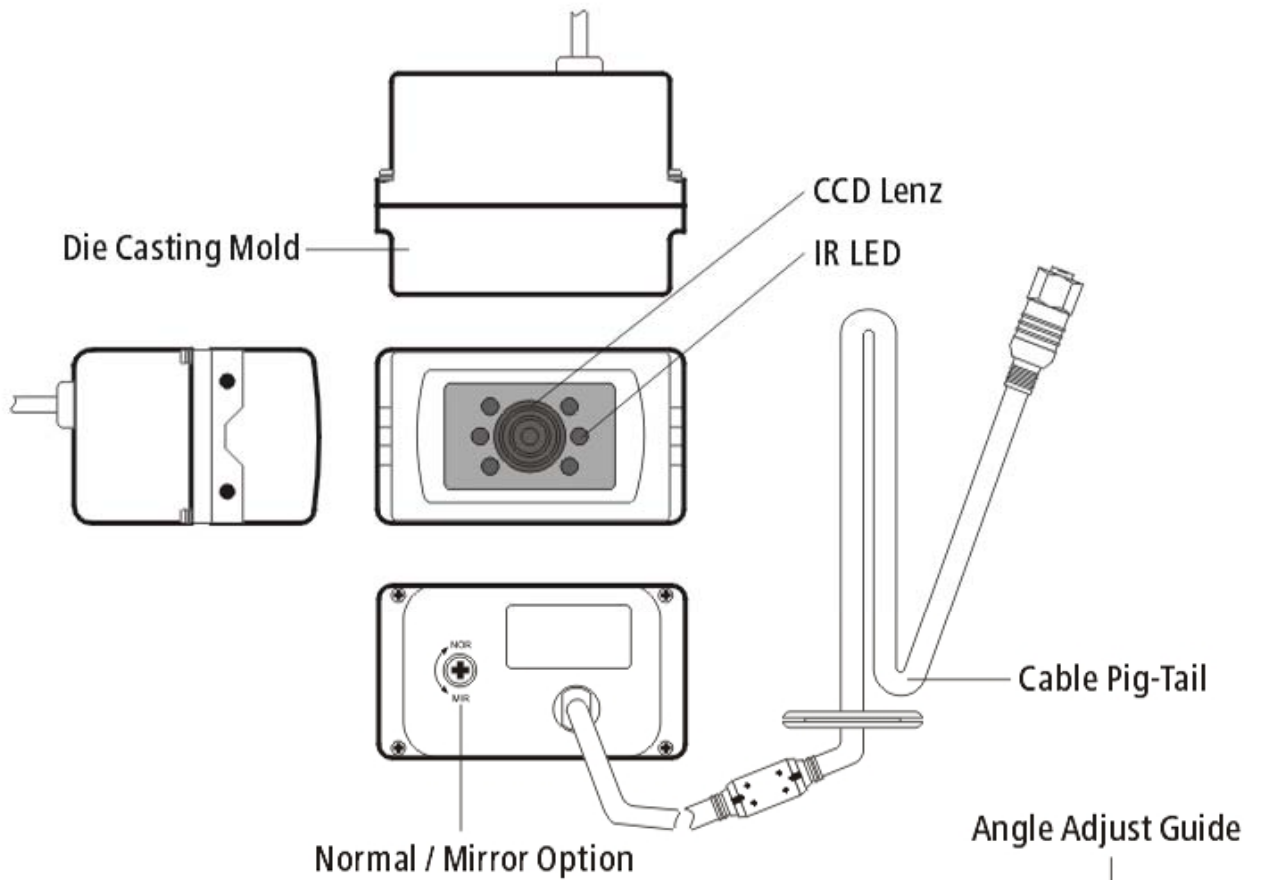
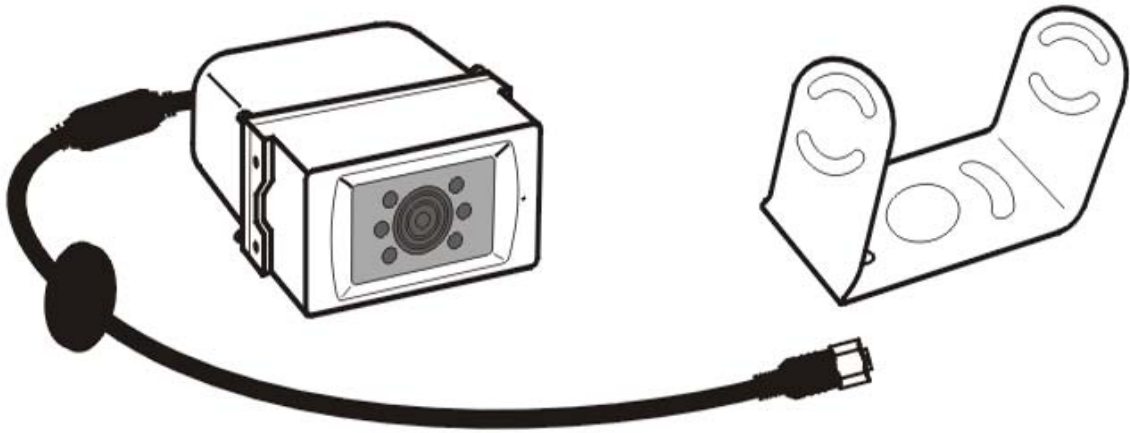
Top Installation



