

Rear View Camera

INSTRUCTION MANUAL



- * **Model** VTL275HDL
 VTL375HDL
 VTL405HDL
 VTL425HDL

Before Use/ Installation Procedure

WARNING

- The LED lights and camera must be turned off if the vehicle is not in reverse. The camera with the built-in lights are to be installed so that it turns on only in reverse mode.
- Installation and wiring of this product require specialist skill and experience. To assure your safety, please request a specialist technician to install the unit.

CAUTION

To prevent damage to the product, take the following precautions:

- Make sure to ground the unit to a negative 12V DC power supply.

Caution:

1. Be careful that people are not exposed to the product as they generate heat over a long period of time when LED is powered on. Exposing a part of your hand close to the heat from the product may cause a burn.
2. Do not see the LED light directly, it may cause a blindness.
3. The colored guide lines on the display screen indicate vehicle width and approximate distances to objects with reference to the vehicle body line.
4. There are some areas where the system will not show objects.
5. The distance between objects viewed on the display screen may differ from the actual distance.
6. Install so that it does not obstruct the rear field of view.
7. Do not perform installation in rain or fog.
8. When humidity is high, dry the surface to which the unit is to be attached before installing.
9. Do not apply water to the unit.
10. Do not expose the unit to rain.
11. Do not subject the camera to unnecessary force.

NOTE

- This product is a rear view camera for checking the view at the rear of a car.
- This product is designed to supplement the driver's rear view, but the camera images do not show all dangers and obstacles. Be sure to look behind you when reversing to confirm the view.
- This product features a wide-angle lens, so the near view is wide and the far view is narrow, which may create a false sense of distance. Be sure to look behind you when reversing to confirm the view.
- Do not wash your car with an automatic car wash or high-pressure water as it may result in water entering the camera or the camera falling off.
 - If the rear view camera comes loose while you are driving it may cause an accident.
- Before finally installing the unit, connect the wiring temporarily, making sure it is all connected up properly, and the unit and the system work.
- Do not mount this unit near the heater outlet, where it would be affected by heat, or near the doors, where rainwater might splash onto it. (Never install in locations such as the above because of the danger of malfunction due to high temperatures.)
- Before drilling any mounting holes always check behind where you want to drill the holes. Do not drill into the gas line, brake line, electrical wiring or other important parts.

Care and maintenance

- When the product gets dirty, wipe dry with a silicon cloth or soft cloth. If it is seriously stained, remove stain with a cloth moistened with a neutral cleaner and then wipe the cleaner away. Do not use a hard cloth and/or a volatile substance such as lacquer thinner or alcohol, scratches, deformation, degradation and/or damage may result.
- When a lens component gets dirty, wipe gently with a soft cloth moistened with water. Do not rub with a dry cloth to prevent scratching the lens.

Table of contents

1. Package -----	5
2. Recommended Installation Position -----	6~7
3. Wring Connections -----	8
4. Camera Setting -----	8~9
5. Viewing Modes -----	10~12
6. Dimension(inch)-----	13~14
7. Specification-----	15

Vision Tech America, Inc.

Limited One Year Warranty

This limited warranty is given to the end-user or the retail purchaser (referred to this warranty as "Original Purchaser") that it will be free from defects in material and workmanship for a period of one year from the date of the purchase of the new product (excluding accessory items such as power cords, cradle, memory card, adaptor and cables).

A copy of the original proof of purchase and this warranty card with RMA number given by Vision Tech America, Inc. is required to receive warranty service. In the unlikely event that the new product should fail due to defect in material or workmanship, Vision Tech America, Inc. will repair or replace the entire product, where each party will be responsible for one-way shipping.