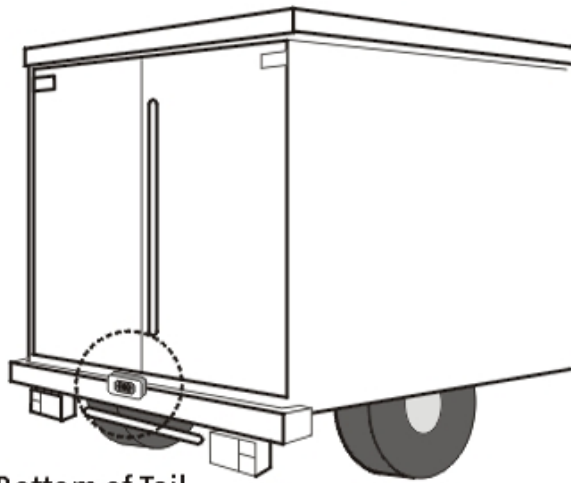
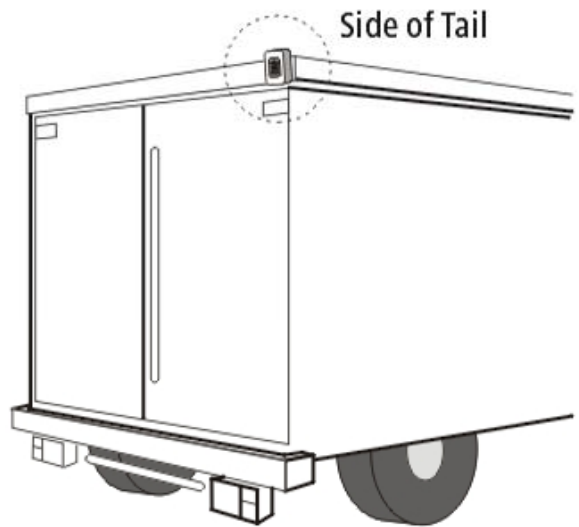
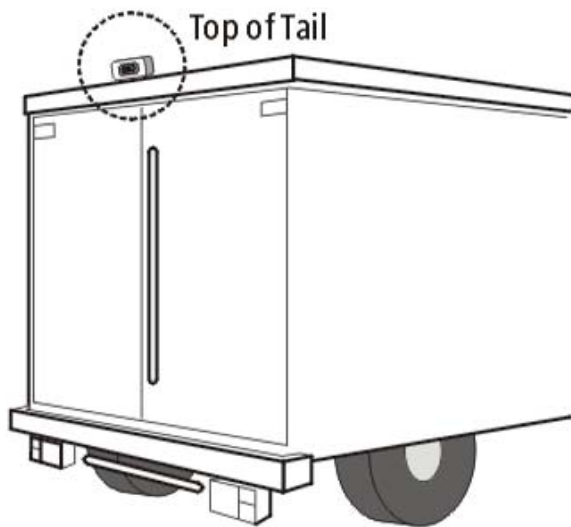
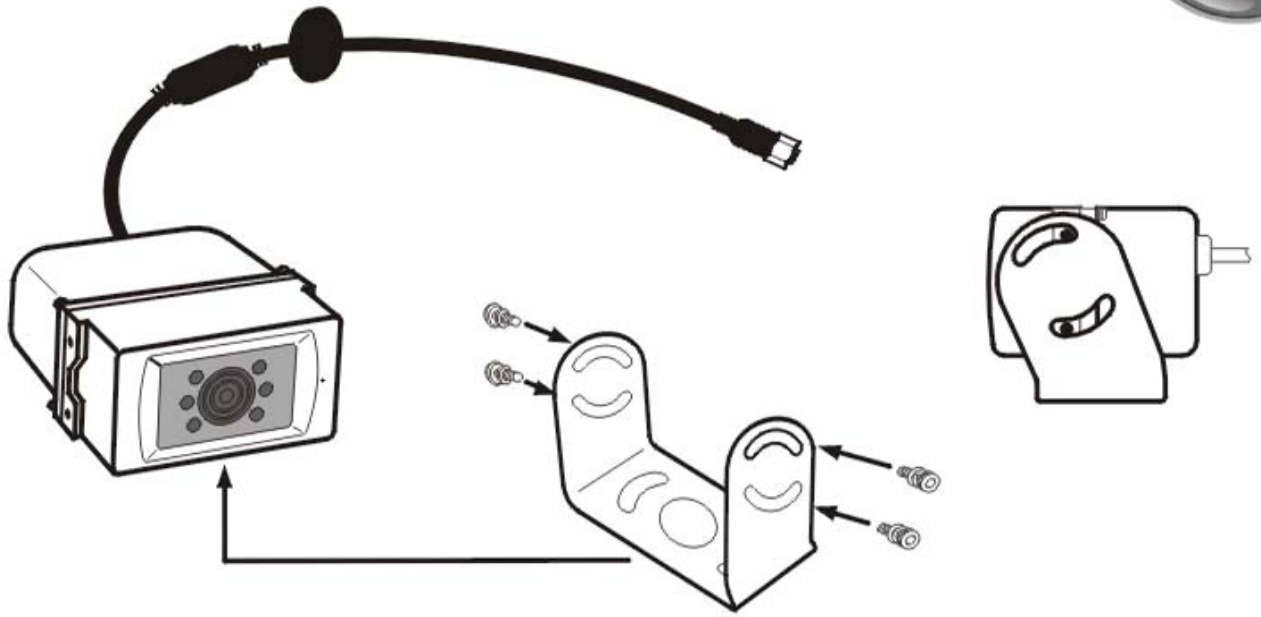
Bottom Installation



# CAMERA FEATURE



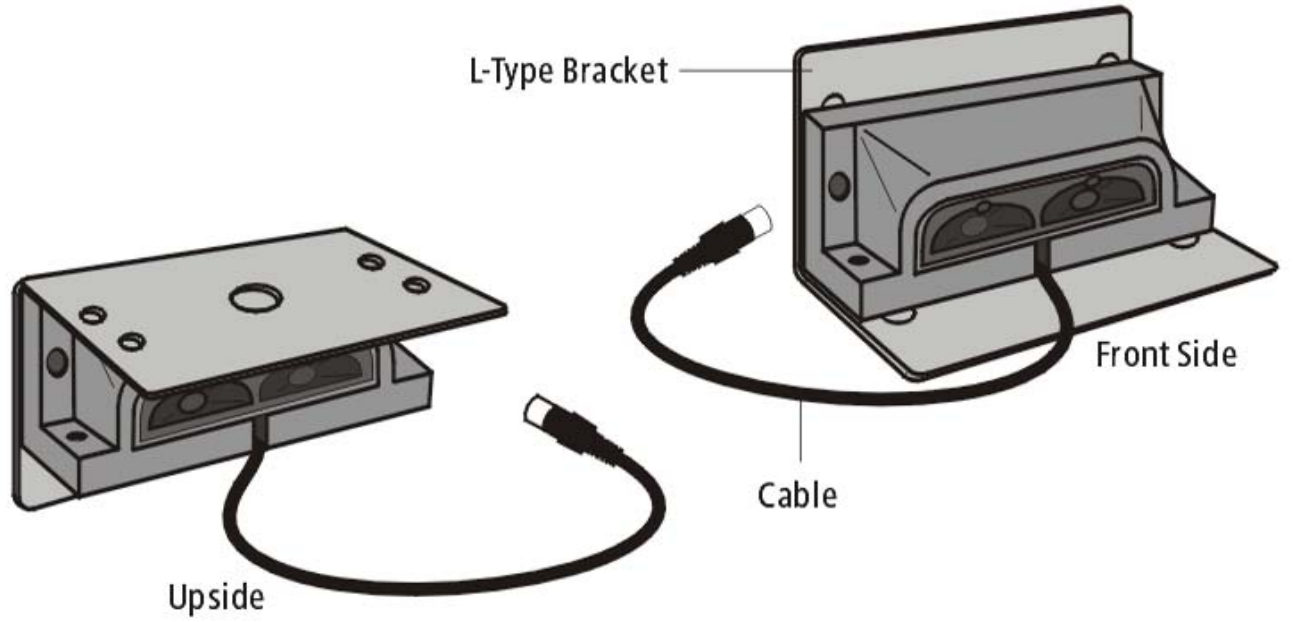
# INSTALLATION VIEW



Bottom of Tail