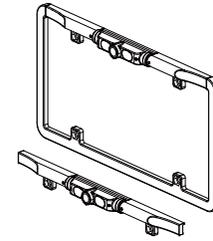
This limited warranty does not cover any physical damage to this product, damage caused by improper installation; improper use; misuse; neglect; repair of cracked, scratched, broken or modified cosmetics; or parts that have been altered or removed; damages done by another device used with this product resulting from use of non Vision - brand parts. This warranty is VOID if you purchased this product as used, floor model sample, or refurbished; if the product has been altered or modified in any way (including but not limited to attempted repair without authorization from Vision - Vision Tech America, Inc. and/or alteration/removal of the serial number). This limited warranty does not cover the vehicle of any damages or liabilities in which this product is installed or being installed. This product does not guarantee avoidance of vehicle collision or accident.

If you think your product is eligible for warranty service, report to Vision Tech America, Inc. at 888-941-3060 or email: info@boyvta.com to receive an RMA Number with further instructions.

Model Number: _____ Name: _____
 Serial Number: _____ Your address: _____
 Date of Purchase: _____ City: _____
 Purchased Store Name: _____ State: _____ Zip _____
 RMA Number: _____ Country: _____

Important: To send defective product for warranty service, you must receive RMA (Return Material Authorization) and include original proof of purchase and this warranty card with the shipment.

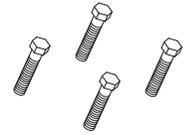
1. Package



Camera x1



manual x1



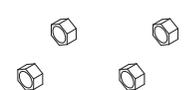
M6 Hex bolt x4



Spring washer x4



Plate washer x4



M6 Hex nut x4



1.5Ø L-Wrench x1



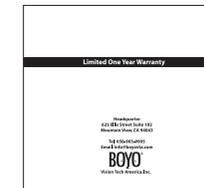
Adaptor cable x1



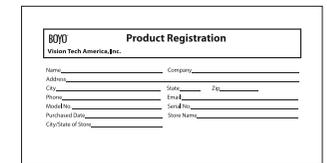
6Ø Tube x1



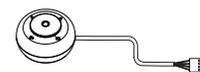
23ft Extension cable x1



Warranty card x1



Registration card x1



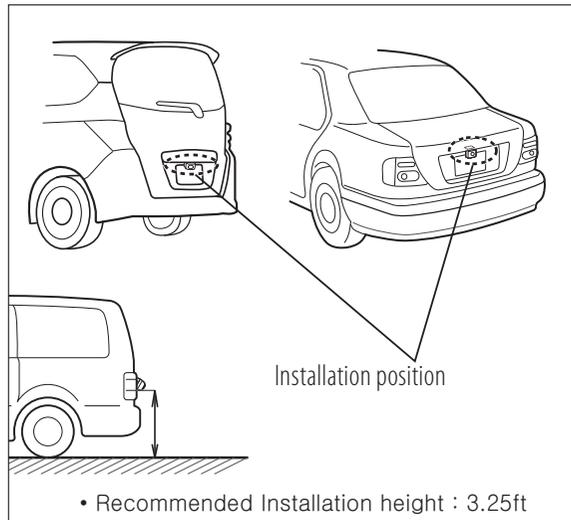
Remote controller x1



Velcro tape x1

2. Recommended Installation Position

2-1 Examples of correct camera installation



1. Decide the camera installation position.

2. Clean the camera installation surface.

Using a commercially available cleaner, wipe dirt, moisture and oil away from the surface on which the camera is to be attached.

3. Mount the camera on the license plate.

4. Fix the camera temporarily with screw.

5. Complete all of the required connections.

6. Display the camera video.

Some video monitors may switch automatically to the external video input function. For details, read the instruction manual for your video monitor.

7. Change the shift lever to the R (Reverse) range to view the image of the rear of the vehicle.

Before viewing the camera, apply the parking brake and chock the wheels so that the vehicle will not move. Otherwise, an unexpected accident may result.

8. Adjust the camera angle so that the rear part of the vehicle or the rear bumper is visible at the bottom of the monitor screen.

When adjusting the camera angle, be careful not to stretch the camera cord.

9. After adjusting the camera angle, tighten the retaining screws firmly.

Inspect the retaining screws at times. If they are loose, tighten them firmly.

10. Perform the operations in "Camera Setting".

If an adjustment is not possible in the currently available range, change the camera position before retrying.

11. Fix the camera firmly in position.

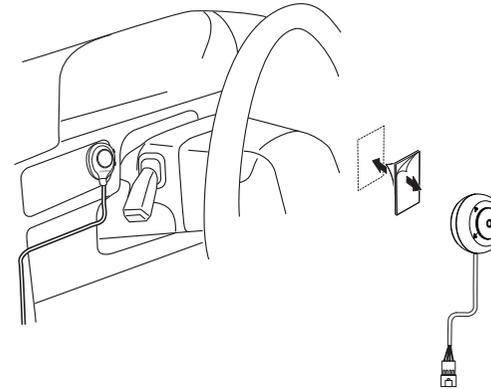
2. Recommended Installation Position

2-2 Installing the Switch Unit

1. Clean the switch unit installation surface.

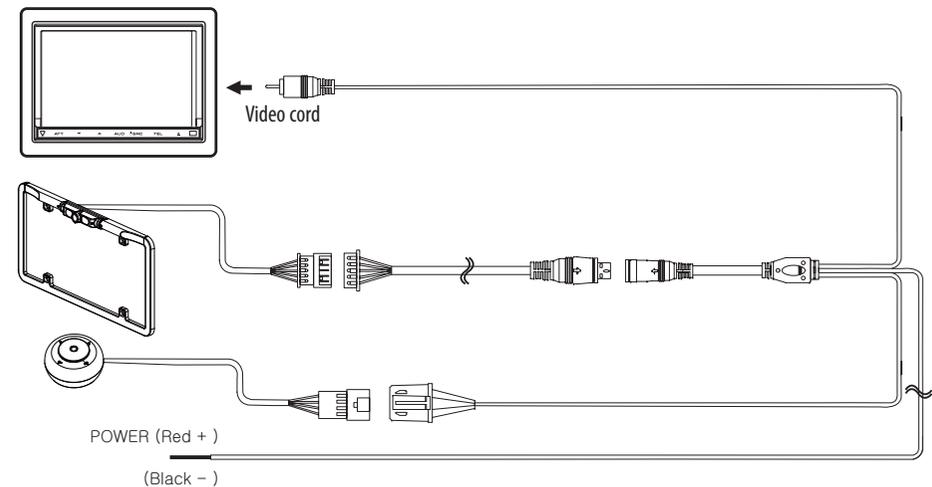
Using a commercially available cleaner, wipe dirt, moisture and oil away from the surface on which the switch unit is to be attached.

2. Attach velcro tape on the bottom of the switch unit and then attach it in an easy-to-operate position, for example near the dashboard on the driver seat side.



3. Wiring Connections

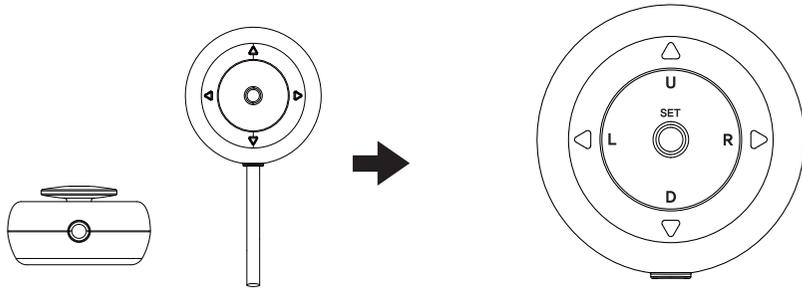
3-1. Basic Connections



4. Camera Setting

4-1. Switch Unit Operation

The switch unit can be used to switch the image display mode, view/hide the guideline display and adjust the camera.