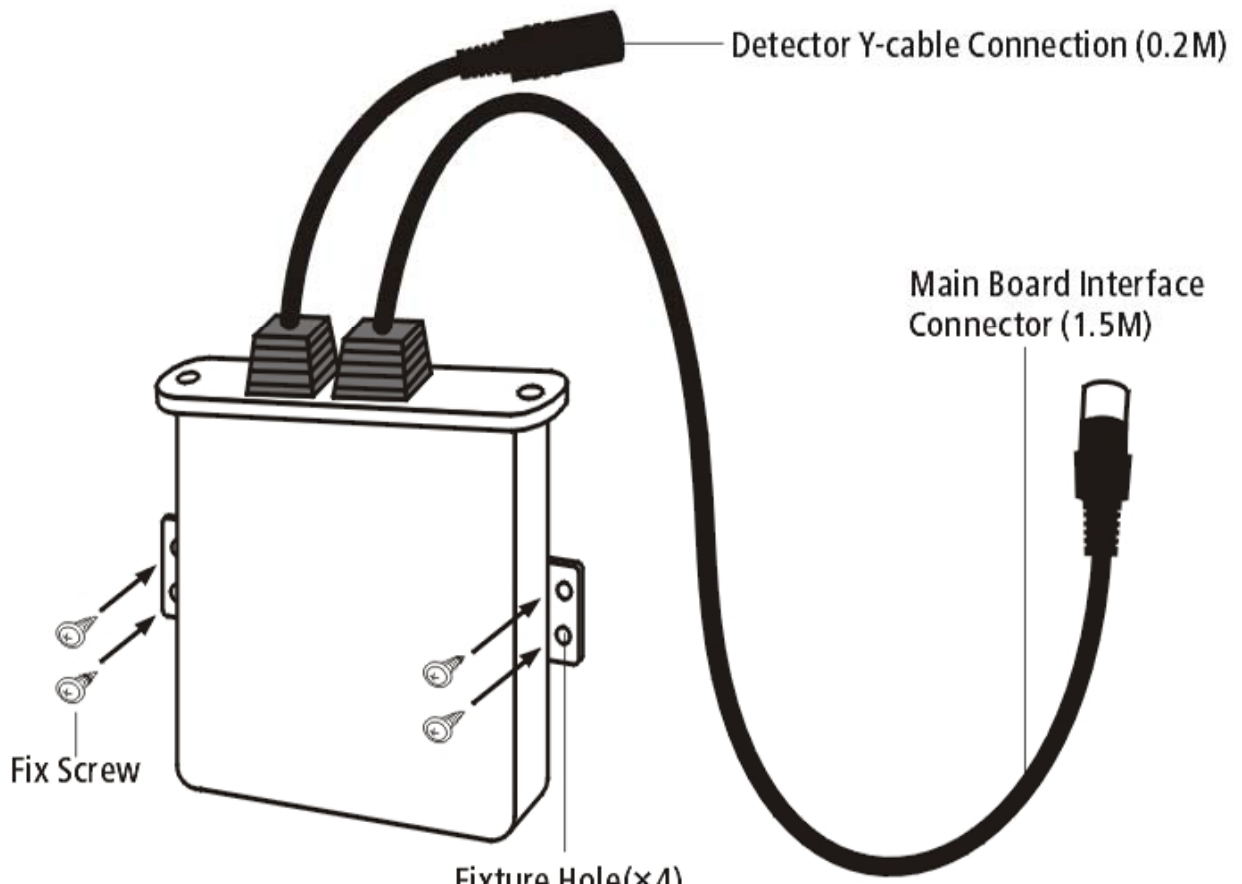


## DETECTOR FEATURE

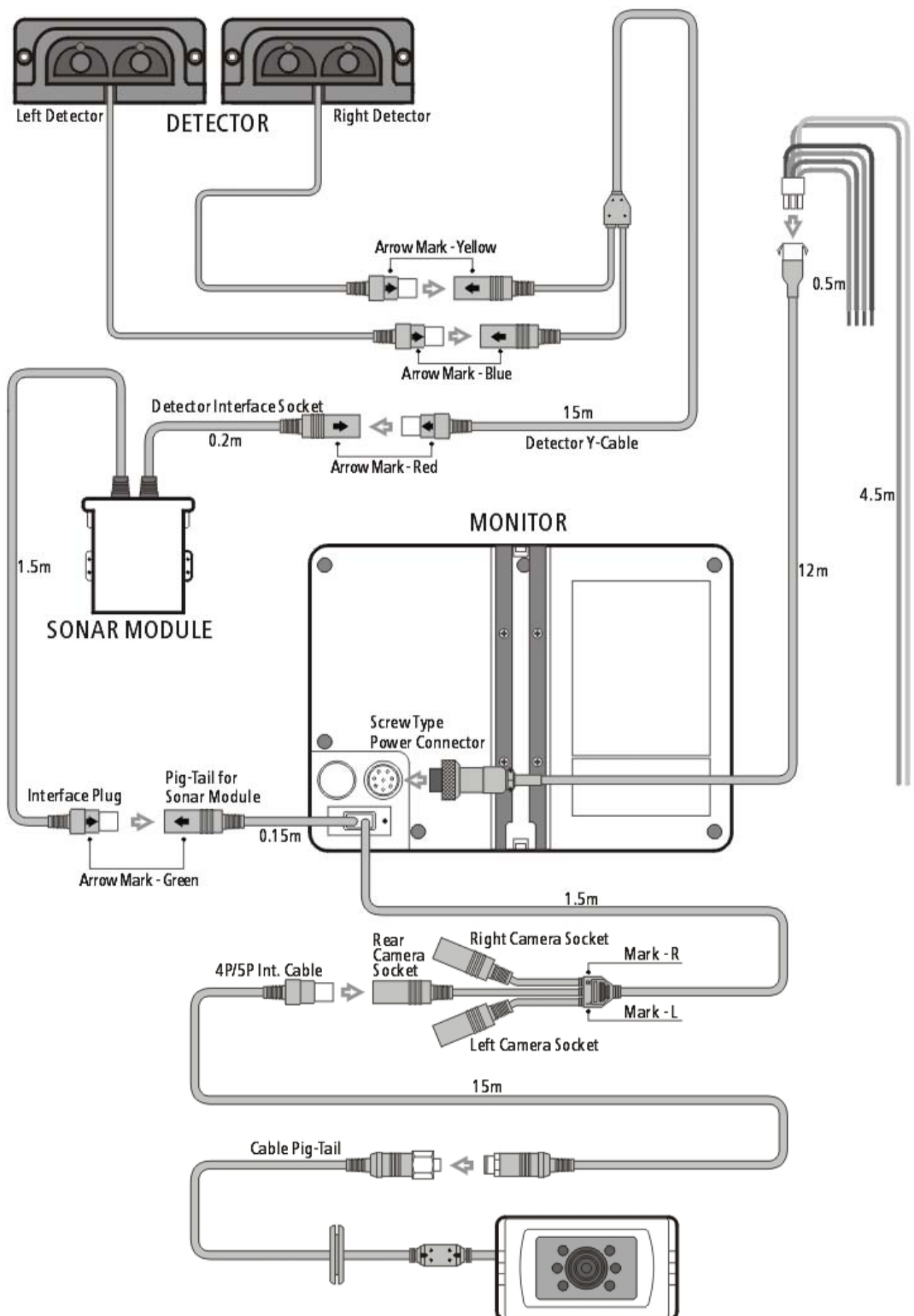