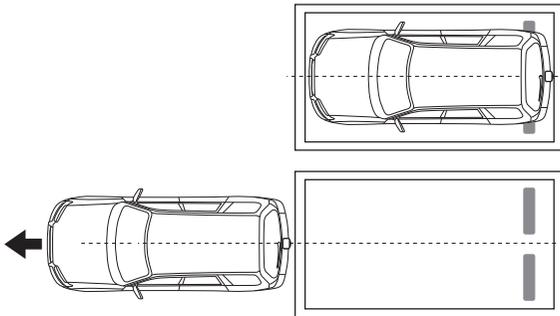
4-2. Preparation Before Camera Setting

1. Stop the vehicle.

In a parking space with white lines and tire stoppers, park the vehicle in the center of the white line frame.

2. Advance the vehicle.

- Move the vehicle forward until the entire parking space can be viewed in the camera image.
- Be sure to apply the parking brake and push the brake pedal so that the vehicle is completely stationary. Perform the setting in a place that will not cause nuisance to other people.



5. Viewing Modes

5-1. Use the "SET" button to cycle through the different viewing modes.

* LDC : Lens Distortion Correction

Viewing mode #1 (LDC)
(Factory Default)



Viewing mode #2
(Enlarged LDC with Split Screen)



Viewing mode #3
(Split Screen : Left, right)



Viewing mode #4
(Split Screen : Up, Down)



Viewing mode #5
(Top view)

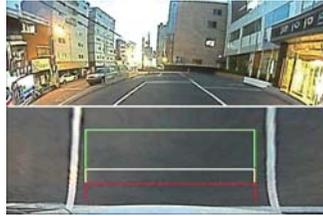


5. Viewing Modes

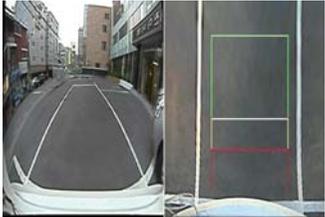
Viewing mode #6
(LDC with parking lines)



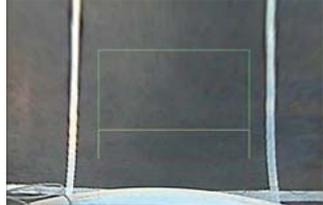
Viewing mode #7
(Split Screen with parking lines : Up, Down)



Viewing mode #8
(Split Screen with parking lines : Left right)



Viewing mode #9
(Top view with parking lines)



5. Viewing Modes

5-2. Features on/off

Turning on and off the mirror imaging

While the camera is on any of the viewing modes 1 through 6, press the "LEFT" button to turn on or off the mirror imaging.



(Mirror Off)



(Mirror On)

Turning on and off the defog feature

While the camera is on any of the viewing modes 1 through 6, press the "RIGHT" button to turn on or off the defog feature.



(Defog Off)



(Defog On)

Turning on and off the ACCE(Adaptive Color & Contrast Enhancement) feature

While the camera is on any of the viewing modes 1 through 6, press the "UP" button to turn on or off the ACCE feature.



(ACCE Off)



(ACCE On)

5. Viewing Modes

Turning on and off the LED lights

While the camera is on any of the viewing modes 1 through 6, press the "DOWN" button to turn on or off LED lights.



(LED Off)

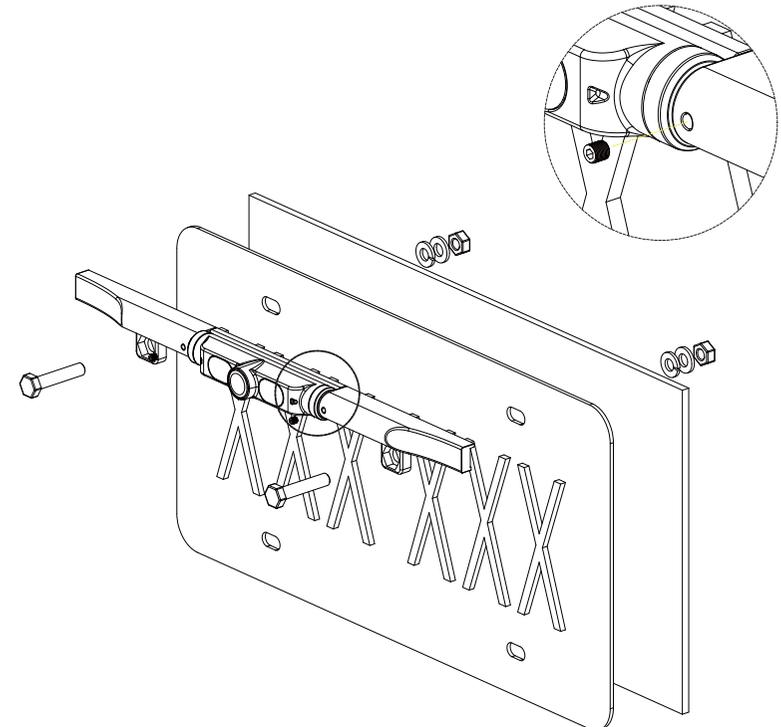
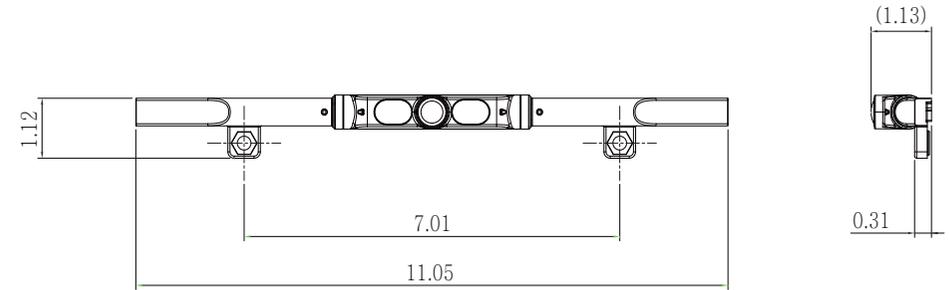


(LED On)