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## SONAR MODULE FEATURE



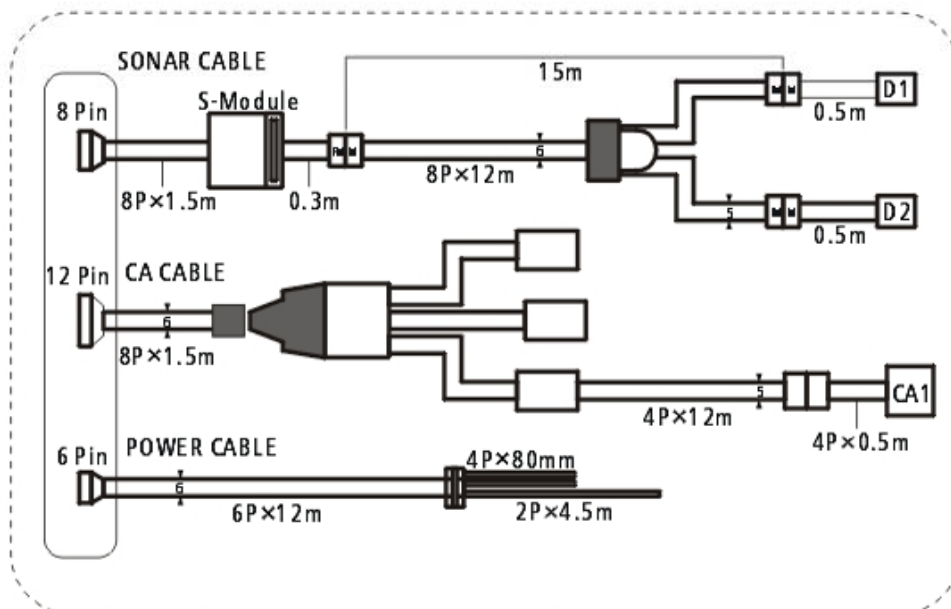
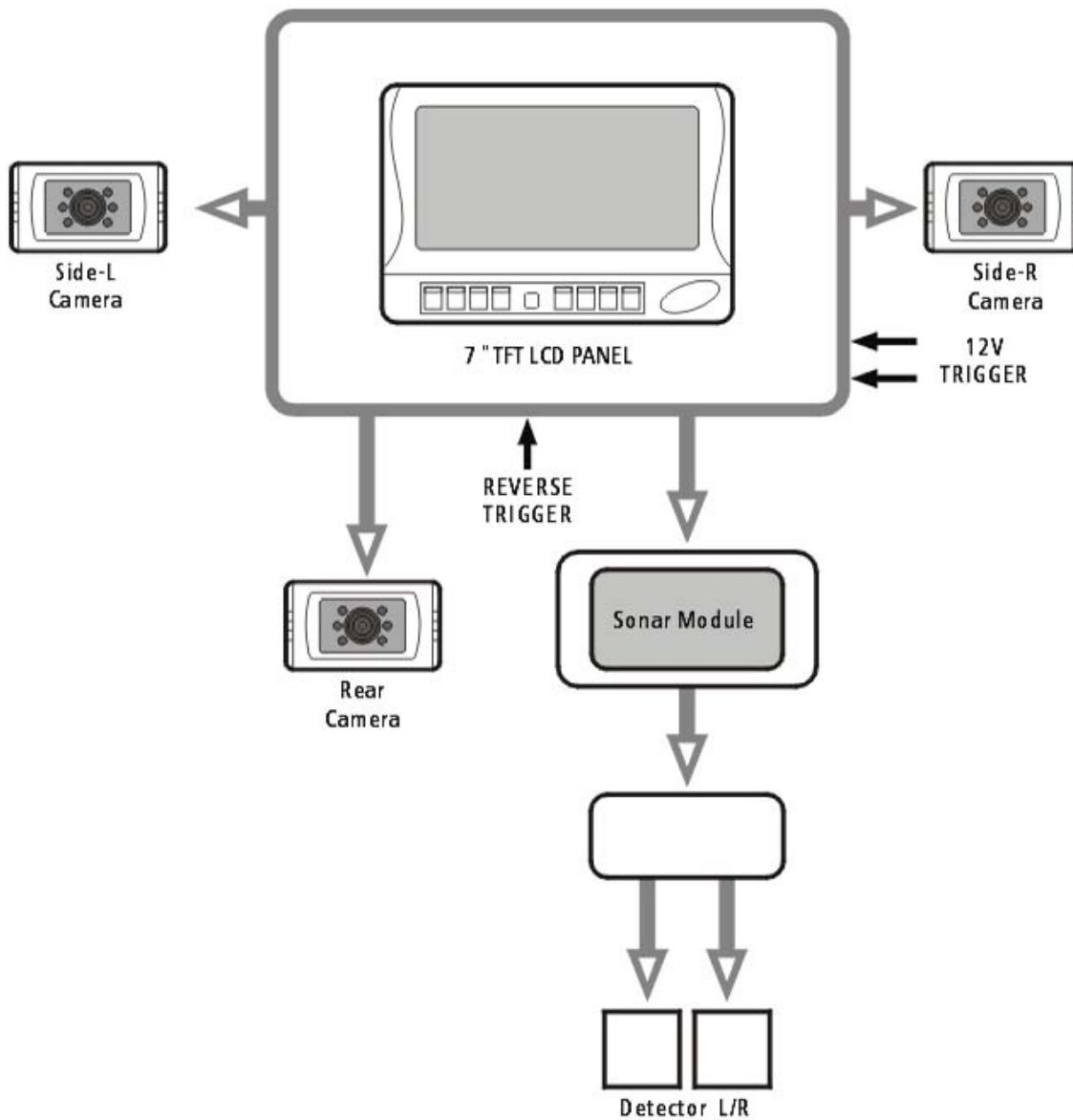
# SYSTEM INSTALLATION DRAWING