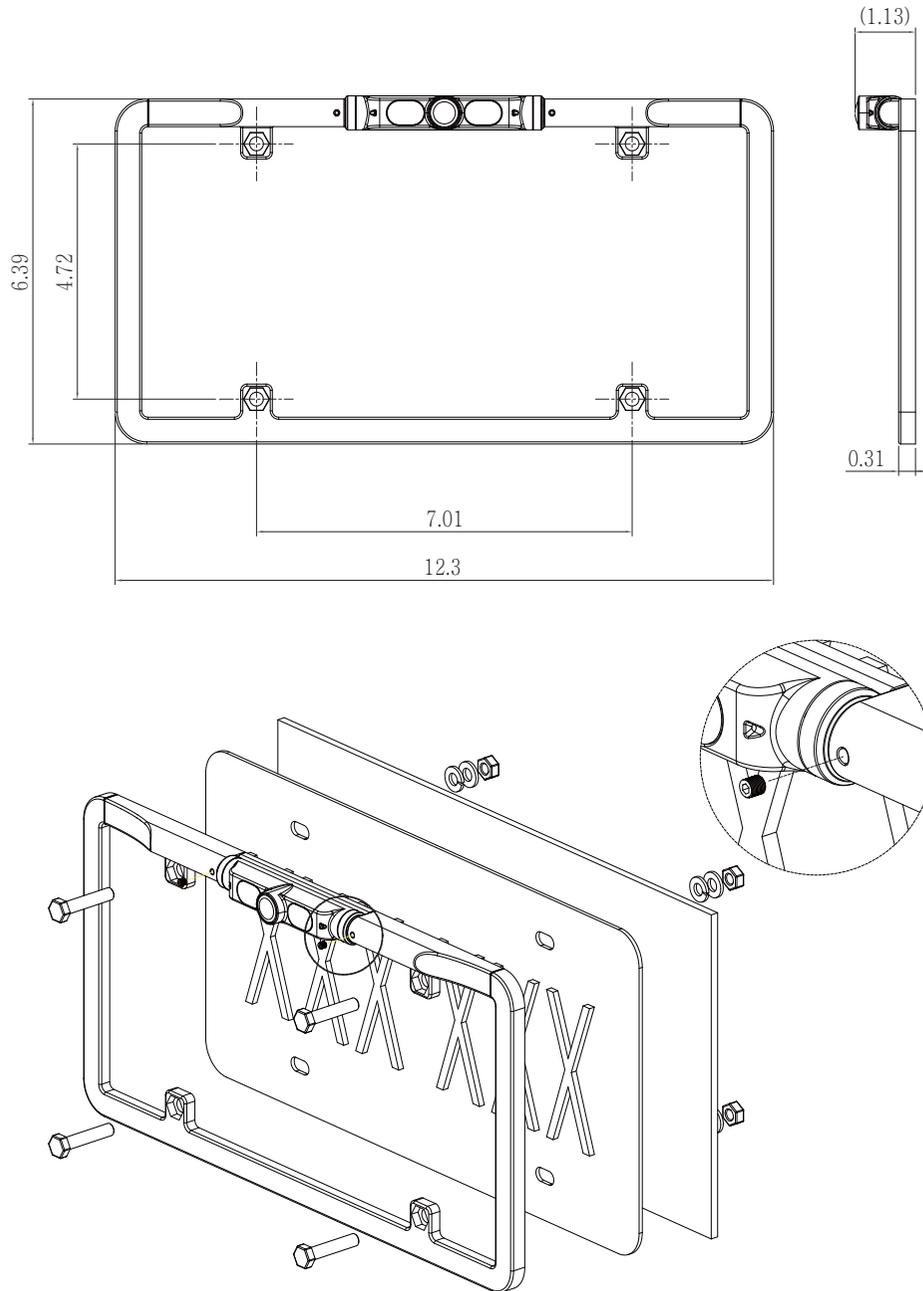
5-3. How to adjust the parking lines

While in the desired viewing mode with the parking lines (Viewing modes 4 through 6), by pressing the "SET" button, then the green lines will blink. Use the "LEFT" and "RIGHT" buttons to either shrink or expand the lines. After finish, press the "SET" button to move onto the yellow lines. While the yellow lines are blinking, use the "LEFT" and "RIGHT" buttons to shrink or expand the lines. Then press the "SET" button to move onto the red lines. While the red lines are blinking, use the "LEFT" and "RIGHT" buttons to shrink or expand the lines. Then press "SET" to move onto the all the lines. While all the colored lines are blinking, use the "LEFT" and "RIGHT" buttons to shift the entire lines up and down. To save your settings, hold down "SET" button for three seconds. Saving options will be prompted on the screen. Select the save option and exit by pressing "SET" button.

6. Dimension(inch)



6. Dimension(inch)



7. Specification

MODEL	VTL275HDL,VTL375HDL,VTL405HDL,VTL425HDL		
POWER	DC12V	LED OFF	80mA
		LED ON	580mA
	DC24V	LED OFF	50mA
		LED ON	300mA
Image sensor	1/4 inch HD Sensor		
Total Pixel	1280 X 800		
Scanning system	Progressive scan		
Resolution	960H		
Shutter Speed	AUTO		
S/N Ratio	50dB(AGC OFF)		
GAMMA	r = 0.45		
Gain Control	AUTO		
Min.Illumination	0.5Lux at F1.2(LED Off), 0Lux at F1.2(LED On)		
White Balance	AUTO		
3D DNR	AUTO		
DEFOG	ON / OFF		
DWDR	ON / OFF		
LED	ON / OFF		
MIRROR	ON / OFF		
LENS	1.2mm Board lens(192°D)		
VIEW MODE	1. LDC		
	2. 2 section		
	3. LDC + TOP (left right)		
	4. LDC + TOP (up down)		
	5. TOP		
	6. LDC + PGL		
	7. LDC + TOP(up down) + PGL		
	8. LDC + TOP(left right) + PGL		
	9. TOP + PGL		
MTBF	20,000hours		
Operating temperature / Humidity	-10°C to +50°C / Under 90% Non-condensing		
Storage temperature / Humidity	-20°C to +60°C / Under 90% Non-condensing		

* Specifications are subject to change without prior notice for improvement.