# System-B Configuration

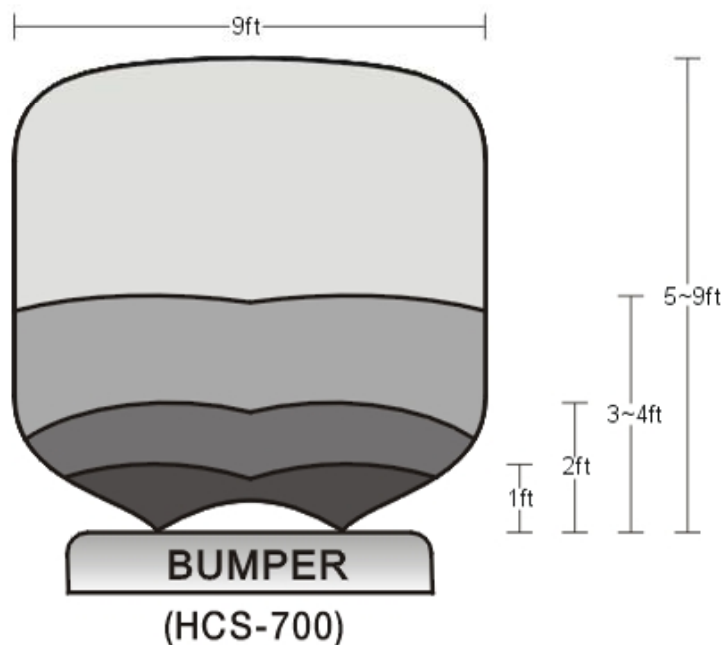
## Out Board Type of Sonar Interface Module



## SYSTEM COMPREHENSION

Description		Model	HCS-700			
Ultrasonic Frequency			40KHz			
Ultrasonic Sensitivity			-78dB			
Rated Voltage			DC 11V ~ 30V			
Power Consumption			10W			
Operation Temperature			-4 ~ 140°F			
Detection Area	Depth (Distance)		6 steps ( 1,2,3,4,5, & 9ft')			
	Width		9ft'			
Number of Detectors			2			
Beam Angle	Vertical		50°			
	Horizontal		130°			
Detection Angle			up 35° down 15°			
Warning	Visual		4 Steps G,Y,R Graphic Bar display			
	Audio		4 tones			
Alarm Zone		Zone1	Zone2	Zone3	Zone4	
		1ft	2ft	3-4ft	5-9ft	
Cable	Detector Cable		50'x 1			
	Detector Pigtail		16"			
	Camera Cable		50'x 1			
	Power Cable		40'x 1			
	Power Ext.		15'x 1			
Functions	Self Diagnostic		YES			
	Waterproof		YES			
	Wiring		Heavy Duty			

### SONAR DETECTION FIELD





Sonar Safety Systems, Inc  
12411 McCann Drive  
Santa Fe Springs, CA 90670